Title: Congenital Tracheoesophageal Fistula diagnosed on Esophagoscopy in an asymptomatic adolescent girl: Case report

Aakash Goyal 1, Ruby Mehta 1, Shailender Madani 1
1) Children’s Hospital Of Michigan, Detroit, United States

Summary: Tracheoesophageal fistula without esophageal atresia (H-type fistula) is a rare congenital anomaly. Infants with esophageal atresia (EA) become symptomatic at birth. The H-type fistula may persist until adulthood. These patients have prolonged history of respiratory distress with feeding or recurrent pneumonia. We present a case report of an adolescent girl without respiratory symptoms in whom TEF was detected incidentally on esophagogastroduodenoscopy. Case Report A 13 year old girl with mental retardation, coloboma, cataract, retinal detachment presented with vomiting of 7 month duration without abdominal pain. She had coloboma affecting optic nerve, retina and iris in the left eye and cataract in both eyes. She had placement of gastrostomy tube (G-Tube) at 4 months of age for failure to thrive. The removal of G tube was complicated by development of gastrocutaneous fistula which was repaired at 6 year of age. There was no history of respiratory symptoms in the past. The genetics evaluation including FISH study was negative. She had high H pylori antibody titer. EGD showed an oval opening in proximal esophagus 16-17 cms from the incisors. The endotracheal tube was visible through the opening (Fig 1). There was no history of blunt chest trauma, corrosive or foreign body ingestion, prolonged intubation and surgery on trachea or esophagus. The TEF was closed successfully with laser and fibrin glue. Discussion H type fistula accounts for only 5% of all TEFs and may be missed in infancy. It presents as frequent respiratory infections and coughing episodes while feeding. This patient had no respiratory symptoms. She had TEF without EA with other congenital abnormalities which do not fit in the VACTERL association. Patients with CHARGE syndrome have coloboma and TEF but the other features of CHARGE syndrome were absent. The diagnosis of TEF is sometimes made at the time of endotracheal intubation for some other surgical procedure. The patient had endotracheal intubation as part of general anesthesia multiple times in the past for eye and dental surgeries but the TEF was not visualized. TEF was found incidentally on EGD. There are case reports of congenital TEF seen in adults but there has been no report in literature where TEF was diagnosed in an asymptomatic adolescent on esophagoscopy which is a part of EGD. Conclusion. The meticulous examination during EGD can reveal incidental findings which are unrelated to the indication of the procedure.
Title: Goltz Syndrome: case report

Selma Sabra 1, Ricardo Ebecken 1, Aderbal Sabra 2
1) UFF, Niteroi, Brazil 2) Unigranrio, Duque de Caxias, Brazil

Summary:
Introduction: Focal dermal hypoplasia (FDH) is an uncommon genetic disorder characterized by distinctive skin abnormalities and a wide variety of defects that affect the eyes, teeth, skeletal, urinary tract, gastrointestinal and central nervous systems. Methods: N.A, female, 11 years old, with multiple anomalies. She has anophthalmia, dysplasia of the teeth, syndactyly, cardiovascular and genitourinary abnormalities. This study of the function of the gastrointestinal tract showed malabsorption and failure to thrive, and abnormalities at endoscopy. Results: Upper GI Endoscopy showed multiple papillomatous lesions, more than one hundred, distributed from the proximal esophagus until the cardia. Conclusion: This Syndrome is an uncommon but not rare disorder. The exact incidence and prevalence are unknown. The findings of multiple papillomas of the esophagus are not common.

Title: Clinical and laboratory predictors of esophageal varices in children and adolescents with portal hypertension syndrome

Eleonora D T Fagundes 1, Alexandre R Ferreira 1, Paulo F S Bittencourt 1, Mariza L V Roquete 1, Simone D Carvalho 1, Francisco J Penna 1
1) Hospital das Clínicas UFMG, Belo Horizonte, Brasil

Summary:
Objectives: to determine the clinical and laboratory parameters that may predict the presence of esophageal varices in children and adolescents with portal hypertension. Methods: 111 patients with portal hypertension, with no previous history of digestive bleeding underwent esophagogastroduodenoscopy for detection of esophageal varices. A univariate analysis was initially carried out, followed by a logistic regression analysis to identify the independent variables associated with the presence of esophageal varices. Sensitivity and specificity rates, positive predictive value, negative predictive value, and the accuracy of the predictive variables identified among cirrhotic patients were calculated having the esophagogastroduodenoscopy as the reference test. Results: Sixty per cent of patients had esophageal varices on the first esophagogastroduodenoscopy. Patients with portal vein thrombosis and congenital hepatic fibrosis were 6.15-fold more likely to have esophageal varices than cirrhotic patients. When we analyzed 85 cirrhotic patients alone, splenomegaly and hypoalbuminemia remained significant indicators of esophageal varices. Only spleen enlargement showed appropriate sensitivity and negative predictive value to be used as screening test for esophageal varices among cirrhotic patients (97.7 and 91.7%, respectively). Conclusions: In reference services and research protocols, endoscopic screening should be performed in all patients with portal vein thrombosis and congenital hepatic fibrosis; among cirrhotic patients, the indication should be conditioned to clinical evidence of splenomegaly and hypoalbuminemia. Only cirrhotic patients with hypoalbuminemia and splenomegaly should receive the same orientations.

Title: Endoscopy and laryngeal mask. Use in children under 3 years.

A. Rodríguez Herrera 1, F. Suarez 2, P. Gracia 2, B. Amil 1, A. Carmona 1
1) Instituto Hispalense de Pediatria, Sevilla, Spain 2) USP Clinica Sagrado Corazón, Sevilla, Spain

Summary:
Introduction: The laryngeal mask (LM) has an extensive use in surgical process in children. As alternative to traditional endotracheal intubation it shows the advantage of avoiding use of muscular relaxation, easier use for personal without familiarity with children`s airway. Literature shows few series of upper gastrointestinal endoscopy using laryngeal mask, especially related to children under 3 years. Methods: 50 infants (ages 4 to 36 months, mean 20.8 months), scheduled for outpatient upper gastrointestinal endoscopy. Emergency procedures were excluded. All patients followed previous exam by an anesthetist. All patients were ASA I/II Independent written consent was obtained for both procedures, employ of
Endoscopic clip application for traqueoesophageal and esophagomediastinal fistula

Ana B Muñoz 1, Raúl Yoza 1, Carlos Contardo 1, Alex Delgado 1, Raúl Castillo 1
1) Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú

Summary:
Muñoz Ana, Yoza Max, Delgado Alex, Contardo Carlos, Monsante Lucrecia and Castillo Raúl. Hospital Nacional Edgardo Martins, Lima – Perú. Objective: To present the first experience in our country with endoscopic clip application for traqueoesophageal and esophagopleural fistula closure in children. Methods and Results: Two patients: 1) Male, four months of age, wasted and stunted, 18th day after surgery of traqueoesophageal fistula (H type) presents salive drainage by pleural tube (esophagopleural fistula). We proceed to therapy by argon plasma application to open ending of fistula and closure by endoscopic clip application. The fistula had three millimeters of diameter size. He didn't have fistula recurrence at ten months of age, and did growth well. 2) Female, five year of age. She has open fistula repair and esophageal anastomosis at birth by congenital esophageal atresia and traqueoesophageal fistula. At four years of age (after many pneumonia episodes) had fistula recurrence diagnosis by fibrobronoscope. At five years of age we proceed to fistula closure by endoscopic clip application. The fistula had five millimeters of diameter size. In this case, previously we used argon plasma coagulation and brushing of fistula. She didn't have any respiratory symptoms after the procedure and endoscopic control one month later show fistula closed. Conclusion: Children with traqueoesophageal fistula at birth have many nutritional and respiratory...

P0007

Title:
Endoscopic clip application for traqueoesophageal and esophagomediastinal fistula

Ana B Muñoz 1, Raúl Yoza 1, Carlos Contardo 1, Alex Delgado 1, Raúl Castillo 1
1) Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú

Summary:
Muñoz Ana, Yoza Max, Delgado Alex, Contardo Carlos, Monsante Lucrecia and Castillo Raúl. Hospital Nacional Edgardo Martins, Lima – Perú. Objective: To present the first experience in our country with endoscopic clip application for traqueoesophageal and esophagopleural fistula closure in children. Methods and Results: Two patients: 1) Male, four months of age, wasted and stunted, 18th day after surgery of traqueoesophageal fistula (H type) presents salive drainage by pleural tube (esophagopleural fistula). We proceed to therapy by argon plasma application to open ending of fistula and closure by endoscopic clip application. The fistula had three millimeters of diameter size. He didn't have fistula recurrence at ten months of age, and did growth well. 2) Female, five year of age. She has open fistula repair and esophageal anastomosis at birth by congenital esophageal atresia and traqueoesophageal fistula. At four years of age (after many pneumonia episodes) had fistula recurrence diagnosis by fibrobronoscope. At five years of age we proceed to fistula closure by endoscopic clip application. The fistula had five millimeters of diameter size. In this case, previously we used argon plasma coagulation and brushing of fistula. She didn't have any respiratory symptoms after the procedure and endoscopic control one month later show fistula closed. Conclusion: Children with traqueoesophageal fistula at birth have many nutritional and respiratory...

P0006

Title:
Indications of upper and lower GI tract diagnostic and therapeutic endoscopy in a pediatric referral hospital.

Alfredo Larrosa-Haro 2, Hugo Sepúlveda-Vázquez 1, M Carmen Bojórquez-Ramos 1, Rocio Macías-Rosas 1, Yolanda A Castillo de León 1, Osvaldo García-Salazar 1
1) Servicio de Gastroenterología y Nutrición y Unidad de Investigación Médica, UMAE Hospital de Pediatría, CMNO, IMSS, Guadalajara, México. 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Guadalajara, México.

Summary:
Indications of upper and lower GI tract diagnostic and therapeutic endoscopy in a pediatric referral hospital.

P0006

Title:
Indications of upper and lower GI tract diagnostic and therapeutic endoscopy in a pediatric referral hospital.

Alfredo Larrosa-Haro 2, Hugo Sepúlveda-Vázquez 1, M Carmen Bojórquez-Ramos 1, Rocio Macías-Rosas 1, Yolanda A Castillo de León 1, Osvaldo García-Salazar 1
1) Servicio de Gastroenterología y Nutrición y Unidad de Investigación Médica, UMAE Hospital de Pediatría, CMNO, IMSS, Guadalajara, México. 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Guadalajara, México.

Summary:
Indications of upper and lower GI tract diagnostic and therapeutic endoscopy in a pediatric referral hospital.

P0007

Title:
Endoscopic clip application for traqueoesophageal and esophagomediastinal fistula

Ana B Muñoz 1, Raúl Yoza 1, Carlos Contardo 1, Alex Delgado 1, Raúl Castillo 1
1) Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú

Summary:
Muñoz Ana, Yoza Max, Delgado Alex, Contardo Carlos, Monsante Lucrecia and Castillo Raúl. Hospital Nacional Edgardo Martins, Lima – Perú. Objective: To present the first experience in our country with endoscopic clip application for traqueoesophageal and esophagopleural fistula closure in children. Methods and Results: Two patients: 1) Male, four months of age, wasted and stunted, 18th day after surgery of traqueoesophageal fistula (H type) presents salive drainage by pleural tube (esophagopleural fistula). We proceed to therapy by argon plasma application to open ending of fistula and closure by endoscopic clip application. The fistula had three millimeters of diameter size. He didn't have fistula recurrence at ten months of age, and did growth well. 2) Female, five year of age. She has open fistula repair and esophageal anastomosis at birth by congenital esophageal atresia and traqueoesophageal fistula. At four years of age (after many pneumonia episodes) had fistula recurrence diagnosis by fibrobronoscope. At five years of age we proceed to fistula closure by endoscopic clip application. The fistula had five millimeters of diameter size. In this case, previously we used argon plasma coagulation and brushing of fistula. She didn't have any respiratory symptoms after the procedure and endoscopic control one month later show fistula closed. Conclusion: Children with traqueoesophageal fistula at birth have many nutritional and respiratory...

P0006

Title:
Indications of upper and lower GI tract diagnostic and therapeutic endoscopy in a pediatric referral hospital.

Alfredo Larrosa-Haro 2, Hugo Sepúlveda-Vázquez 1, M Carmen Bojórquez-Ramos 1, Rocio Macías-Rosas 1, Yolanda A Castillo de León 1, Osvaldo García-Salazar 1
1) Servicio de Gastroenterología y Nutrición y Unidad de Investigación Médica, UMAE Hospital de Pediatría, CMNO, IMSS, Guadalajara, México. 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Guadalajara, México.

Summary:
Indications of upper and lower GI tract diagnostic and therapeutic endoscopy in a pediatric referral hospital.

P0007

Title:
Endoscopic clip application for traqueoesophageal and esophagomediastinal fistula

Ana B Muñoz 1, Raúl Yoza 1, Carlos Contardo 1, Alex Delgado 1, Raúl Castillo 1
1) Hospital Nacional Edgardo Rebagliati Martins, Lima, Perú

Summary:
Muñoz Ana, Yoza Max, Delgado Alex, Contardo Carlos, Monsante Lucrecia and Castillo Raúl. Hospital Nacional Edgardo Martins, Lima – Perú. Objective: To present the first experience in our country with endoscopic clip application for traqueoesophageal and esophagopleural fistula closure in children. Methods and Results: Two patients: 1) Male, four months of age, wasted and stunted, 18th day after surgery of traqueoesophageal fistula (H type) presents salive drainage by pleural tube (esophagopleural fistula). We proceed to therapy by argon plasma application to open ending of fistula and closure by endoscopic clip application. The fistula had three millimeters of diameter size. He didn't have fistula recurrence at ten months of age, and did growth well. 2) Female, five year of age. She has open fistula repair and esophageal anastomosis at birth by congenital esophageal atresia and traqueoesophageal fistula. At four years of age (after many pneumonia episodes) had fistula recurrence diagnosis by fibrobronoscope. At five years of age we proceed to fistula closure by endoscopic clip application. The fistula had five millimeters of diameter size. In this case, previously we used argon plasma coagulation and brushing of fistula. She didn't have any respiratory symptoms after the procedure and endoscopic control one month later show fistula closed. Conclusion: Children with traqueoesophageal fistula at birth have many nutritional and respiratory...
handicaps. Open surgery is don’t free of complications, mainly if nutritional compromise is present. We present two cases that resolve by endoscopic clip application. We encourage use of this method by safe and efficient for traqueoesophageal or esophagopleural fistula closure in children.

P0008

Title: HELICOBACTER PYLORI IN CHILDREN: HOSPITAL NACIONAL CAYETANO HEREDIA, LIMA-PERU, YEARS 2003 TO 2006

Ana Muñoz 1, Alejandro Bussalleu 2, Aldo Maruy 2, Delfina Cetraro 2, Jaime Cok 2, Felix Takami 2
1) Hospital Nacional Edgardo Rebagliati Martins , Lima, Peru 2) Hospital Nacional Cayetano Heredia, Lima, Peru

Summary: HELICOBACTER PYLORI IN CHILDREN: HOSPITAL NACIONAL CAYETANO HEREDIA, LIMA-PERU, YEARS 2003 TO 2006 OBJECTIVES: This study reports the clinical and histopathological features of Helicobacter pylori (HP) infection in children at Cayetano Heredia University Hospital in Lima, Peru. METHODS: Information on endoscopies and biopsies from medical records and biopsy reports from July 2003 to November 2006 were obtained. RESULTS: 210 endoscopies and 111 biopsies were done. HP prevalence was 45.9 % (51 out 111 patients). HP positive patients were older than HP negative (11 versus 8.9 years, p = 0.009). Endoscopic “nodular gastritis” were HP status dependent (64.7 versus 21.7%, p = 0.001) although “oesophagitis” was more frequent between HP negatives (2.0 versus 21.7%, p<0.05). 8 out 11 ulcers were HP positives. Histopathological findings in HP positive included more: 1) Inflammation activity “D polymorphonuclears in the submucose” D, 2) Chronic gastritis “D lymphomononuclears in the submucose”, and 3) Lymphoid follicle. Dysplasia, atrophie or intestinal metaplasia were absent in our biopsies. CONCLUSION: A high prevalence of HP infection among children was founded. Metaplasia, atrophia and dysplasia were absent. The presence of chronic gastritis; inflammatory activity lymphoid follicle were associated to HP significantly.

P0009

Title: Subcutaneous emphysema following endoscopy in a child – a case report

Babu Vadmalayan 1, Pradnya Sheth 1, Albert Koomson 1, Muftah Eltumi 1
1) Watford General Hospital, London, UK

Summary: We report a child who developed subcutaneous emphysema in the absence of perforation following diagnostic upper and lower endoscopy procedure. A 15-year-old girl presented with 4-month history of diarrhoea with blood and mucus, weight loss and abdominal pain. On examination she looked pale and noted to have mild left iliac fossa tenderness. An initial investigation revealed her haemoglobin 8.5g/dl, Platelets 693x109/l, albumin 30 g/dl and ESR 63mm/hr. She had Oesophago-Gastro duodenoscopy (OGD) and ileo-colonoscopy performed electively under general anaesthesia. She was intubated (grade I) with size 7.0-cuffed endotracheal tube (leak was observed at 22cm H2O). Macroscopically she was noted to have pan colitis with normal OGD. Procedure was uncomplicated and no trauma was noticed on withdrawal of the scope. The child was discharged home on the same day. Histology report was typical of ulcerative colitis with features of pan colitis and upper endoscopy biopsy series were normal. She was started on oral prednisolone in addition to mesalazine and antibiotics. Two weeks after endoscopy she presented with difficulty in swallowing and pain in her shoulders for a day. On examination there was a minimal swelling with crepitus in the supra clavicular region on both sides and she was well otherwise. X ray revealed bilateral subcutaneous emphysema with minimal pneumomediastinum and no evidence of pneumoperitoneum. She was started on oral prednisolone in addition to mesalazine and antibiotics. Two weeks after endoscopy she presented with difficulty in swallowing and pain in her shoulders for a day. On examination there was a minimal swelling with crepitus in the supra clavicular region on both sides and she was well otherwise. X ray revealed bilateral subcutaneous emphysema with minimal pneumomediastinum and no evidence of pneumoperitoneum. She had multiple normal investigations including Computerized Tomogram of chest, echocardiogram, metabolic investigations including screening for homocystinuria, alpha1 antitrypsin deficiency, autoantibody screening and genetic screening for Marfan syndrome. Her symptoms gradually improved and discharged home after 5 days of observation. Spontaneous subcutaneous emphysema has been reported in adult patient who had undergone gastric antral biopsy and those who had a potential site of weakness such as a diverticulum near the posterior edge of the retro-peritoneum. Subcutaneous emphysema following routine endotracheal intubation is a rare complication. Two mechanisms for air leakage have been postulated in the literature. Firstly, a tear in the tracheal mucosa may occur on either passage of endotracheal tube or over inflation of the cuff. Secondly, there may be congenital dehiscence in the mucosa, which can rupture if the ventilatory pressures are high.

P0010

Title: Eleven-year experience dealing with foreign bodies ingestion in pediatric patients

Carlos O Muller 1, Patricia S Dvorkin 1, Eduardo G Segal 1
1) Hospital Durand, Buenos Aires, Argentina
Summary:
Purpose: This paper aims at presenting an 11-year experience involving 723 cases of children swallowing foreign bodies (FBs). 109 patients having accidentally swallowed 113 FBs had to have an endoscopy performed. Three patients had swallowed multiple bodies (2 bed bugs; and 2 and 3 button batteries). In the case of the 614 patients where an expectant attitude was adopted, no complications arose. Method: Patients aged between 9 months old and 16 years were treated. Any type of FB at the upper esophageal tract was regarded as a pressing condition to be addressed. FBs had to be urgently removed regardless of the site where they were located due to their special characteristics like their shape, chemical contents, or toxic potentiality. The removal of FBs from the stomach was based on one or more of these reasons: the size of the foreign body, it was a sharp-pointed object, it caused a mechanical obstruction, or it was likely to cause an injury. Also, a FB was removed when it had been inside the stomach for over 1 month. A laryngoscopy was used in 10 cases. In one of those cases a rigid esophagoscopy was used, and in the other 90 cases a flexible one was used. X-rays were taken before an endoscopy. No FBs were found in 33 cases. Still, an endoscopy was performed when it was strongly believed that a FB had been swallowed, when symptoms developed, or when fish had been eaten before. 89% of this group patients were saved. 98% of the patients were given general anaesthetics. Outcomes: Out of the 113 patients who had swallowed FBs, 101 of them were successfully removed (89% rate), and no FBs were found in 11 cases. The other bodies were surgically removed. Out of 101 FBs swallowed, 10 were removed from the pharynx, 54 from the upper esophagus, 13 from the middle esophagus, 7 from the lower esophagus tract and 17 from the stomach. No cases of morbimortality was found. Conclusions: • Children swallowing FBs is a regular type of accident. • The age group with the highest frequency in this type of accidents ranged from 1 to 3 years of age. • Coins were the most regularly swallowed objects. • The upper esophagus sphincter was the site where FBs were most likely to be found. • The criteria used for the FB endoscopy were safe and effective. • Easily swallowed objects within little children’s reach pose a latent risk to be avoided by instructing parents about it.
Objectives: To compare tolerability, effectiveness and safety of Pico-Salax (sodium picosulphate with magnesium citrate) versus polyethylene glycol with electrolyte solution (PEG) for bowel cleansing before colonoscopy in children. Methods: In this single blinded, randomized controlled trial, 83 children (12.5±3.1 years) needing non-urgent colonoscopy were randomized (n=43 Pico-Salax; n=40 PEG) and analyzed using the ITT approach. Patients with prior colectomy, bowel obstruction or contraindication to Pico-Salax or PEG were excluded. Only clear fluids were allowed 24 and 12 hours prior to colonoscopy in the Pico-Salax and PEG groups, respectively. Pico-Salax was given in 2 doses, one the evening before and one the morning of the procedure. PEG was given over 4 hours on the morning of the colonoscopy. Efficacy was scored by a blinded gastroenterologist by a validated scale (the Ottawa scale). Tolerability was measured by patient- and nursing-questionnaires and event logs. Vital signs, serum biochemistry and adverse events were recorded. Results: 35 (81%) of patients in the Pico-Salax group were satisfied or very satisfied with the cleansing, compared to 19 (48%) in the PEG group (P=0.001). A nasogastric tube was needed by 30 (75%) of the PEG group versus 1 in the Pico-Salax group (P<0.001). No differences were found in bowel cleansing effectiveness, as judged by the Ottawa cleansing score (P=0.24), colonoscopy completion rates (P=0.69), duration of colonoscopy (P=0.59), need for enemas (P=0.25), and physician’s general impression (P=0.7). In a multivariate regression analysis, the consistency and color of the last stool and the nurse’s global impression of adequacy of bowel cleansing before the colonoscopy were associated with the Ottawa score (P=0.001, and P=0.009 respectively), but the bowel cleansing regimen was not. Adverse event rates were similar between groups, including the incidence of dehydration, defined by vital signs, clinical need for fluid supplement and serum osmolarity. Serum biochemistry results were similar between groups except for a higher incidence of mild hypermagnesemia in the Pico-Salax group (18 (44%) vs. 0; P=0.001) and mild hypokalemia in the PEG group (14 (34%) vs. 21 (58%); P=0.01). No patient had clinically significant electrolyte abnormality. Conclusion: Children tolerate Pico-Salax better than PEG for bowel cleansing before colonoscopy. The effectiveness and toxicity of these treatments seem to be similar.

P0015

Title:
Patients’ satisfaction with the services of a pediatric digestive endoscopy unit: validation, and application of a questionnaire

Hamid Khour 1, Patricia Perreault 1, Denise Herzog 1
1) Sainte Justine Hospital, Montreal, Canada

Summary:
Patient satisfaction can be used as an indicator of quality of care, and the extent to which the needs and expectations of a patient group have been met. AIM: To assess global patient satisfaction with diagnostic upper and lower endoscopy via a questionnaire. METHOD: A questionnaire referring to the state of patient information, organizational issues, experiences of anxiety, pain and discomfort, medication side effects and global satisfaction was completed by the patient before and after, and by the endoscopy nurse during the procedure. RESULTS: 77 patients completed the questionnaire, 47 undergoing gastroscopy, 22 colonoscopy, and 8 both. 25 /77 patients were < 10 years of age, 52/77 patients >10, and 49% were girls. 40 patients underwent endoscopy under conscious sedation and 37 under general anaesthesia. 75 patients (96%) felt well informed, but 24% felt that there were organisational problems, and 19 (27%) patients with conscious sedation felt very anxious before the test. Of the 30 patients undergoing colonoscopy, 55% (16) experienced no pain, 45% (14) reported pain sensations, and 2 (6%) tests had to be interrupted. Totally 85% patients would have repeated the endoscopy in the same way, if required, and 89% indicated global satisfaction. In contrast, 2 patients treated with corticosteroids and 10 patients with proton-pump inhibitors did not take these medications the morning of general anaesthesia, and therefore were at increased risk for either adrenal insufficiency or intra-operative gastro-oesophageal reflux and aspiration. Additionally, 2/30 patients had insufficient colonic cleaning, resulting in an incomplete test in one. These latter 14 (18%) patients were globally satisfied. CONCLUSION: The rate of global satisfaction in our patients was high, although the questionnaire disclosed items to improve. These results suggest that the questionnaire is a valid tool to assess patients’ satisfaction and quality of care in our pediatric endoscopy unit.

P0018

Title:
Colonoscopic characteristics of infants with eosinophilic/allergic colitis

Gabor Veres 1, Petra Pintér 1, Hajnalka Gyõrffy 2, Kriszta Molnár 1, Antal Dezsõfi 1, András Arató 1
1) Ist Dept of Pediatrics, Budapest, Hungary 2) IInd Dept of Pathology, Budapest, Hungary

Summary:
Background: Rectal bleeding is an alarming symptom and requires additional investigations. Hematochezia in infancy has been explained mainly by allergic colitis since usually these patients are otherwise asymptomatic and exhibited normal growth and physical examinations with normal fecal culture and no signs for fissure. Aim: The objectives of this study were to evaluate prospectively the clinical course in breast-fed infants of rectal
P0019

Title:
CAPSULE ENDOSCOPY IN PEDIATRIC PRACTICE – THE BEGINNING OF A NEW EXPERIENCE IN ROMANIAN PEDIATRIC GASTROENTEROLOGY

Gabriela Lesanu 1, Florin Costea 2, Victoria Hurduc 3, Cristina Becheanu 1, Viorel Danila 1, Coriolan Ulmenau 1
1) Grigore Alexandrescu Emergency Children Hospital, Bucharest, Romania 2) Mc Gill University, Montreal, Canada 3) Victor Gomoiu Children Hospital, Bucharest, Romania

Summary:
OBJECTIVE: Capsule endoscopy (CE) opened new perspectives in the assessment of the small bowel pathology. However, few studies were performed in the pediatric population. We analyzed our initial experience with CE in pediatric practice in Romania. METHODS: We retrospectively reviewed all the records of the children who underwent CE in the Emergency Children Hospital. Eighteen patients (mean age 13 years), 10 male and 8 female, with suspected small bowel disease were selected for CE. Upper gastrointestinal endoscopy was performed in all patients, colonoscopy in 10 patients and gastrointestinal barium studies in 11 patients. We reviewed the usefulness of the investigation and the adverse events. RESULTS: Seventeen patients (mean age 13 years) swallowed the capsule without difficulty; only a 6 year old girl refused it and her family did not accept the placement of the capsule by endoscopy. The indications for CE included: suspected Crohn's disease (n=5), obscure gastrointestinal bleeding (OGBB) (n=3), Peutz-Jeghers syndrome (n=1), recurrent abdominal pain (n=3), unexplained sideropenic anemia (n=1) and evaluation for suspected celiac disease in 4 asymptomatic patients with positive anti-tissue transglutaminase antibodies. Crohn's disease was confirmed in 2 cases and was excluded in 3 children (2 children with jejunitis). The cause of bleeding was duodenal ulcer in one case and was not revealed in 2 cases (however, an ileal polyp was found in one patient). Suggestive signs of celiac disease were noticed in 3 asymptomatic patients (duodenal biopsy demonstrated villous atrophy in 2 children, while normal histology was found in 1 patient) and in the patient with anemia (later confirmed via biopsy). Six records showed normal small bowel (1 child with OGIB, 3 children with recurrent abdominal pain, 1 child with suspected celiac disease, 1 child with suspected Crohn's disease). There were no adverse events after the ingestion of the capsule; it was eliminated after 20-54 h. CONCLUSION: CE revealed pathologic findings in 64.7% cases (with a definite diagnosis in 47% cases and a possible diagnosis in 17.7% cases) and was normal or non diagnostic in 35.3% cases. A small number of cases were investigated for Crohn's disease which is still rare in children in our country. CE was a valuable tool in the diagnosis of celiac disease in asymptomatic children. CE proved to be safe and helpful in the evaluation of pediatric patients with suspected bowel disease.

P0020

Title:
Prevalence of Helicobacter pylori infection in children referred for endoscopy and its associated risk factors

Hui-Ping Chu 1, Nancy Tan 1
1) KK Hospital, Singapore, Singapore

Summary:
Objective: H. pylori is an important etiologic factor in the development of chronic superficial gastritis and peptic ulcer disease in adults and children. Although H. pylori is acquired in early childhood, it is often found to cause symptoms only at a much older age (more than 10 years old). Endoscopy is the preferred method of investigation in children with upper digestive symptoms suggestive of organic disease, with culturing of gastric
biopsy specimens for H. pylori infection as gold standard for diagnosis. We retrospectively assessed all the children who were referred for endoscopy to determine the prevalence of H. pylori infection among them and the risk factors associated. Methods: We reviewed a total of 66 children who underwent diagnostic upper GI endoscopy for the first time, over a period of 13 months. Results: The mean age was 11.4 years (4 months to 17 years), predominantly female (65%). The most common indication for endoscopy was abdominal pain (86%). The prevalence of H. pylori infection was 42%; however positive CLO test (12%) was a poor indicator. The prevalence was similar in boys and girls, which was different from previously reported. There was a higher prevalence found in Indians as compared to Chinese and Malays. We also reported 2 interesting cases of H. pylori infection in young infants (4 months and 7 months old) who presented with haematomesis and had recurrence of disease despite treatment. They eventually recovered only after screening and treatment of asymptomatic family members also with H. pylori infection. Conclusion: We found a high prevalence of H. pylori infection among our local paediatric population and that it can cause significant morbidity even at a young age. Hence it is prudent to screen the family as part of management of young children with H. pylori infection.

P0021

Title:
FOREIGN BODIES INGESTION. VERY FREQUENT IN CHILDHOOD

IDALIA CURA 1, MONTES T. FERNANDO 1, MENCHACA M. MARIO 1, FLORES MARTHA 1, ABREGO VALDEMAR 1
1) HOSPITAL UNIVERSITARIO DR JOSE E GONZALEZ, MONTERREY N.L., MEXICO

Summary:
Background: Ingested foreign objects may occur accidentally or deliberately. One third of foreign bodies retained in the gastrointestinal tract are present in the esophagus. Their management depends on the anatomic location, shape and size of the foreign body, and duration of impaction. Fortunately, 80% to 90% of ingested foreign objects that reach the stomach will pass uneventfully without intervention. The remainder may become lodged in the esophagus or other locations in the GI tract, placing the patient at risk for developing significant complications such as obstruction, aspiration, bleeding, perforation, fistulization, sepsis, and death. The true incidence of esophageal foreign bodies is unknown. Objective: Describe our experience in the presentation, management and complications of foreign bodies in the esophagus in children in a general hospital. Patients and Methods: Between October 2005 and March 2008, 96 patients with foreign bodies ingested were admitted to our pediatrician emergency room in the University Hospital “Dr Jose E. Gonzalez”. The children following a choking spell were initially evaluated by pediatricians, primarily in emergency department. Most were seen within 48 hours of the event. All of them were evaluated with a Thorax X ray to identified kind and location of foreign body, length of retention and decided management of patients. Results: We included 96 patients between October 2005 and March 2008, 49 (51%) were female and 47 (49%) male. 82 (85.4%) of patients were asymptomatic, and the others referred thoracic pain (8 patients), cough (1 patient) and hypersalivation (5 patients). There were 75 coins, 7 batteries, 2 nails, 1 magnet, 1 earring, etc. The frequency of foreign bodies ingested is shown in the table I. In 84 cases the foreign body were located in esophagus, 11 in stomach and 1 in duodenum (a nail). The length of retention of the foreign body were ranged from 4 hours to 6 days (mean, 16 hours). All objects were extracted by esophagogastroduodenoscopy, but previously all patients were evaluated by anesthesiology. One patient died. Discussion: There is an apparent predominance of certain types of foreign bodies in specific groups of patients. Coins and toys are a relatively common finding in children. Retention leads to perforation, which is only a matter of time. Therefore, all foreign bodies retained in the esophagus should be removed as soon as diagnosed.

<table>
<thead>
<tr>
<th>Type</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>coin</td>
<td>75</td>
<td>78%</td>
</tr>
<tr>
<td>battery</td>
<td>7</td>
<td>7.3%</td>
</tr>
<tr>
<td>nail</td>
<td>2</td>
<td>2.1%</td>
</tr>
<tr>
<td>cuquita</td>
<td>2</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

P0022

Title:
Identification of pet carnivore helicobacter in gastric mucosa of children and their own pets (dogs and cats).

Ides M Sakassegawa-Sperandio 1, Lucio T Marchese 1, Luciana S Takemura 1, Pedro L Camargo 1, Fabrício N Furtado 1, Daniel Akira 1
1) Universidade Estadual de Londrina , Londrina, Brazil

Summary:
OBJECTIVE - Helicobacter pylori is one of the most common causes of chronic gastritis in adults and children. Recently, another microorganism within the Helicobacter species has been described as causing gastritis: “H. heilmannii” - like organisms (HHLO). The prevalence of these bacte-
ria infection in human beings is usually low. However, its frequency is high in domestic cats and dogs and children have close contact to them. Despite circumstantial evidences suggest that HHLO can be transmitted by pets, this fact has not been confirmed. The aim of this study was to identify HHLO species and H. pylori in gastro mucosa of children and their own dogs and cats, verifying if there are same species of those bacteria in human beings and pets. METHOD – The study population comprised 30 symptomatic children referred for upper gastroduodenal endoscopy who owned and frequently manipulated at least one pet (dog or cat). Healthy dogs (10) and cats (2) owned by the participants were evaluated. Gastric mucosa samples of human beings and animals were analyzed by polymerase chain reaction (PCR) to identify Helicobacter genus (H. spp.), the species of HHLO (H. bizzozeronii or H. salomonis, H. heilmannii and H. felis) and H. pylori. RESULTS: Among the 30 human gastric biopsy specimens, 3 (10%) showed positive for H. spp., and the species was H. pylori. The HHLO prevalence in dogs and cats was 90% and 100% respectively, and H. pylori was not identified in the pets. CONCLUSIONS: In this series, no HHLO gastric human infection was detected in children who owned and manipulated dog or cat, even with high rates of infection by those bacteria in their own pets.

P0023


ILEANA GONZÁLEZ 1, JORGE LANDAETA 2, MARÍA G. NARVAEZ 2, MARÍA RODRÍGUEZ 2, MAGALY RODRÍGUEZ 1, ENRIQUE MORENO 1
1) HOSPITAL DE NIÑOS , CARACAS, VENEZUELA 2) HOSPITAL JOSE MARÍA VARGAS, CARACAS, VENEZUELA

Summary:

Objective: Small bowel diseases are difficult to diagnose in children. With double-balloon and single-balloon enteroscopy is possible to see the whole small bowel and perform therapeutic procedures. Literature reports the use of this procedure in adult population and scarce in children. We present here the first study in Venezuelan children using the double-balloon and single-balloon enteroscopy, to evaluate feasibility, safety, and clinical efficacy in diagnosis and treatment of small bowel disease in children. Patient and methods: 15 procedures in 15 patients, ranking 8 to 15 years. All patients undergoing double-balloon enteroscopy using a Fujinon enteroscope length 200 cm, and over tub 145 cm and or single-balloon enteroscopy using a Olympus enteroscope. Indications: Obscure gastrointestinal bleeding, chronic diarrhea and evaluation of polypoids syndrome. Results: 15 procedures. Largest duration was 60 minutes. Finding: angiodysplasia, Meckel diverticulum, vascular malformations, varicose veins, Celiac Enteropathy, allergic enteropathy, Polyps. We change the usual treatment in 15/15 (100%) and performed endoscopic procedure in 12/15 (80%). We do not report any complications. Conclusion: the double-balloon enteroscopy and single-balloon enteroscopy is a novel, useful, reliable and safe procedure for evaluation of small bowel in children which allow change therapeutic and made a specific endoscopic treatment at the same moment, with a high performance of the method. Key Words: double-balloon enteroscopy, single-balloon enteroscopy, Small bowel diseases, enteroscopy, children.

P0024

Title:

Experience with the RX System in Pediatric ERCP

J. Antonio Quiros 1, Kattie Mirro 1
1) California Pacific Medical Center, San Francisco, USA

Summary:

ERCP related complications are multifactorial in origin. The experience of the endoscopist, anatomy and pathologic factors associated with the procedure also influence the risk of procedure related complications. In order to minimize trauma and facilitate cannulation, new cannulation and guide-wire devices have been introduced into the market in recent years. The Rapid Exchange (RX) system (Microvasive. Boston, MA) was developed with a focus on cannulation and wire control. It offers the endoscopist and its assistant increased control of the guide wire and ease for device exchange reducing physical stress and reducing the need for extended contrast injections. This has shown in trials to reduce procedure times and ERCP-related complications. The impact of this technology in Pediatrics has never been evaluated in a comprehensive fashion. Hypothesis: Use of the RX system leads to improved cannulation rates and overall reduces the risks of procedure related complications in pediatric patients undergoing Endoscopic Retrograde Cholangio-pancreatography (ERCP). Aim: Review measurable outcomes in pediatric ERCP care provided by highly-trained GI specialist with ample experience in ERCP and who use the RX system exclusively. Methods: We reviewed the data on all cases undergoing ERCP in which the RX system was used for primary cannulation. Results: 45 ERCP procedures using the RX system were performed on 36 children. indications for procedure were recurrent pancreatitis (n=14), choledocholithiasis (n=10), post-operative biliary leak (n=2), biliary colic (n=2), cholestatic liver disease (n=8). Age range was 4 to 18 years of age, sex distribution 16 females and 20 males.
P0025
Title: Capsule Endoscopy for the Evaluation of Small Bowel Diseases in Children
Jae Sook Lee 1, Jae Sung Ko 1, Jeong Kee Seo 1
1) Division of gastroenterology, hepatology, and nutrition, Seoul National University Children’s Hospital, Seoul, Korea
Summary: BACKGROUND AND STUDY AIMS: The small bowel (SB) is anatomically difficult to examine, but it could be investigated by the push enteroscopy and the SB follow-through. Recently SB examination with capsule endoscopy (CE) is also available in children. The aim of our study is to determine the diagnostic value of CE in children with suspected SB diseases. PATIENTS AND METHODS: We retrospectively reviewed the records of all children who underwent CE at the Seoul National University Children’s Hospital between November 2004 and February 2008. Eighteen patients were investigated with CE. The indications for CE studies were overt gastrointestinal bleeding or anemia in 13 patients. The other 5 patients underwent CE for the evaluation of SB involvement with known intestinal polyposis. RESULTS: Thirteen of the total 18 patients had no difficulties in swallowing CE (median age 13.4 years). Five patients who could not swallow had the capsule placed endoscopically (median age 8.9 years). The causative lesions of the overt gastrointestinal bleeding or anemia were identified in 6 of 13 patients (46.2%): Crohn’s disease with SB involvement (4 cases), angiodysplasia (1 case), and multiple SB hemangioma (1 case). In six patients with negative CE studies, gastrointestinal bleeding subsided spontaneously and did not require further diagnostic work-up. Among 5 patients who had Peutz-Jeghers syndrome, familial adenomatous polyposis, and juvenile polyposis, two patients showed multiple SB polyps. But no SB polyps were noted in 3 patients. Capsule retention did not occur in our CE investigations. CONCLUSIONS: CE is a safe and valuable tool for the detection of SB Crohn’s disease, gastrointestinal bleeding focus, and presence of SB polyps in pediatric patients. Further studies are needed for CE to be a routine procedure for the SB lesions in children.
P0026
Title: Percutaneous Endoscopic Gastrostomy (PEG) in children with swallowing disorder: upper endoscopy and esophageal biopsy to evaluate peptic esophagitis pre and post procedure.
José Vicente Spolidoro 1, Matias Epifanio 1, Juliana Cristina Eloi 1, Daiane Miloli 1, Sidiane Ferreira 1
1) Hospital São Lucas da PUCRS, Porto Alegre, Brazil
Summary: Introduction: Children with swallowing disorder (SwDs) usually have insufficient oral food ingestion and they have high risk of pulmonary aspiration. They are usually patients (pts) with cerebral palsy. Feeding gastrostomy (GT) allows a safe home enteral nutrition. Gastresophageal reflux (GER) is very common in this children and Nissen fundoplication was usually performed when GT were indicated. There is scientific evidences that PEG can be performed safely when there is no pathologic GER. Objective: Evaluate esophagitis pre and post PEG using Upper Endoscopy (UpE) and esophageal biopsy (Ebx) in children with SwDs. Material and Methods: It was included children with SwDs with indication of GT between 1997 and 2007, that pull PEG was the choosed technique and UpE was performed post PEG to remove the PEG tube and place a skin level GT (botton). Previous to the PEG, clinical evaluation and pH study (when indicated) selected the pts with severe GER to do a fundoplication. Children without pathologic reflux and with pathologic GER with possibility of clinical treatment were selected to perform PEG. Esophagitis was evaluated macroscopically by UpE and microscopically by the distal Ebx during the 2 endoscopies. Results: 48 children were included, median age 44.9mo (1 a 192mo), 27 girls. UpE pre-PEG using Los Angeles classification showed 9 pts with peptic esophagitis: 1 with grade C; 6 with grade B; 2 with grade A. Other
Heterotopic gastric polyp in the duodenal bulb

Katherine Groh 1, Ashlyn Kidd 2, Katherine T Grimm 2, Babu S Bangaru 2
1) Albert Einstein College of Medicine, Bronx, USA 2) NYU School of Medicine, New York, USA

Objective: To describe the case of a large heterotopic gastric polyp in the duodenal bulb. A 16 year old female presented chronic abdominal pains, nausea and retrosternal burning that responded to lansaprazole. H. pylori Ig G antibody, abdominal and pelvic sonogram were negative. CBC, hepatic function panel, amylase, ESR and iron studies were normal. She was seen again 3 yrs later with recurrent symptoms without response to ranatidine and omeprazole. An upper endoscopy was done. Results: A large 2x0.8x0.3cm lobulated sessile polypoid mass was seen in the duodenal bulb. It appeard like a cluster of six poloidal lesions joined together. Biopsy revealed heterotopic gastric (oxyntic type) mucosa. Mild chronic peptic ulceration, and non-cirrhotic group.

Methods: After the first high digestive bleeding episode, 36 patients were evaluated and submitted to sclerotherapy (< 2 years old), elastic band ligation (> 2 years old) and when necessary to eradicate, associated to sclerotherapy. These patients were submitted to endoscopic procedure in regular intervals, according to the protocol of Hospital das Clinicas of UFMG. Results: 36 patients were evaluated, 21 female, with 6 year-old average age(25%-2.6 / 75%-10.9 years) at the first bleeding. The portal hypertension etiology was separated in three groups: Liver cirrhosis (19 patients), portal vein thrombosis (13 patients) and congenital liver fibrosis (4 patients). The treatment used was elastic band ligation in 33% of cases, sclerotherapy in 19.4%, and both methods in 47.2%. It was observed in the first endoscopy after first bleeding episode median caliber esophageal varices in 41.7% and large caliber ones in 30.6% of the cases. In seven (19.4) of 36 patients, it wasn't possible to achieve the eradication of esophageal varices. The necessary number of sessions to eradicate esophageal varices presented the average of 7 (25%-6 / 75%-9). In nine (31%) of 29 patients who eradicated varices, evaluated with the return of esophageal varices, and one of them rebleeded by esophageal varice 54 months after the eradication. After the eradication of esophageal varices, it was observed worsening of portal hypertensive gastropathy in four patients and appearance of gastric varices in seven patients. There were no significant statistic differences between cirrhotics and non cirrhotics groups, concerning the number of sessions to eradicate, varices and rebleeding tax return. Conclusion: The secondary endoscopic profilaxy in the analyzed group showed itself effective in controlling new high digestive bleeding episodes caused by esophageal varices, but it was found a high tax of varices return and patients that couldn't completely eradicate varices. The efficacy of the boarding endoscopic didn't show differences between the cirrhotic and non-cirrhotic group.

Summary:

1) Albert Einstein College of Medicine, Bronx, USA 2) NYU School of Medicine, New York, USA
may be found in up to 2% of patients. Usually perceived to be an incidental finding, one study suggested that heterotopic gastric mucosa may be protective against ulcers. Jejunal polyp may be a lead point for intussusception. In our patient, the polyp may have been associated with symptoms.

P0029

Title:
Case report: Endoscopic cholangio contribution for the therapeutic approach on choledocolitiasis

Laura J Melo 1, Juliana M R Santos 1, Paula V P Guerra 1, Mariza L V Roquete 1, Alexandre R Ferreira 1, Walton Albuquerque 1
1) Hospital das Clínicas - Universidade Federal de Minas Gerais, Belo Horizonte, Brasil

Summary:
Objective: Demonstrate the endoscopic cholangio approach on child choledocolitiasis Results: Three year old male, admitted in August 2007 with recurrent jaundice, intermittent acholic stools, abdominal pain and pruritus. First episode of jaundice in January, 2007, when the following tests were performed: AST: 305, ALT: 340, total bilirrubin: 4.7 (DB: 3.4), alkaline phosphatase: 3,216, gamma glutamyl transferase: 679, plama prothrombin activity: 90%. Ceruloplasmin, plasmatic copper, alpha 1 anti-trypsin, and CK levels were normal. A number of specific antibodies were tested: antinuclear antibody, smooth muscle antibody, liver/kidney microsomal antibody and anti-mitochondrial antibody were all negative. Abdominal ultrasound and cholangio magnetic resonance showed intra and extra biliary tract dilatation, and no evidence of lithiasis. Ursodeoxycholic acid and hydroxyzine were then prescribed. Echoendoscopic ultrasound was performed, showing bulging greater duodenal papila due to gallstone, which was treated by endoscopic cholangio. His jaundice improved progressively as well as the color of his stools, the pruritus and the blood tests: AST: 41, ALT: 20, alkaline phosphatase: 529, gamma glutamyl transferase: 14, total bilirrubin: 0.6 (DB: 0.1). Abdominal ultrasound showed small gallstone close to the duodenal papila and slight biliary and pancreatic duct dilatation. Submitted to cholecystectomy in October, 2007. Anatomopathologic findings were chronic inespecific cholecystitis. This child is asymptomatic since then, and three monthly abdominal ultrasounds show no evidence of gallstones. Conclusion: Endoscopic cholangio is a good alternative for the treatment of gallstones and, despite its low levels of complications, it is still infrequently used in children. If multiple gallstones were found, the use of cholecystectomy would become necessary.

P0030

Title:
PEDIATRIC CAPSULE ENDOSCOPY (CE)
Summary:
Introduction: The CE managed to overcome endoscopy limitations allowing a non-invasive view of the small bowel (SB) on an outpatient basis, becoming the mechanism of choice to study Obscure Digestive Bleeding (OGIB) and significantly aid in diagnosing Inflammatory Bowel Diseases (IBD), tumors, polyps, celiac disease complications, or presumed SB disorders. CE is a simple and easy-to-use technique in pediatric patients with the same benefits and results as in adults. Purpose: This study assessed the viability and advantages of CE in pediatric patients. Material and methods: 28 patients (17 male and 11 female, mean age: 9) underwent CE between April 2004 and January 2008. Twelve of them had OGIB, 9 Peutz-Jeghers Syndrome, 1 Familial Multiple Polyposis, 1 Adenomatous Polyposis Coll. Five were suspected to have IBD. OGIB patients had undergone recurrent endoscopies, x-rays, and gammagraphic scans. Four of them underwent laparatomies, that failed to determine the cause of bleeding. Given Imaging’s Pillcam was used in all patients, who had followed a liquid diet, and taken Golytely Solution before a 12-hour-fast. The capsule was introduced in 9 patients under sedation and endoscopic assistance. Five underwent the study on an in- and the remaining ones on an outpatient basis. Patients were allowed to drink liquids two hours after the study, and solid food 4 hours later. Images were recorded for 8 hours. Twenty four eliminated the capsule spontaneously within 4-72 hours. EC elimination occurred 14 days later in a patient with an ulcerated ileal stenosis. Results: The source of OGIB was found in 11/12 patients: 6 Nodular lymphoid hyperplasia, 2 jejunal vascular ectasia, 2 Bean Syndrome, 1 ileal ulcer, and 1 ileal varices. In 4 patients IBD was confirmed and post-operative relapse of Crohn’s Disease was ruled out in one. High-quality images were obtained in all cases. Size, number and location of polyps were recorded in patients with multiple polyposis. There were no complications or adverse events. Conclusions: This study confirms the viability and advantages of CE in children.

P0031
Title: Endoscopic treatment of severe caustic esophageal strictures in the pediatric population: a 15-years experience
Manoel Ernesto Pecanha Goncalves 1, Silvia Regina Cardoso 1, Ana Cristina Tannuri 1, Uenis Tannuri 1
1) Instituto da Criança do Hospital das Clinicas da Universidade Sao Paulo, Sao Paulo, Brazil

Summary:
Introduction: Esophageal strictures following caustic ingestion are a dramatic condition in the pediatric population, affecting millions of children worldwide. In severe cases, children who survive will undergo repeated endoscopic procedures for long periods of time. Aim: Analyze the results of endoscopic treatment in children with severe esophageal strictures after caustic ingestion. Patients and Methods: Between 01/1992 and 12/2007, 94 children with severe caustic esophageal strictures were treated at the Endoscopy Unit of Instituto da Criança (Hospital das Clinicas, Universidade de Sao Paulo), in Sao Paulo, Brazil. Patients were followed up until complete resolution of symptoms or referral for surgical treatment. They were divided into 2 groups: Group 1 (n = 47): endoscopic dilatations for < 2 years; Group 2 (n = 47): dilatations for > 2 years. All procedures were performed under general anesthesia, using Savary bougies. Results: Mean age was 4.45 year (range: 2 to 9 years) and there were 60 males (63.83%). In group 1, 27 patients (57.44%) had complete resolution of symptoms with a mean of 16 dilatations. Twelve patients were referred for surgery. Esophagectomy with colon interposition was successful in 11 (91.66%). One patient developed anastomotic stricture, treated endoscopically. Eight patients are still under treatment. There were 5 perforations in this group. In group 2, 23 children (48.94%) had complete resolution of the strictures with a mean of 35 dilatations. Seventeen patients underwent esophagectomy with colon interposition. Seven children are still under treatment. Two patients had perforations during endoscopic procedures. Three perforations were treated surgically and 4 had a conservative approach. All of them had good evolutions. No deaths were seen in this series. Conclusions: Endoscopic dilatations are effective and relatively safe in the treatment of caustic esophageal strictures in the pediatric population. Around 50% of patients are discharged without symptoms. The more recent the stricture, the higher is the risk of perforation. Whenever necessary, esophagectomy with colon interposition shows excellent results.

P0032
Danielle Reis Yamamoto 1, Mário C. Vieira 1, Giovana Stival da Silva 1, Jocemara Gurmini 1, Karin Knabben de Souza 1
1) Hospital Pequeno Príncipe, Curitiba, Brazil

Summary:
Objectives: To analyze the indications and findings of upper gastrointestinal endoscopies (UGE) performed at a Pediatric Endoscopy Unit, and to compare the endoscopic findings with the histologic features. Methods: The medical records of 4,597 patients referred for diagnostic UGE, be-
Between January 1995 and December 2005 at the Hospital Pequeno Príncipe-Curitiba, Brazil were retrospectively reviewed. The diagnostic value of UGE as a predictor of histologic abnormalities using the test values of sensitivity, specificity, accuracy, positive and negative predictive values (PPV and NPV), and positive and negative likelihood ratios (LR+ and LR-) was calculated. Results: There were 2,286 (49.7%) boys and 2,311 (50.3%) girls. The most common indications for UGE were abdominal pain (52.7%) and gastroesophageal reflux symptoms (23.1%). Endoscopic abnormalities were detected in 46.1% of the procedures, and the most common findings were gastritis (29.0%) and esophagitis (14.3%). Histologic evaluation revealed gastritis (31.8%), esophagitis (23.1%), duodenitis (1.8%), celiac disease (2.8%) and other abnormalities (2.1%). The endoscopic findings in the esophagus presented a sensitivity of 36.0% and specificity of 95.9%; a PPV of 80.7% and a NPV of 76.0%, with an accuracy of 76.7%. The LR+ was 9 and the LR- was 0.66. In the stomach, the endoscopic findings presented a sensitivity of 58.4% and specificity of 87.7%; a PPV of 64.1% and a NPV of 81.3%, with an accuracy of 76.3%. The LR+ was 3.8 and the LR- was 0.49. For celiac disease, the endoscopic findings presented a sensitivity of 24.6% and specificity of 94.4%; a PPV of 11.4% and a NPV of 97.7%, with an accuracy of 92.5%. The LR+ was 4.8 and the LR- was 0.79. For duodenitis, the endoscopic findings presented a sensitivity of 62.6% and a specificity of 94.9%; a PPV of 16.8% and a NPV of 99.3%, with an accuracy of 94.4%. The LR+ was 12.4 and the LR- was 0.39. Conclusion: UGE has become an important procedure as part of the diagnostic work-up in a selected group of children with gastrointestinal symptoms. Although an association between disease, symptoms, endoscopic and histologic findings was not assessed, this study demonstrated that there was a poor correlation between visual and microscopic features, suggesting that regardless of the appearance of the mucosa, routine biopsy during UGE in children should be encouraged.

P0033

Title:
Helicobacter pylori in Children Investigated for Recurrent Abdominal Pain

Giovana Stival da Silva 1, Mário C. Vieira 1, Danielle Reis Yamamoto 1, Jocemara Gurmini 1, Karin Knabben de Souza 1
1) Hospital Pequeno Príncipe, Curitiba, Brazil

Summary:
Objectives: The objectives of this study were to establish the prevalence of H. pylori in children referred for upper intestinal endoscopy for the investigation of recurrent abdominal pain (RAP), and to evaluate the endoscopic and histologic findings in patients with and without the presence of this pathogen. Methods: The medical records of 3,224 pediatric patients referred for upper gastrointestinal endoscopy and gastric mucosal biopsies for the investigation of RAP between January 1995 and December 2007 at the Hospital Pequeno Principe - Curitiba, Brazil were retrospectively reviewed. Clinical information was obtained prior to the endoscopic procedure and recorded on the Endoscopy Unit database. Positive urease test in biopsy specimens from the gastric antrum and/or finding the organisms from the specimens were the criteria for diagnosis of H. pylori infection. A correlation between the endoscopic appearance and histologic findings was performed. Results: There were 1,796 (55.7%) girls and 1,428 (44.3%) boys. Others indications of endoscopy included vomiting (15.0%), gastroesophageal reflux (6.0%), failure to thrive (1.9%), and chronic diarrhea (1.1%). The most frequent endoscopic finding was erythematous gastritis (75.0%). H. pylori infection was identified in 706 (21.9%) of 3,224 children studied. In this group, erythematous gastritis was the most frequent endoscopic abnormality (34.4%). This pathogen was found in 200 (79.7%) of 251 patients with nodular gastritis. Conclusion: We concluded that the prevalence of H. pylori infection in children with RAP submitted to upper gastrointestinal endoscopy was 21.9% and that the endoscopic observation of antral nodularity suggests the diagnosis of H. pylori infection with a sensitivity of 28.3%, specificity of 97.9%, positive predictive value of 79.6% and negative predictive value of 82.6%. Erythematous gastritis was associated with H. pylori in 26.3% patients with a sensitivity of 34.4%, specificity of 72.6%, positive predictive value of 26.5% and negative predictive value of 79.4%.

P0034

Title:
Prevalence of Juvenile Polyposis Syndrome in U.S. Children: A Retrospective Multi-Center Study

Seema Mehta 1, Mark Gilger 1, Kenneth Fairly 1, Nora Mattek 2, Yoram Elitsur 3
1) Baylor College of Medicine, Houston, USA 2) Oregon Health Sciences Center, Portland, USA 3) Marshall University, Huntington, USA

Summary:
BACKGROUND: Juvenile polyposis syndrome (JPS) is a rare genetic condition yet one of the most common polyposis syndromes diagnosed in children. Diagnostic criteria, malignancy risk assessment, and surveillance guidelines are inconsistent because pediatric studies have been limited. OBJECTIVE: To determine the prevalence, demographics and clinical characteristics of JPS in children undergoing colonoscopy. METHODS: We conducted a retrospective study using the PEDS-CORI (Pediatric Endoscopy Database System - Clinical Outcomes Research Initiative) database. For the purpose of this study, the definition of JPS was defined as >3 polyps/colonoscopy. Colonoscopy reports completed on children, ages 0-18 years, at 13 U.S. centers between January 2000 and December 2005 were screened for the diagnosis of “polyp”. These reports were then further screened for >3 polyps/colonoscopy, i.e. JPS. This data was utilized to assess the prevalence, demographics, and clinical characteristics of JPS. RESULTS: A total of 8361 colonoscopies completed on 7516 children were reviewed. 708 (8.4%) colonoscopies had polyps identified. Of these, 30 met diagnostic
criteria for JPS. The prevalence of JPS was calculated to be 0.4%. Of the patients meeting JPS criteria, the demographics were notable for an average age of 8.37 years (range 3-17 years), a median age of 7.67 years, a 2:1 female to male ratio, and 77% (23) Caucasians. The most common indication for performing a colonoscopy was hematochezia 12 (40%), followed by surveillance 4 (13%), family history of polyps 3 (10%), prior polyps 3 (10%) & other symptoms 8 (27%). A family history of polyps was found in 6/30 (20%). The average number of polyps per colonoscopy was 5.33. Location of the polyps were as follows: Sigmoid colon (26.2%), descending colon (17.7%), ascending colon (12.8%), transverse colon (10.98%), hepatic flexure (8.5%), cecum (5.5%), rectum (5.5%), and splenic flexure (4.9%), 8% unknown. CONCLUSION: JPS is rare in children undergoing colonoscopy, with an estimated prevalence of 0.4%. Children with JPS were more likely to be female. Hematochezia is the most common indication for colonoscopy. Polyps in children with JPS are most common in the rectum and sigmoid colon (32%) but can be seen throughout the colon. COMMENT: This is the first population-based estimate of the prevalence of JPS in children undergoing colonoscopy.

P0035
Title: Upper digestive endoscopy in pediatrics: patient series examined in our service
Mateus Andrade 1, Maria I M Fernandes 1, Regina Sawamura 1, Suzeidi B C Melo 1, Jose L P Modena 1, Marcelo M Torquato 1
1) HC FMARU USP, RIBEIRÃO PRETO, BRASIL

Summary: Abstract Objective: To present and discuss the indications and the results of upper digestive endoscopy (UDE) performed on children and adolescents. Methods: Among a total of 23812 UDE, 417 were performed on 213 pediatric patients, 117 boys and 96 girls ranging in age from 1 month to 16 years (mean: 6 years and 8 months), over a period of approximately 5 years. All endoscopies were performed under general anesthesia. Results: The indication of UDE was diagnostic for all patients and therapeutic procedures were performed in 24.4% of them. Among the exams carried out, 88.6% revealed endoscopic changes, with the more frequent findings being varices (163 exams, 26.5%), gastritis (109 exams, 17.7%), substenosis (85 exams, 13.8%), and hypertensive gastropathy (78 exams, 12.7%). Only 11.38% of the exams were normal. Regarding the procedures, dilatation and sclerosis were the most frequent, affecting 44.7% and 42.7% of the patients, respectively. Among the 213 patients submitted to endoscopy, 100 were referred by Infantile Gastroenterology (46.9%), 41 by Pediatrics (19.2%), 24 by Pediatric Surgery (11.2%), and the remaining ones by other specialties. Conclusion: The present study underscores the importance of UDE for the diagnosis of diseases of the upper digestive tract of children, since 88.6 % of the exams revealed changes and one quarter of the patients required therapeutic procedures.

P0036
Title: Endoscopic Findings in HIV-Infected Children from sub-Saharan Africa
M L Cooke 1, E Goddard 2, R Brown 2
1) Department of Paediatrics and Child Health, University of Stellenbosch, Cape Town, South Africa 2) School of Child and Adolescent Health, University of Cape Town, Red Cross Children’s Hospital, University of Cape Town, Cape Town, South Africa

Summary: Objective The causes of persistent gastro-intestinal symptoms in HIV-infected children from sub-Saharan Africa, remains poorly documented. The spectrum of upper gastro-intestinal tract abnormalities identified at endoscopy in HIV-infected children is reported. Methods A retrospective file review of all HIV-infected children who underwent diagnostic upper GI endoscopy at Red Cross Children’s Hospital, Cape Town, South Africa, from February 2003 through October 2005. The clinical, radiological and endoscopic findings were documented. Results 26 HIV-infected children underwent endoscopy; median age 1 year(range 0.17-10.9years). The majority had advanced HIV disease; 18 (69%) were WHO Stage 4, 6 (23%) Stage 3 and 2 (8%) Stage 2. Median CD4 10.7% (range 1-39.8%). Main presenting symptoms included persistent vomiting (18), dysphagia (4), GIT bleed (6), with additional symptoms of oral candida (9), recurrent chest infections(10) and chronic diarrhoea(3). Contrast imaging failed to identify the underlying aetiology of oesophageal ulcers, GOR, oesophagitis and duodenitis. Observational and histological findings at endoscopy showed poor correlation. Pathogens were identified in 10 children; cytomegalovirus infection in 7 (2 with cryptosporidium co-infection), Candida in 2, Helicobacter pylori in 1. Age and CD4 count was not associated with the pathogens identified or death. Endoscopy findings influenced clinical management in 21 (81%) cases. Conclusion Endoscopy identified a diverse spectrum of disease and provided clinically relevant information in the majority of HIV-infected children with persistent upper gastro-intestinal symptoms. We recommend the use of upper GI endoscopy in HIV-infected children with dysphagia unresponsive to empiric anti-fungal therapy, as well as those with upper GIT bleeds, GOR not responding to empiric therapy or to define the aetiology of abnormal imaging findings such as ulceration. Declaration: Attendance at WCPGHAN3 supported by Nestle
Treatment of Solitary Rectal Ulcer Syndrome (SRUS) with Stapled Transanal Rectal Resection (STARR)

Bimal P Agrawal 1, Frank R Sinatra 1, Adrian Ortega 1, Para Chandrasoma 1, Michelle Pietzak 1
1) University of Southern California Keck School of Medicine, Los Angeles, USA

Summary:
Objective: To assess the feasibility of STARR, originally indicated for patients with obstructive defecation syndrome, for SRUS in a pediatric patient.

Background: A 16 year-old Hispanic male presented with 2 weeks of tenesmus, hematochezia, mucorrhea, and a feeling of incomplete evacuation. He and his father, who experienced similar symptoms, had recently returned from Mexico. Physical exam showed a well-nourished and non-toxic teenager with mild, diffuse abdominal pain. Rectal exam revealed several grape-like, firm masses at the anal verge. He had a normal CBC, ESR, CRP, serum chemistries and CEA. Stool cultures and E. histolytica Ab were negative. Colonoscopy revealed more than 100 polypoid, confluent masses with ulceration on the anterior rectal wall from the anal verge to 17cm. Upper endoscopy was normal. Pathology revealed localized areas of submucosal and intramural mucus-containing cysts consistent with colitis cystica profunda, without evidence of malignancy. Dynamic video defecography and dynamic MRI studies demonstrated anorectal redundancy and absence of mesorectal-sacral fixation, resulting in perineal descent and recto-rectal intussusception. 5-ASA enemas and bulk laxatives over several months only marginally improved his symptoms. Methods: After IM block, a circular anal dilator was introduced and using an anoscope the rectum was visualized. Polyps were debulked using the Bovie to obtain a smooth rectal surface. Two rows of 180 degree purse-string sutures were placed 2 and 4cm above the dentate line. The PPH type 1 circular stapler was introduced through the dilator, and segments of the anterior and posterior rectal walls were excised and simultaneously anastomosed. Result: The patient had an excellent outcome, and was discharged from the hospital after one day. He has been symptom free for one year, without fecal urgency, incontinence or further rectal bleeding. Conclusion: SRUS is a rare cause of rectal bleeding in pediatrics. SRUS is due to repeated straining and rectal prolapse, causing localized ischemia, mucosal injury and colitis cystica profunda. Our case is unusual due to our patient's young age at presentation as well as the modality used to treat his condition. To our knowledge, this young patient is the only case reported to have undergone successful STARR for SRUS. In this case STARR was safe and minimally invasive, compared to the alternatives of laparoscopic or open intra-abdominal surgery for his condition.

P0038

Title:
Endoscopic drainage of symptomatic Pancreatic Pseudocysts in Children

Dr. Neelam Mohan 1, Dr. N.K. Bhat 1
1) Sir Ganga Ram Hospital, New Delhi, India

Summary:
Introduction: Symptomatic pancreatic pseudocysts (PPC) have traditionally been managed by surgical, percutaneous and more recently by endoscopic drainage. The endoscopic treatment can provide internal drainage such as endoscopic cystogastrostomy, endoscopic cystoduodenostomy or endoscopic transpapillary drainage. Although the role of endoscopic treatment is well defined in adult population, experience in children is limited. We review our experience with endoscopic drainage of pancreatic pseudocysts in children. Methods: A retrospective chart review was conducted and relevant data was obtained for all children with symptomatic pancreatic pseudocysts managed by endoscopic drainage at our institution in the period from 2001 – 2007. Results: The total number of patients who underwent endoscopic cystostomies were 9; 4 male and 5 females, with a median age of 9 years (range 3 - 15 years). Etiology of acute pancreatitis in these 9 patients was blunt abdominal trauma 7, infection (mumps) 1, and acute recurrent pancreatitis 1. The indication for drainage of PPC was pain in 3, persistent vomiting in 3 and both in 3 patients. The endoscopic drainage was performed on day 12 – 57 (median 30 days) after the inciting event. Of the 9 patients endoscopic cystogastrostomy was done in 7 and endoscopic cystodudenostomy was done in 2. No immediate major post procedure complications were observed. All of the 9 patients could tolerate oral feeding within 24-48 hours and could be discharged after a median of 3 days (range 2 – 20 days). All cysts regressed successfully within 6 weeks. No cyst recurrence was reported after a median follow up of 49 months (range 10-83 months) and all patients continue to be asymptomatic. Conclusion: Anatomically accessible symptomatic pancreatic pseudocysts in children can be treated successfully and safely by endoscopic drainage, allowing early reinstitution of enteral feeds and shorter hospital stay.

P0039

Title:
Pediatric Duodenal Mucosal Biopsies with Eosinophilic Infiltrates: A Clinicopathologic Study

Mohamad S Miqdady 1, L A Darrisaw 2, H Abrams 3, W J Klish 3, M Finegold 3, C Daigneau 4
1) Jordan University of Science & Technology, Irbid, Jordan 2) Georgia Bureau of Investigation, Decatur, Georgia, USA 3) Baylor College of Medicine, Houston, TX, USA 4) University of TX Health Science Center, Houston, TX, USA
Summary:
Objectives: To describe the clinicopathologic features of children with duodenal eosinophilic infiltrates (DEI). Methods: Children with DEI at Texas Children’s Hospital over 24 month’s period were identified. Clinical symptomatology was analyzed by a retrospective medical record review. A single pediatric pathologist re-evaluated all biopsies. Follow-up was performed by contacting the patients 12-36 months after the initial diagnosis. Results: Out of 1142 cases, 780 (68%) cases had eosinophilic infiltrates (EI) at some GI site. Out of these, 287 (37%) cases had DEI. Mean age of 10 years and 5 months. (F:M 1.2:1). Race: 197(79%) Caucasians, 37 (15%) Latin Americans, 9 (4%) African Americans and 6 (2%) Arabs. Peripheral eosinophilia was observed in 21%. Medical treatment included proton pump inhibitors (57.0%), H2-blockers (55.4%), steroids (26.5%), and elemental diet (9.6%). Clinical symptomatology results are summarized in the Table. Histopathology: 6 % with <10 eosinophilic counts /high power field (eos/hpf), 51.8 % with 10-20eos/hpf, and 42.2% with >20 eos/hpf. There were no significant differences in the number of eos/hpf between those with or without a specific symptom. At follow-up, while 40% were still on medications, the most frequent persistent complaint was abdominal pain (38.0%). Fourteen children (5.6%) subsequently developed IBD; their histopathological data did not differ from the rest. Conclusions: These results suggest, 1) Children with DEI present with variable symptoms and often have other sites of GI involvement, 2) Symptoms remain persistent in a significant number of patients despite therapy, 3) Some children with DEI will go on to develop IBD. Key words: eosinophils, duodenum, gastrointestinal, IBD, eosinophilia, and esophageal.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Abdominal pain (%)</th>
<th>Vomiting (%)</th>
<th>Weight loss (%)</th>
<th>Diarrhea (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial (N=249)</td>
<td>69.9</td>
<td>55.0</td>
<td>32.9</td>
<td>34.9</td>
</tr>
<tr>
<td>Follow-up (N=105)</td>
<td>38.0</td>
<td>15.2</td>
<td>7.6</td>
<td>10.5</td>
</tr>
</tbody>
</table>

P0040

Title:
Gastric atrophy and Helicobacter pylori infection in Tunisian children

Samir Boukthir 1, Sonia Mazigh Mrad 1, Olfa Bouyahya 1, Ilhem Fetni 1, Nicolas Kalach 2, Azza Sammoud 1
1) Service de Médecine Infantile C. Hôpital d’Enfants., Tunis, Tunisia 2) Clinique de Pédiatrie St Antoine. Hôpital St Vincent de Paul., Lille, France

Summary:
Little is known about the prevalence of gastric atrophy (GA) in childhood. Aim: To assess the prevalence of GA and describe histological characteristics, clinical and endoscopic features in Tunisian children, a high prevalence zone of Helicobacter pylori (H. pylori) infection. Patients and methods: 345 children, 151 males, mean age 8.6 ± 3.7 years, underwent an upper GI endoscopy (UGI endo) with gastric biopsies for recurrent abdominal pain (n=232, 67.24%), vomiting (n=72, 20%) associated or without upper gastrointestinal bleeding (n=59, 17.1%) and miscellaneous (n=345, 15.36%). Biopsies performed both in the gastric antrum (n=2) and corpus (n=2) were analyzed for histological assessment according to the updated Sydney classification and bacterial culture. A positive result was retained when histology and/or culture were positive, confirming the presence of H. pylori infection (H. pylori +ve). A negative result was retained when both tests were concomitantly negative (H. pylori -ve). Results: H. pylori +ve and chronic gastritis were respectively detected in 215/345 (62.3%) and 221/345 (64.04%) children, sex ratio M/F: 0.89 and 0.93 (ns); mean age (SD) 91 (45) and 109 (43) months (ns). 9.27 % (32/345) of total population, 14.47% (32/221) of chronic gastritis and 14.88% (32/215) of H. pylori +ve infection (H. pylori +ve). A negative result was retained when both tests were concomitantly negative (H. pylori -ve). Medical treatment included proton pump inhibitors (57.0%), H2-blockers (55.4%), steroids (26.5%), and elemental diet (9.6%). Clinical symptomatology results are summarized in the Table. Histopathology: 6 % with <10 eosinophilic counts /high power field (eos/hpf), 51.8 % with 10-20eos/hpf, and 42.2% with >20 eos/hpf. There were no significant differences in the number of eos/hpf between those with or without a specific symptom. At follow-up, while 40% were still on medications, the most frequent persistent complaint was abdominal pain (38.0%). Fourteen children (5.6%) subsequently developed IBD; their histopathological data did not differ from the rest. Conclusions: These results suggest, 1) Children with DEI present with variable symptoms and often have other sites of GI involvement, 2) Symptoms remain persistent in a significant number of patients despite therapy, 3) Some children with DEI will go on to develop IBD. Key words: eosinophils, duodenum, gastrointestinal, IBD, eosinophilia, and esophageal.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Abdominal pain (%)</th>
<th>Vomiting (%)</th>
<th>Weight loss (%)</th>
<th>Diarrhea (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial (N=249)</td>
<td>69.9</td>
<td>55.0</td>
<td>32.9</td>
<td>34.9</td>
</tr>
<tr>
<td>Follow-up (N=105)</td>
<td>38.0</td>
<td>15.2</td>
<td>7.6</td>
<td>10.5</td>
</tr>
</tbody>
</table>

P0041

Title:
RELATIONSHIP BETWEEN ENDOSCOPIC NODULAR GASTRITIS AND HELICOBACTER PYLORI

Sonia Mazigh Mrad 1, Lamia Gharsallah 1, Olfa Bouyahya 1, Feten Fedhila 1, Samir Boukthir 1, Azza Sammou 1
1) Children Hospital of Tunis, Tunis, Tunisia
Summary:
Objective: Relationship between endoscopic nodular gastritis and helicobacter pylori is not clear. The aim of this study is to assess this relationship. Methods: In a prospective study, a total of 49 children underwent upper gastrointestinal for abdominal chronic pain were included. The median age was eight years (range: 2.5 - 14 years). All the patients had three antral biopsies and two fundical. Three of them were put on the formol for histological examination and two were put in physiologic serum for culture and rapid urease test. The helicobacter pylori (Hp) infection was characterized by bacteria found with histological examination and/or when the culture strain was positive to Hp and/or urease test was positive. The Sydney classification was followed for the histological examination. Statistical analysis was made with using statistical software program SPSS for windows version11, using the shi 2 test and fisher test bilateral, the student t Test. Statistical significance was set at the 0.05 level. Results: - Hp infection was found in 35/49 (71%) patients. - 16 had nodular gastritis: 14 of them had Hp infection. - The specificity of nodular gastritis in Helicobacter pylori infection was of 87,5%. - Chronic gastritis was found in 51,4% (32/35) in children who were infected by Hp versus 28,75% (4/14) in non infected children: RR = 3,85 1,42 < RR < 10,46 (p< 0.005) - The gastritis was follicular in 54,3% (32/35)of the infected patients versus 14,3% (2/14) of the non infected child (P< 0.05) Conclusion: - The Hp infection prevalence is high in our study. - The nodular gastritis has a high specifically value in helicobacter pylori infection. - Chronic gastritis is associated statistically and specifically to helicobacter pylori. infection - Follicular gastritis is associated statistically to helicobacter pylori infection.

P0042
Title: Comparison of Endoscopic Band Ligation plus Sclerotherapy versus Sclerotherapy alone in Children with Extrahepatic Portal Venous Obstruction (EHPVO)
Shrish Bhatnagar 1, Ujjal Poddar 1, Surender K Yachha 1, Anshu Srivastava 1
1) Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India

Summary:
Objective: Information about the efficacy of endoscopic band ligation (EVL) followed by sclerotherapy (EST) in children is scanty. We have studied the efficacy of EVL followed by EST and EST alone in children with EHPVO and compared their outcome on follow up. Methods: From January 2000 to March 2007, 186 consecutive children (mean age: 6.3 ± 4.2 years, 82% boys) of EHPVO with variceal bleeding were included in this study. EVL (multiband ligator) followed by EST (Group I, n=110) or EST alone (Group II, n=76) was done at 3 weekly intervals until eradication. Surveillance endoscopy was done 6 to 12 monthly thereafter. EST alone was done in the first three years of the study and EVL followed by EST was used in the latter half of the study. In all cases, sessions required to eradicate, volume of sclerosant, complications and endoscopic outcome on follow up were recorded. Results: During the study period, eradication was achieved in 158 of 161 (98%) children (100% Group I vs. 95% Group II; p=NS) and 25 (16 from Group II) were lost to follow up. Group I required significantly fewer session (5.2±1.8 vs. 6.8±2.8, p<0.005), less sclerosant (13±8.2 ml vs. 30±20 ml, p<0.001) and had fewer complications (7% vs. 28 %, p<0.001) as compared to Group II. On follow up [33±17.6 months in Group I and 43±16.7 months in Group II], there was a significant increase in the prevalence of gastropathy (PHG) in both the groups (16% to 46%, p<0.001) as well as isolated gastric varices (3% to 11% in group I & 3.5% to 12% in group II, p<0.001 in both). However, the prevalence of gastroesophageal varices decreased (56% to 34%, p<0.002 in Group I and 43% to 23 %, p<0.001 in Group II). Recurrence of esophageal varices was significantly higher in group II (39% vs. 26%, p<0.01). Conclusion: EVL followed by EST is better than EST alone in children with EHPVO as it requires fewer sessions, has fewer complications and less recurrence. However, following eradication, evolution of gastric varices and PHG is similar in both the groups.

P0043
Title: Esophageal strictures: etiology and management in a tertiary referral center in São Paulo, Brazil.
Elisabete Kawakami 1, Silvio K Ogata 1, Rodrigo S Machado 1, Helena H Brito 1
1) UNIFESP, São Paulo, Brazil

Summary:
Objective: to evaluate retrospectively a series of patients with esophageal strictures in a hospital of São Paulo in an 8-years period, with the focus on etiology and clinical management. Methods: 52 patients (Mf=1.9:1, age range 1mo - 16yr 11mo, mean = 3.67yr +/- 3.5, median 2.17 yr) with esophageal stricture were evaluated. All patients had undergone at least one upper digestive endoscopy at Endoscopy suite of Hospital São Paulo. All patients were clinically evaluated to determine the severity of dysphagia with a standardized form, before the procedure. The esophageal dilation was performed with either metallic olives (Eder Puestow, Plummer Jackson) or silicon bougies (Savary-Gilliard) under deep sedation administered by an anesthesiologist. Three consecutive diameters were used in each dilation session, and procedures were scheduled until an esophageal caliber that did not prevent the passage of the endoscope, and the relief of the symptoms. Results. The most frequent etiology was a caustic accident (30/52, 58%), followed by post-surgical (10/52, 21%) and peptic stricture (8/52, 15%). Severe stricture, defined by either total stricture or punctiform stricture, occurred in 7/30 (%) patients with caustic sequel. These 7 patients were undergone surgical treatment at first. The most common caustic stricture, occurred in 7/30 (%) patients with caustic sequel. These 7 patients were undergone surgical treatment at first.
BACKGROUND: Colonoscopy may be unsuccessful in some children because of fixed or tight sigmoid loop or stenosis. In addition perforation is a concern in younger children. An alternative for younger children is to use a gastroscope. There have been a few published studies in adults on the success of gastroscope for incomplete colonoscopy, but there is no published data in children. Objective: The primary objective was to demonstrate the use of gastroscope for colonoscopy in children weighing ≤30 kg. We defined a successful colonoscopy as cecal intubation. Ileal intubation rate was also assessed as the secondary objective. Subjects: We retrospectively reviewed charts in which gastroscope was used in 25 cases, mean age 7 yrs, mean weight 22 kg. Pediatric colonoscope was used in 25 controls, mean age 6 yrs, mean weight 22 kg. Overall the indications were: rectal bleeding (17), abdominal pain (13), diarrhea (7), or combinations of the above and short stature, rectal strictures, polyps, and constipation. Meth- ods: On chart review, the most common scopes that the endoscopists used were: gastroscope (Pentax EG 2730LK) and pediatric colonoscope (Pen- tax EC 3430LK). The underlying table describes the differences between these two scopes. The gastroscope is 50% softer proximally and 30% softer distally than the pediatric colonoscope. RESULTS: The two groups were compared for cecal intubation rate, ileal intubation rate, complications, and ease of the procedure as judged by the endoscopists. There was 1 failed cecal intubation in each group. Ileal intubation was done in 22 patients with gastroscope and 17 patients with colonoscope. Endoscopic findings were similar in both groups: colitis (8), polyps (7), anal fissures (3), proctitis (1), and normal (31). Polypectomy was done with gastroscope (1) and colonoscope (6). Retroflex view within rectum was easier with gastroscope (as it made a 210 turn) than colonoscope. Both groups had no complications like perforation, undue bleeding or pain requiring hospitalization. On asking them about ease of the procedure, the endoscopists judged the procedure as easier to perform with gastroscope. CONCLUSION: The gastroscope is a safe and effective tool for performing colonoscopy in children ≤30 kg. There was higher ileal intubation rate in the gastroscope group. The ease of colonoscopy was assessed as superior using the gastroscope as it was more flexible. Larger prospective studies are needed to corroborate these findings.
P0046

**Title:**
CAPSULE ENDOSCOPY IN PEDIATRIC PATIENTS, OUR EXPERIENCE FROM UNIVERSITY CHILDREN’S HOSPITAL LJUBLJANA, SLOVENIA

Tina Kamhi, MD 1, Rok Orel, MD, PhD 1
1) University Children’s Hospital, Ljubljana, Slovenia

**Summary:**
Background: Capsule endoscopy (CE) is a non-invasive method for visualizing small bowel (SB) mucosa. At our center it is used as complementary method in addition to upper and lower gastrointestinal (GI) endoscopy, mostly in patients with suspected or newly diagnosed IBD (Crohn’s disease (CD) and indeterminate colitis (IC)) to evaluate the extent of disease in SB. It is also used in patients with unexplained GI bleeding and rarely for other conditions. Methods and Patients: In the 16-month period from October 2006 to March 2008 CE (PillCam SB and SB2, Given) was performed in 27 pediatric patients (18 boys, 9 girls) at our unit. All children underwent upper and lower GI endoscopy and also had SB follow-through prior to CE study to minimize the possibility of capsule retention due to intestinal stenosis or fistula. Results: Patient mean age was 12.8 years (min 3, max 18). The main referrals for CE study were CD (15 pts, 56%), IC (5 pts, 18%), suspected IBD (4 pts, 15%) and unexplained GI bleeding (3 pts, 11%). In most cases the patient swallowed the endocapsule by mouth; however in 3 cases (two 3 y/o pts and one 6 y/o pt) it was inserted by upper GI endoscopy into duodenum. In 17 of total 27 patients changes seen on CE were typical and/or consistent with suspected disease, diagnostic yield was 63%. In 2 patients initial diagnosis of suspected ulcerative colitis was changed to Crohn’s disease after CE showed typical changes in SB mucosa. Treatment was introduced or significantly changed in 11 (41%) patients due to severity and extent of changes in SB mucosa visualized during CE. The procedure was well tolerated in all patients; we had no report of capsule retention. Conclusions: In our center we use CE mostly as part of diagnostic work-up in IBD patients to evaluate extent and severity of the disease. It is performed safely and has good diagnostic yield, comparable to that reported in other diagnostic studies.

P0047

**Title:**
DESCRIPTIVE ANALYSIS OF UPPER AND LOWER GASTROINTESTINAL ENDOSCOPY IN A PEDIATRIC HOSPITAL OF COLOMBIA

Wilson Daza 1, Wilson Daza 2, Juan P Riveros 2
1) Head of Pediatric Nutrition & Gastroenterology Department, Clínica del Niño JB, Bogotá, Colombia 2) Pediatric Gastroenterology & Pediatric Department, Universidad El Bosque, Bogotá, Colombia

**Summary:**
Objective: To describe medical indications and endoscopic findings more frequently in a pediatrics population attending at Clínica del Niño JB between January 1998 and December 2007. Methods: We reviewed the reports of upper and lower gastrointestinal endoscopies performed between January 1998 and December 2007; including 1521 upper endoscopy (654 male and 867 female) and 219 lower endoscopy (110 male and 109 female). Registrations were evaluated according to gender, age group, type of anesthesia, clinical indication, findings and type of procedure. The information was processed in Statgraphics 5.1 and the data were expressed as percentages. Results: The age group with greater indication for upper endoscopies was adolescents (47.3%) followed by schools (25.2%). The majority of lower endoscopies were done under general anesthesia (97.26%). Of the total of 1521 upper endoscopies the majority were indicated by peptic, acid disease (29.34%), in second place was recurrent abdominal pain, followed by upper gastrointestinal bleeding. The lower endoscopies were performed in 81.21% by lower gastrointestinal bleeding, followed by suspicion of inflammatory bowel disease and rectal polyps. In 43.85% of the total of upper endoscopies the findings were gastritis and 25.77% were normal. For 42.92% of the lower endoscopies, the findings were rectal polyp and 32.88% were normal. In 11.91% of the upper endoscopies were therapeutics (Sclerotherapy of esophageal varices), and 44.75% of the colonoscopies were therapeutic for polypectomy. There were just two complications with the upper endoscopies, pulmonary edema and upper gastrointestinal

Pediatric Colonoscope (Pentax EC 3430LK)  Gastroscope (Pentax EG 2730LK)

<table>
<thead>
<tr>
<th>11.8 mm outer diameter</th>
<th>9.0 mm outer diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.8 mm channel diameter</td>
<td>2.8 mm channel diameter</td>
</tr>
<tr>
<td>170 cm working length</td>
<td>103 cm working length</td>
</tr>
<tr>
<td>Angulations 180/180 up/down, 160/160 right/left</td>
<td>Angulations 210/120 up/down, 120/120 right/left</td>
</tr>
</tbody>
</table>
bleeding but the lower procedures were not presented complications. Conclusion: This review revealed the major endoscopic findings in the population of our hospital and it could have an application to the local epidemiology. The digestive endoscopic procedures are more frequently indicated in toddlers, schools and adolescences. The pediatric gastrointestinal endoscopy are safe and useful as a diagnostic and therapeutic tool.

P0049

Title:
TREATMENT EVALUATION OF GASTROESOPHAGEAL REFLUX IN CHILDREN WITH “ENT SYMPTOMS”

Aco Kostovski 1
1) University Children’s Hospital, Skopje, Macedonia

Summary:
Gastroesophageal reflux disease (GERD) may induce apparently atypical symptoms with pharyngeal and laryngeal manifestation referred to as “ENT symptoms” due to involvement of ear, nose and throat. Treatment is controversial. The aim of the study was to see the presence of GER in children with ENT symptoms, with evaluation and comparison the values of some parameters of computed 24-hour pH monitoring (C24hpHM) of distal esophagus after treatment. This values were compared after treatment with omeprazol and with control group with CRD and GER, and with group with CRD without GER. Material and methods: In a prospective study 340 children (age 2 months to 14 years) were evaluated for the presence of GER. Out of them 160 were without GER (control group). CRD and GER had 145, and ENT symptoms (ENT group) 35 children. Diagnosis of GER was performed by C24phHM (Digitrapper Mark III, Synectics, Sweden). GER was positive if pH<4 was >5% of investigated time. Number of reflux episodes (NRE), number of reflux episodes >5 min (NRE>5min), longest reflux episode (LRE), esophageal clearance (EC), oscillatory index (OI) were of interest for the purpose of this study. Omeprazol was given 0.5-1mg/bw/24hour. Results: There was significant statistical difference for all parameters between CRD with GER and without GER except for EC (Kruskal-Wallis test p<0.05). In ENT group and CRD with GER group we found significantly higher values for NRE and OI, for others parameters there was no significant statistical difference. After treatment there was significant statistical difference for parameters: NRE, NRE>5min, LRE and percentage of time pH <4. Conclusions: In children with ENT symptoms as in CRD and GER group NRE is higher, but this reflux episodes are with short duration, esophageal clearance is not impaired. OI is also higher in these group, especially during asleep period. Treatment with omeprazol showed significant statistical improvement of findings.

P0050

Title:
Abnormalities in CD8 function in Food Allergy(FA)

Aderbal Sabra 1,   Joseph Bellanti 2,   Selma Sabra 1
1) UNIGRANRIO, Duque de Caxias, Brazil 2) Georgetown University, Washington D.C, USA

Summary:
Introduction: Most of proteins absorved from the small intestine are presented to the T and B lymphocytes and are mediated by MHC class II in the absence of dendritic cells. In this scenario with the absence of the co-stimulatory signal, signaling would be inhibitory and the activation of the T cell is downregulated. This would result in a “silencing” of the immunologic response to the ingested protein, i.e., immunologic tolerance, induced by CD8 suppressor lymphocytes. Methods: 54 patients with FA diagnosed by DBPCFC were studied. In these patients we studied in the perifheral blood, CD4 and CD8 lymphocytes, IgE and Th1 and Th2 cytokines. Results: All 54 patients had normal IgE and normal Th1 and Th2 cytokines. The only immunologic abnormalities founded was the ratio CD4/CD8 below 1 (0.75-0.9). Conclusion: Different subsets of DC in Payer Patches are mainly responsible for immunity or allergy acting as antigen presenting cell. On the other hand, several DC subsets CD* are found in the lamina propria and in the mucosal intra-epithelial cells that are potentially tolerogenic. Therefore intra-epithelial lymphocytes and lamina propria lymphocytes of CD8 subsets expressin might be crucial for the induction of tolerance intestinal antigen, such as foods. In the present study we have observed decreased concentration of CD8 distribution in the periferal bloed of all 54 patients with FA. The decrease in CD* expression seems to impair the mechnism of tolerance leading to the hypothesis of abnormalities of CD8 functions in patients with non-IgE FA.

P0051

Title:
Delayed Gastric Emptying(DGE),Gastroesophageal reflux(GER) and Dyspeptic Syndrome(DS):The pathogenic role of Food Allergy(FA)

Aderbal Sabra 1,   Selma Sabra 1
1) UNIGRANRIO, Duque de Caxias, Brazil
Summary:
Introduction: We have previously reported on the role of FA in infants with GER and adults with DS. In the present study, we evaluated the role of FA in children and adolescents with DGE and DS.

Methods: 22 children and adolescents age 3-17 years old with chief complaint of DS were entered into the study. FA was diagnosed by DBPCFC. DGE was diagnosed by measurement of median gastric emptying time (MGET) with Tc 99. DS was diagnosed by typical clinical picture and by upper GI endoscopy and biopsy.

Results: All 22 subjects showed abnormal variation in MGET ranging from 75-250 min. (X=100 min). After treatment (normal MGET=60 min). Following treatment with hypoallergenic diet all 22 subjects showed improvement in MGET ranging from 22-45 (X=35 min). Conclusion: FA in these subjects could be responsible for the elevated MGET with in turn leads to DS as a consequence of DGE. All patients with symptoms of DS, therefore, should be carefully examined in order to evaluate the pathogenetic role of FA and to determine whether DS is primary or secondary to FA and DGE. The results of this study suggest that children and adolescents with FA have DGE and DS.

P0052

Title: Periampullary giant polyps in polyposis patients.

barbara bizzarri 1, fabiola fornaroli 1
1) pediatric gastroenterology, parma, italy

Summary:
Peutz-Jeghers syndrome (PSJ) is a relatively rare but well-recognized condition. This disorder is characterized by multiple gastrointestinal hamartomatous polyps and melanocytic macules on the hands, feet, peri-oral skin and oral mucosa. People with PSJ have an increased risk for developing a variety of malignant tumours. The aim of the present study was to report two case of PSJ with giant duodenal hamartomatous polyps. First case: 9 years old boy presented melena and anaemization (hb=7 g/dl), with no family history of GE pathologies. He had mucocutaneous melanin pigmentation on the lips since the first years of life. The upper endoscopy showed a large intra-luminal polyp, in the second part of duodenum close to the papilla, leading to a duodenal sub-obstruction. CT scan of the abdomen showed a large polypoidal lesion without compromising the papilla or the common bile duct. The capsule endoscopy ruled out the presence of other small bowel polyps. An endoscopic piecemeal resection was performed and the polyp was completely removed. Second case: 12 months female presented melena and anaemization (hb=5 g/dl). Positive family history for Peutz Jeghers syndrome (mother, and grandfather). The upper endoscopy showed a voluminous intra-luminal polyp (length 6 cm) on the opposite side of the papilla that determine a duodenal sub-obstruction. The small bowel enema excluded the presence of other intestinal polyps. A first endoscopic piecemeal resection was performed and the polyp was partially removed. After 10 days an other endoscopy with polypectomy was performed. It wasn't possible to remove completely the polyp since the small diameter of the lumen. In both patients the histological exam of the polyps confirmed the diagnosis of hamartomatous polyps. An emocrome and an abdomen X ray were performed to exclude bleeding of perforation and antibiotic therapy was administrated in both patients. No one of the patients presented any complications during and after the procedure. To conclude it is important to strictly follow-up patients with polyposis because the possible complications of bleeding, intussusceptions, obstruction and giant polyps. Especially in paediatric age it is better to approach the patients with conservative endoscopic procedure to avoid complications such as short bowel syndrome, adhesion syndrome. Not always it is possible to avoid surgery because of the dimensions and the position of the polyps.

P0053

Title: Risk of Clostridium difficile infection in children with inflammatory bowel disease

Aleksandra Banaszkiewicz 2, Andrzej Radzikowski 2, Agnieszka Gawrońska 2, Dorota Wultańska 1, Piotr Obuch-Woszczatyński 1, Hanna Pituch 1
1) 1Department of Medical Microbiology, Medical University of Warsaw, Warsaw, Poland 2) 2Department of Paediatric Gastroenterology and Nutrition, Medical University of Warsaw, Warsaw, Poland

Summary:
Background: Clostridium difficile - associated disease (CDAD) has increased significantly in Europe. Risk factor for CDAD are antibiotics or neoplastic in history of patients, age>65 years, long-term hospitalization and gastrointestinal disorders. Inflammatory bowel disease (IBD) as ulcerative colitis (UC) and Crohn’s disease (CD) are important risk factors for development CDAD. Clostridium difficile infections have strong impact on patients with IBD. Aim: To determine the incidence of Clostridium difficile infection among paediatric outpatients with IBD. Methods: Stool samples were collected between 1st January and 30th November 2007 from paediatric outpatients with IBD and Clostridium difficile toxins TcdA/TcdB were investigated in. Alcohol shock was performed prior the specimens inoculation on selective medium. Minimal inhibition concentrations (MIC) of metronidazole and vancomycin were determined using the E-test method. Results: 243 samples were investigated. Occurrence of Clostridium difficile TcdA/TcdB was determined as 31,3%. From positive faecal samples 25 Clostridium difficile strains were isolated. All strains were fully susceptible to metronida-
zole and vancomycin. Conclusions: In many IBD paediatric patients CDAD is present more often than in other populations. Clostridium difficile infection leads to more severe IBD symptoms. Moreover, many symptoms of Clostridium difficile infection are similar to the symptoms of IBD, thus it is important to diagnose CDAD for optimal treatment IBD patients and improving quality of life. Acknowledgments: This work was supported by Polish Ministry of Education and Science, Grant No. 2 P05D 074 27

P0054

Title:
High prevalence of Helicobacter pylori gastritis in Kenyan children undergoing upper endoscopy

Ahmed laving 1, Rose Kamenwa 1, Shaheen Said 1, Farzana Rana 1, Gunturu Revathi 1, Andrew Kimanga 2
1) Aga Khan University, Nairobi, Kenya 2) Jomo Kenyatta University, Nairobi, Kenya

Summary:
Background: Little is known about the prevalence and severity of Helicobacter pylori gastritis in Kenyan children. Objective: To determine the prevalence of Helicobacter pylori gastritis in children undergoing upper endoscopy at a private teaching hospital in Kenya. Methods: We did a retrospective analysis of all histological specimens of children who underwent oesophagogastroduodenoscopy (OGD) between January 2005 and December 2006. All children undergoing OGD have biopsies done routinely from the distal oesophagus, gastric corpus, gastric antrum and the second part of the duodenum. The specimens were analysed by standard Giemsa staining method and reported using the Updated Sydney System for H.Pylori infection and degree of chronic inflammation. Results: A total of 203 children ranging in age from 6 months to 14 years with a male to female ratio of 1.1:1.0 underwent OGD during the 2 year period. More than 90% of the children had dyspeptic symptoms, while other indications for OGD included chronic abdominal pain, dysphagia, gastrointestinal bleed and foreign body removal. Helicobacter pylori was present in 163 of 203 (80.3%) of the patients. Six percent of the patients had H pylori detected both in the gastric antrum and the corpus. More than three fourths of the patients had moderate or severe chronic inflammation (38% each) while 24% had mild chronic gastritis. The mean eosinophils count was 3.2 eosinophils/HPF and 1.8 eosinophils/HPF in the antrum and corpus respectively. There was a significant correlation between the degree of chronic inflammation and H pylori colonization. Conclusion: Helicobacter pylori is highly prevalent in Kenyan children undergoing endoscopy and is associated with moderate to severe chronic gastric inflammation.

P0055

Title:
A RANDOMIZED PLACEBO-CONTROLLED TRIPLE-BLINDED CLINICAL TRIAL ON THE EFFICACY AND SAFETY OF HYPO-OSMOLAR ORS SOLUTION WITH GLUTAMINE SUPPLEMENTATION IN THE TREATMENT OF ACUTE DIARRHEA AMONG 30 INFANTS AND CHILDREN AGED 6 – 36 MONTHS OLD: A PILOT STUDY

Aileen A. Elorde 1, Ameleen Bangayan 1
1) Davao Doctors Hospital, Davao City, Philippines

Summary:
Objective: To determine the efficacy and safety of hypoosmolar ORS solution with glutamine supplementation for the treatment of acute diarrhea in infants and children aged 6-36 months. Methods: In this randomized, triple-blinded, controlled clinical trial, 6- to 36- month- old children received either 0.3g/kg/day of glutamine (n = 15) or placebo (n = 15) for 5 days or less if diarrhea stopped earlier. Input and output were recorded and all cases were followed-up up to day 5 from start of treatment. Outcomes measured were the effect of the solutions on the duration and frequency of diarrhea. Results: Baseline clinical characteristics were comparable in both groups. Mean duration of diarrhea in the glutamine treated group did not show statistically significant difference with the placebo group, although there was a trend of shorter duration of diarrhea in the glutamine group compared to control group, (22hours vs 36 hours, respectively). There was no statistically significant difference in the number of diarrheic stools between those given ORS + glutamine or ORS alone for any day (p-value = 0.163). No adverse reactions were associated to the use of glutamine. Conclusion: Duration and frequency of diarrhea between the hypoosmolar ORS + glutamine and hypoosmolar ORS alone groups were not statistically different. No adverse events were associated to glutamine. Key Words: Hypoosmolar ORS, glutamine supplementation, acute diarrhea

P0056

Title:
Paediatric Indeterminate colitis- A single center experience.

Ajmal Kader 1, Fevronia Kiparissi 1, Mamoun Elawad 1
1) Great Ormond Street Hospital for Children, London, United Kingdom
Background Indeterminate colitis (IC) is a subgroup of inflammatory bowel disease (IBD) that cannot be characterized as ulcerative colitis or Crohn’s disease. The diagnosis mainly relies on exclusionary criteria. Understanding its natural history in children will enable us to improve outcome in this group. There is very limited published data on paediatric IC. Objective: Describe a single center experience of paediatric IC - presentation, disease distribution, progression and outcome. Method: Retrospectively reviewed data of children with IC between 2002 & 2007. Patient demographics were recorded. Disease distribution was identified on the basis of endoscopic, histological and radiological findings. Investigations, treatment details and final outcome were analyzed. Results: Out of 301 children with IBD, 27(8.9%) had IC and 21(7.8%) males. Median age at diagnosis was 7.7 years (range 1.9-15yrs). Median duration of symptoms prior to diagnosis was 0.9 years. 7 children had family history of IBD. No cases were subsequently reclassified as UC or CD. At diagnosis, 15(56%) had pancolitis of which 6 had a patchy distribution. 10(37%) had left-colitis and 2 right colitis. Repeat colonoscopies were performed in 18 cases, the distribution changed in four left colitis to pancolitis. 14/18 (77%) did not have change in disease distribution. Prednisolone was the most commonly used treatment in 22(81%); all were steroid responsive in the onset, 5(23%) cases required frequent or long courses. Azathioprine was used in 20 (74%) cases. 5-ASA used in 19 and in 3 it was the sole agent. 7(25%) were treated with other immunomodulators because of failure to respond to Azathioprine or prolonged steroid use. Infliximab was used in 4 for similar reasons. Panproctocolectomy was required only in 1 boy. Coexistent food allergy was identified in 10(37%) children, 7 had increased eosinophil density in addition to active colonic inflammation and 5 were RAST positive. In this group along with standard treatment, diet restriction and/or anti-allergy agents were tried, with clinical improvement in 7 cases. Conclusions: In our study majority of the IC didn’t change disease distribution with time. Most children responded to standard treatment with steroids and Azathioprine. Coexisting eosinophilic infiltration may suggest allergic etiology modifying clinical presentation and response to treatment. Larger longitudinal studies are needed to understand its natural history.

P0057
Title: Human intestinal mucosal response to enteropathogenic Escherichia coli infection using polarised in vitro organ culture
Stephanie Schuller 1,  Mark Lucas 1,  James B Kaper 2,  Alan D Phillips 1
1) Centre for Paediatric Gastroenterology, Royal Free Hospital, London, UK 2) Dept of Microbiology & Immunology, University of Maryland, USA

Summary: In vitro organ culture (IVOC) is the gold standard in vitro model of enteropathogenic E. coli (EPEC) infection of human intestinal mucosa. However, the optimal infection model requires apical epithelial exposure in a polarised system, without serosal or cut surface stimulation. Objective: To develop a polarised human intestinal IVOC (pIVOC) model that restricts bacterial access to the apical surface. Methods: Paediatric duodenal biopsies (taken with ethical approval and informed consent) were sandwiched between perspex disks with a 2mm diameter aperture. Tissue glue was applied on the upper disk to prevent bacterial leakage and the sandwiched biopsy was held in a Snapwell support. Bacterial leakage into the basal chamber was monitored and scanning EM was used to study bacterial adhesion. Mucosal IL-8 response to EPEC infection was examined by real time RT-PCR. Results: Tissue survived up to 8 hours of pIVOC with intact surface epithelium. Serosal bacterial leakage was negligible after apical EPEC infection (<0.01% of initial inoculum). EPEC colonisation was considerably enhanced in pIVOC compared to conventional IVOC and bacterial detachment (as seen in in vivo C. rodentium mouse infections) was identified. Real time PCR showed significantly increased IL-8 mRNA after apical EPEC infection (median fold increase = 2.9, p<0.001 versus matched non-infected controls, n = 9) whereas infection with an isogenic flagellin mutant (EPECΔfliC, kindly provided by JA Giron, University of Arizona, USA) did not enhance IL-8 mRNA expression (median fold increase = 1.84, p>0.05 versus non-infected control). Conclusion: We have established a human pIVOC model that affords the investigation of mucosal events under apically restricted infection, bringing the ex vivo model closer to the in vivo situation. (Supported by Peter Samuel Fund Grant and NIH grant AI21657-19 to JBK)

P0058
Title: PREVALENCE OF THYROID DISORDERS IN CHILDREN WITH CELIAC DISEASE
Kohn Isidoro Joaquin 1, Marchisone Silvia 2, Oropeza Gabriela 2, Vasquez Jose Maria 2, Zanotti Nelly 1, Ojeda Jose Maria 3
1) Hospital de Niños, CORDOBA, ARGENTINA 2) Hospital Infantil , CORDOBA, ARGENTINA 3) Hospital Privado, CORDOBA, ARGENTINA

Summary: Kohn IJ¹, Marchisone S², Oropeza G², Vasquez JM², Zanotti Nelly¹, Ojeda JM³. 1-Servicio de Gastroenterologia, Hospital de Niños; 2-Servicio de Gastroenterologia Hospital Infantil; 3-Servicio de Gastroenterologia Pediatrica Hospital Privado. Córdoba, ARGENTINA. Objectives: The aim of this study was to establish the prevalence of thyroid disorders in pediatric patients (Pts) with celiac disease (CD). We carried out a multicenter retrospective study in 3 pediatric institutions in Cordoba, Argentina. Patients and methods: We reviewed the clinical histories of 812 patients with CD diagnosis; 254 of them had thyroid function (TF) studies. The TF was evaluated by measurement of T3, T4, free T4, TSH and Ac-anti-tiroperoxidasa and anti-thyroid peroxidase antibodies. Results: Of 301 children with IBD, 27(8.9%) had IC and 21(7.8%) males. Median age at diagnosis was 7.7 years (range 1.9-15yrs). Median duration of symptoms prior to diagnosis was 0.9 years. 7 children had family history of IBD. No cases were subsequently reclassified as UC or CD. At diagnosis, 15(56%) had pancolitis of which 6 had a patchy distribution. 10(37%) had left-colitis and 2 right colitis. Repeat colonoscopies were performed in 18 cases, the distribution changed in four left colitis to pancolitis. 14/18 (77%) did not have change in disease distribution. Prednisolone was the most commonly used treatment in 22(81%); all were steroid responsive in the onset, 5(23%) cases required frequent or long courses. Azathioprine was used in 20 (74%) cases. 5-ASA used in 19 and in 3 it was the sole agent. 7(25%) were treated with other immunomodulators because of failure to respond to Azathioprine or prolonged steroid use. Infliximab was used in 4 for similar reasons. Panproctocolectomy was required only in 1 boy. Coexistent food allergy was identified in 10(37%) children, 7 had increased eosinophil density in addition to active colonic inflammation and 5 were RAST positive. In this group along with standard treatment, diet restriction and/or anti-allergy agents were tried, with clinical improvement in 7 cases. Conclusions: In our study majority of the IC didn’t change disease distribution with time. Most children responded to standard treatment with steroids and Azathioprine. Coexisting eosinophilic infiltration may suggest allergic etiology modifying clinical presentation and response to treatment. Larger longitudinal studies are needed to understand its natural history.
roglobulin. Results: Pts with thyroid function studies = 254 [F= 158 (62,2%)]; Abnormal thyroid function = 102 (40%) [F= 63 (61,8%)]; Hypothyroidism = 65 (25,6%) [F= 42 (64,6%)]; Hyperthyroidism = 5 (2%) [F= 3 (60%); Subclinical Hypothyroidism = 26 (10,2 %) [F= 15 (57,7%)]; Autoimmune thyroid disease with euthyroidism = 6 [F= 3 (50%)] They were 21 Pts with autoimmune thyroid disease (AI-TD) (8,3%) [F= 15 (71%)], 11 with hypothyroidism, 4 with hyperthyroidism and 6 with euthyroidism [F= 3 (50%)] CONCLUSIONS: The high prevalence of Pts with thyroid disorders in children and adolescents with CD make necessary the routine investigation of TF in this disease.

P0059

Title:
O5:H- EHEC causes colonic attaching effacing lesions in vivo

Arunon Sivananthan 1, Elizabeth Hartland 2, Catriona McLean 3, Stephanie Schuller 1, Jorge Giron 4, Alan D Phillips 1
1) Centre for Paediatric Gastroenterology, Royal Free Hospital, London, UK 2) University of Melbourne, Melbourne, Australia 3) The Alfred Hospital, Melbourne, Australia 4) University of Arizona, Tucson, USA

Summary:
To date no in vivo case of EHEC infection with A/E lesion formation has been described in man. Although, colonic pathology has been reported it is unclear if this is a result of direct bacterial infection or due to Shiga toxin-induced ischaemia; ex vivo human intestinal organ culture has shown reproducible EHEC A/E lesion formation on ileum, but limited interaction with colonic mucosa, indicating that ischaemia may predominate. Aims: A case of colonic bacterial adhesion in a male with bloody diarrhoea and an O5:H- STEC positive stool culture has been reported (1). In this paper we report ultrastructural, immunofluorescence and molecular biological studies in order to determine the identity of the adhering bacteria, its mucosal interaction and its virulence properties. Results: Antigen retrieval and immunofluorescence on the colonic biopsy from the case using serogroup specific antiserum verified that the adhering bacteria were serogroup O5. Reprocessing histological tissue for transmission EM showed A/E lesions in association with adhering bacteria in the colon. PCR was used to probe for virulence genes in DNA prepared from cultures of the stool isolate. We confirmed that stx1, but not stx2, was present, and additionally identified tcp, espP, and non-LEE encoded effectors nleB, C, D, E and F. Conclusion: We have demonstrated colonic A/E lesion formation by an O5 EHEC in man. This suggests that colonic pathology may be induced in vivo by direct bacterial action, but does not exclude additional pathology induced by the effects of Stx release. More studies are required to determine if this is a general EHEC phenomenon or specific to this bacterial strain. (Supported by NIH grant AI 66012 to JAG) 1) McLean et al J Med Microbiol 2005; 54: 605-7.

P0060

Title:
Evaluation of glutamine, arginine and zinc serum concentrations with intestinal barrier function, inflammation and growth: a cross-sectional study in children from Northeast of Brazil.

Aldo AM Lima 1, Ilia FN Lima 1, Eunice B Carvalho 1, Noelia L Lima 1, Reinaldo B Oriá 1, Richard L Guerrant 2
1) Federal University of Ceará, Fortaleza, Brasil 2) University of Virginia, Charlottesville, USA

Summary:
Objective. To investigate the glutamine (Gln), arginine (Arg) and zinc serum concentrations with intestinal barrier function (IBF), inflammation and growth in children from an urban community. Methods. 95 children with below median height-for-age (HAZ) z-scores were assessed at enrollment for Gln and Arg serum concentration, intestinal lactulose-mannitol test (LM ratio, %L and %M), lactoferrin and anthropometric measurements. Results. Children were a median age of 40.7 months (range 6.8-109) and 48% (46/95) were male. A total of 62 and 66 children had their Gln/Arg and Zn serum concentrations measured at enrollment, respectively. Serum Arg was significant correlated with Gln serum concentration (p < 0.001). LM ratio was significant negative correlated with HAZ and weight-for-age (WAZ) (p ≤ 0.02) z-scores. Children with intestinal inflammation were significant associated with disruption on IBF (p=0.016) and decreased absorptive area as measured by %M excretion (p=0.03). Children with intestinal inflammation had also negative correlation of Gln or Arg serum concentration with LM ratio and %L (p ≤ 0.05). There was a significant linear correlation of Arg serum concentration with HAZ after adjusted for age and gender. A significant cubic correlation was also observed after adjusted for age and gender on Gln serum concentrations with z-scores on HAZ (p=0.005), WAZ (p=0.001) and weight-for-height (WHZ, p=0.006). Zinc serum concentration was not significant associated with IBF, lactoferrin or anthropometrics measurements in these children. Conclusions. Disruption on IBF was negative associated with HAZ and WAZ z-scores in children. Children with intestinal inflammation had a disruption in IBF and decreased absorptive area. Furthermore, these children had negative linear correlations of Gln and Arg serum concentrations with IBF, especially on the intestinal epithelium paracellular transport. Arg serum concentrations in these children were associated with HAZ and Gln serum concentration was significant correlated with z-scores on HAZ, WAZ and WHZ. Financial support: CNPq, FUNCAP, FIC and ICIDR, NIH.
Title: Evaluation of primers to detect the virulence genes aggR, aap and aaiC from enteroaggregative E. coli using real time PCR

Alexandre Havt 1, Ila FN Lima 1, Josiane S Quetz 1, James P Nataro 2, Richard L Guerrant 3, Aldo AM Lima 1
1) Federal University of Ceara, Fortaleza, Brazil 2) University of Maryland, Baltimore, USA 3) University of Virginia, Charlottesville, USA

Summary:
Objective: Enteroaggregative E. coli (EAEC) has emerged as an important pathogen causing diarrheal diseases. The major aim was to analyze the efficiency of the primers for aggR (global regulator of EAEC virulence determinants), aap (encodes the protein dispersin) and aaiC (encodes a secreted protein). Methods: A colony of E. coli O42 strain was isolated and diluted into 500uL of sterile ddH2O. This dilution was boiled for 10min. and centrifuged at 3.000rpm for 10min. The DNA at supernatant was used to test primer efficiencies. Five samples of a 10 factor DNA serial dilution were performed. For aggR (490bp) and aap (356bp) reactions, the first sample was undiluted (1:1) and for aaiC (215bp) we used a 1:10 dilution. This DNA was amplified using 0,2uM of primers and iQ SYBR Green Supermix into iQ5 Multicolor Real Time PCR System (Bio-Rad, Hercules, CA-USA). A 25uL reaction was set and the PCR protocol was as follows: 95 Celsius degrees (3min.); 95, 53 and 72 Celsius degrees (45sec. each, 40x); and 72 Celsius degrees (3min.) for aggR and aap genes. To amplify aaiC gene we used 45 cycles of 95 Celsius degrees and 57 Celsius degrees (20sec. each), and 72 Celsius degrees (1min.). At the end of each reaction we performed a melting curve analysis. Results: The standard curves built after each reaction showed the efficiencies of 74,3% 82,1% and 96,0% for aggR, aap and aaiC, respectively. The first sample (1:1) of each serial dilution for aggR and aap reactions did not amplify as the other four diluted samples. The last diluted sample (1:100,000) in the aaiC reaction did not amplify. All melting curves showed specific amplifications. Conclusions: The best efficiency was obtained with aaiC primer which is consistent with its small PCR product. The lower efficiencies obtained for aggR and aap primers were probably due to the size of these PCR products. All the primers were specific. In addition, undiluted samples after bacteria DNA extraction with boiling and centrifugation should not be used for real time PCR. KEY WORDS: Enteroaggregative E. coli, virulence genes, aaiC, aggR, aap, dispersin, real time PCR. Financial support: CNPq, FIC/NIH, FUNCAP.

Title: Vitamin A supplementation improves intestinal barrier function and reduces total parasitic and specific Giardia spp. infections in Brazilian children.

Aldo AM Lima 1, Noélia L Lima 1, Bruna LL Maciel 1, Michelle P Kyalsund 3, Relana P Fitzgerald 2, Richard L Guerrant 3
1) Federal University of Ceara, Fortaleza, Brazil 2) Columbia University, New York, USA 3) University of Virginia, Charlottesville, USA

Summary:
Objective: This study evaluates the effects of retinol on intestinal barrier function, inflammation, parasites, and growth in children living in an urban community in the Northeast of Brazil. Methods: The study was a double-blind, randomized placebo-controlled trial (http://clinicaltrials.gov; Register #NCT00133406) involving 79 Brazilian children, 39 given vitamin A 100-200 thousand IU each four months and 40 receiving placebo (C), and followed prospectively for over thirty six months. Results: The groups were similar with regard to age, sex, nutritional parameters (z-scores), serum retinol concentrations, proportion of lactoferrin positive stool samples, and intestinal barrier function. The percentage of urinary lactulose and mannitol excretion consistently decreased among the vitamin A group and reached significance after four months of follow-up (p<0.05). The lactulose:mannitol ratio did not change during the same time of follow-up (p>0.05). The proportion of lactoferrin positive samples evaluated at one month did not change between groups (p>0.05). There was no significant difference in the total and specific proportions of parasitic infections at enrollment between vitamin A versus placebo group (p > 0.05). However, vitamin A group had significantly fewer total parasitic infections ( p = 0.048) and specific Giardia lamblia infection (p = 0.028) at one month of the study protocol. The cumulative z-scores for weight-for-height (WHZ), height-for-age (HAZ), and weight-for-age (WAZ) did not change significantly with vitamin A intervention over 36 months of follow-up. Conclusions: Vitamin A improves intestinal epithelial paracellular permeability, but decreases absorptive area. The prevalence of parasitic infection, specially Giardia spp., was significantly lower in vitamin A treatment group. KEY WORDS: Retinol, intestinal barrier function, intestinal parasites, inflammation, diarrheal diseases, growth. Financial support: CNPq, FIC and ICIDR, NIH.

Title: HIV-1 transactivator factor (Tat) induces apoptosis through redox-dependent mechanisms in human enterocytes.

Franca Esposito 2, Manuela Penza 1, Vittoria Buccigrossi 1, Ileana Bracale 1, Carla Armellino 1, Alfredo Guarino 1
Summary:
Abnormalities of digestive function and related enteropathy are observed in HIV-infected children. We previously showed that Tat, produced by HIV, impairs enterocyte proliferation and glucose absorption. However, an increased oxidative stress is observed in AIDS patients and a relationship between Tat-induced damage and alteration of redox status has been previously demonstrated in non-intestinal epithelia. Objective: To test the hypothesis that: 1) Tat induces apoptosis in human enterocytes; 2) this effect is redox-dependent; 3) the antioxidant N-acetylcysteine (NAC) may prevent Tat pathogenic effects. Methods: Caco-2 cells and cultured human intestinal mucosa were used. Enterocyte damage and apoptosis were evaluated by immunohistochemical and cytofluorimetric analysis, respectively. Caspase-3 activation was evaluated by colorimetric assay as downstream step of apoptotic pathway. In order to evaluate the involvement of intrinsic apoptotic pathway, the release of cytochrome-c from mitochondria was investigated by cell fractionation and western blot analysis. Intracellular redox environment was evaluated measuring glutathione (GSH) levels and catalase activity by colorimetric assays. Results: Tat (0.1 and 0.5 nM) induced apoptosis in Caco-2 cells (35% vs 5% of control cells) and activation of caspase-3. Cytochrome-c accumulation in cytosolic fractions indicated the activation of intrinsic apoptotic pathway. Tat induced a modification of intracellular redox homeostasis by targeting the antioxidants defences, as indicated by a decrease of GSH levels (0.13±0.07 vs 0.22±0.09 Optical Density (OD)/mg, p<.05) and by a reduction of catalase activity (0.12±0.02 vs 0.70±0.05 nmol/min/ml, p<.05) compared to control cells. Pre-treatment with NAC (10 mM), a GSH precursor, inhibited all Tat-induced effects. Experiments performed in human intestinal mucosa confirmed these results in the ex-vivo model. Conclusions: Tat increases enterocyte apoptosis by decreasing intracellular ROS scavengers. In fact, all Tat-induced effects are prevented by the antioxidant NAC. These findings contribute to the knowledge of the enterocytotoxic effects by HIV and open new options for therapy of AIDS enteropathy.

P0064

Title:

Carmen A Sánchez-Ramírez 1, Alfredo Larrosa-Haro 2, Edgar M Vásquez-Garibay 2, Francisco Larios-Arceo 1, Rocío Macías-Rosales 1
1) Servicio de Gastroenterología y Nutrición, Cirugía Pediátrica, Unidad de Investigación Médica, UMAE Hospital de Pediatría, CMNO, IMSS., Guadalajara, México. 2) Instituto de Nutrición Humana, Universidad de Guadalajara., Guadalajara, México.

Summary:
Objective: To describe the circumstances of the accidental caustic ingestion (ACI), the socio-demographical traits of the families in which an ACI occurred. Methods: Design: Cross-sectional. Setting: An “Esophagus clinic” at a pediatric referral hospital, March through December 2006. Variables: Age and gender of patients; type of caustic; containers characteristics; place where the accident occurred; parent’s age; school grade; occupation; type of family; marital status; income. The socio-economic variables were compared with a control group obtained from a random sample (n= 641) of the same universe and study group. Statistics: Descriptive, χ², Fisher, OR and CI. Results: Mean age 38.4 months; 62.8% were males. ACI was more frequent in boys (OR: 1.7, CI 1.24-2.29, p<0.001). All cases of ACI were accidental. In 87.2% the accident occurred indoors. Alkaline products were ingested more frequently (85.1%). In 72.3% the container of the caustic substance had no labels and in 92.6% had no childproof security bottle cap. The mean age of the mothers was 30.9 years and of the fathers 34.2 years. The mothers’ school grade was elementary in 31.9%, and junior high school in 39.4%. The fathers’ school grade was elementary in 28% and 39.8% junior high school. Almost 60% of the mothers were housewives and 21% were employees. 35.5% of the fathers were employees, 15.1% were professionals and 14% were laborers. In 82% of the cases the parents were married; in 58.5% the families were nuclear; the rest were joint or extended. Comparison of the socio-demographical traits of the study with the control group the variables statistically associated to ACI were scholar professional degree (OR=1.72; CI: 0.98-3.01, p= 0.041); higher income (OR= 2.74; CI: 1.72-4.35, p=0.001); divorced parents (OR= 3.3; CI: 1.52-7.2, p= 0.002) and no-nuclear families (OR= 3.1, CI: 1.9-5.2, p<0.001). Conclusions: Being < 6 years of age and a boy was found to be a risk factor for ACI. Alkaline products were ingested more frequently, in most of the cases the products were sold without labels or childproof security tops. The predictors of ACI in a logistic regression model were age when the accident occurred (infants), type of family (no-nuclear where both parents work), high educational and income level and marital status (divorce). Our findings underline the association of ACI to particular socio-economic conditions in the population under study.

P0065

Title:
Duodenal and rectal lymphonodular hyperplasia associate to cow’s milk protein allergy in infants and toddlers with persistent diarrhea and emetic syndrome

Adriana G Cepeda-Vélez 1, Alfredo Larrosa-Haro 2, M Rosa Flores-Márquez. 1
1) Servicio de Gastroenterología y Nutrición, Unidad de Investigación Médica, UMAE Hospital de Pediatría CMNO IMSS, Guadalajara, México. 2) Insti-
Summary:
Objective. To search for the association of lymphonodular hyperplasia (LH) and cow’s milk allergy (CMA) in infants and toddlers with persistent diarrhea (PD) and emetic syndrome (ES). Methods. Design: Cross-sectional. Setting:一些 pediatric referral hospital. Sample: 25 infants and toddlers < 36 months admitted by PD or ES. Variables: LH (dependent) and CMA (independent); descriptive variables: clinical, anthropometrical and lab studies. Protocol: Besides the specific protocol for PD and ES, studies on admission included serum albumin, RBC count, 1-hour serum d-xylose, panendoscopy and colonoscopy with mucosal biopsies. A protein hydrolyzed formula and cow’s milk-free diet was followed 4 weeks and at that time the patient was challenged with a cow’s milk formula after a second blood sample for serum albumin, RBC count and d-xylose. Diagnosis of CMA was established with the presence of symptoms (diarrhea, vomiting, rash, GI bleeding and bronchi spasm) within the 72 hours following cow’s milk exposure. Results. Symptomatic improvement was observed in 23 (92%) of our patients after the protein hydrolyzed/cow’s milk free diet; however, only 15 cases (60%) had a positive challenge test supporting the diagnosis of CMA. Nodular duodenitis was observed in 10 and nodular proctitis in 14 cases at endoscopy. Mucosal biopsies identified 15 cases of duodenal and 18 of rectal LH. The association of cases with duodenal plus rectal LH with CMA In a 2x2 table showed an odds ratio of 4.0 of rectal plus duodenal LH being associated to CMA (CI95%= 1.0 to 17.1; p= 0.002). Conclusion. Differential diagnosis of PD and ES in infants and toddlers is a current challenge. CMA is one of the main associated etiologies to PD and ES; in our series it accounted for almost one-third of the cases studied. The association of LH and CMA may place the endoscopic evaluation of the upper and lower GI tract as an efficient tool to suspect the diagnosis and to go ahead with the prescription of a cow’s milk diet with further challenge to confirm the diagnosis.

P0066

Title:
Frequency of enteropathogens and reducing substances in the stools of infants and children with acute diarrhea

Alfredo Larrosa-Haro Haro 1, Liliana Mendoza-Heredia 1, M Carmen Cortéz-López 2, Rocio Macías-Rosas 1, Sergio Aguilar-Benavides 1
1) Unidad Médica de Alta Especialidad Hospital de Pediatría, Centro Médico Nacional de Occidente, Instituto Mexicano del Seguro Social., Guadalajara, México 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, México

Summary:
Objective. To identify the frequency of isolation of enteropathogens in the stools of infants and children with acute diarrhea. Methods. Design: Cross-sectional. Setting: Mid-class infant and children at Guadalajara City, 2006 through 2007. Sample: n= 5633 infants or children < 6 years old with acute diarrhea. Protocol: A stool simple was evaluated in the first 72hs of an acute bout of diarrhea. Search for trophozoites, cysts, ova and larvae, adenovirus, rotavirus, pH and reducing substances were performed immediately. Stool cultures for usual enteropathogenic bacteria were set and read after 72 hours. Statistics: Descriptive. Results. 5633 stool simples were analyzed. An enteropathogen was isolated or identified in 31.3% of them. Parasites: Cryptosporidium parvum (Kinyoun smear, n= 280, 5%), Giardia lamblia (n= 63%, 1.1%), Blastocystis hominis (n= 50, 0.9%) and Entamoeba histolytica (n= 17, 0.3%). Rotavirus (n= 185, 3.3%) and adenovirus (n= 25, 0.4%). Stool culture: Campylobacter jejuni (n= 859, n= 15.2%), Shigella sp (n= 153, 2.7%), Salmonella enterica (n= 118, 2.1%) y Aeromonas hydrophila (n= 14, 0.24%). In 850 cases (15.1%) >0.5% reducing substances were identified in the stools. Candida albicans was grown in 176 cultures (3.1%). Conclusions. Even tough this is not a prevalence study because of the sampling, due to the large number of cases evaluated it probably reflects the etiology of acute diarrhea in this area of Mexico. As shown in previous studies performed at Guadalajara, the dominant bacterium was Campylobacter jejuni and the most frequent parasite Cryptosporidium parvum. Rotavirus and adenovirus were identified mainly in winter months. The carbohydrate intolerance rate identified was in approximately 15% of the sample. It is interesting the low rate of Entamoeba histolytica identification and the absence of Yersinia enterocolitica and Vibri cholerae.

P0067

Title:
Increasing incidence of inflammatory bowel disease in children at North-Western Mexico: Epidemiological transition.

A Agenta Magallanes-Oropeza 1, Alfredo Larrosa-Haro 2, M Carmen Bojórquez-Ramos 1, Rocio Macías-Rosas 1, Osvardo García-Salazar 1, Alfredo Celis de la Rosa 3
1) Servicio de Gastroenterología y Nutrición, Unidad de Investigación Médica, UMAE Hospital de Pediatría CMNO IMSS., Guadalajara, México. 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, México. 3) Departamento de Salud Pública, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, México.

Summary:
Objective. To describe the cumulative incidence of inflammatory bowel disease at North-Western Mexico. Methods. Design: Descriptive longitudinal. Setting: A GI Department at a Social Security North-Western Mexico pediatric referral hospital. Variables: New cases of IBD identified by
year from 2000 through 2007. Diagnosis of IBD was based on current endoscopic and histopathologic criteria. Protocol: Cumulative incidence was calculated by the number of previous plus new cases per year divided by the number of children admitted to the GI Department the year evaluated. Results. Twenty patients were included. Ulcerative colitis was diagnosed in 17 (85%) and Crohn’s disease (CD) in 3 (15%). There was an increase of > 18 times of cases of IBD in the 8-year period evaluated; comparison of observed frequencies showed a significant difference (p<0.001). Cumulated incidence through the period evaluated is presented in graph: Conclusions. The population covered by the Hospital de Pediatria at Guadalajara comprises a high proportion of the pediatric population of North-Western Mexico. Although this is not a population study, it probably reflects an emergent pathology in the pediatric population of this region and this tendency behaves as the trend described in some developing of a north through south and west through east IBD epidemics. Pediatricians and Pediatric Gastroenterologist should be capacitated for diagnosing and treating IBD.

P0068

Title:
Large bowel histopathology in children with inflammatory bowel disease.

Fabiola Barba-Munguía 1, Alfredo Larrosa-Haro 2, María Rosa Flores Márquez 3, María Elena Rosales Gradilla 3
1) Servicio de Gastroenterología y Nutrición, UMAE Hospital de Pediatría CMNO IMSS., Guadalajara, México. 2) Departamento de Anatomía Patológica, Hospital de Especialidades, CMNO IMSS., Guadalajara, México. 3) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, México

Summary:
Objective. To evaluate the histopathology of initial colonic biopsies of children with inflammatory bowel disease (IBD). Methods. Design: Cross-sectional. Setting: A GI Department at a pediatric referral hospital. Variables: 40 histopathologic variables were clustered in two domains: chronicity and activity. Sample: All cases of children with diagnosis of IBD with suitable colonic biopsies from January 1998 through February 2007. Protocol: Demographic, clinical, endoscopic data were obtained from a direct interview, clinical charts and endoscopic databases. Stained (H&E, Schiff and Mason) slides of colonic tissue were reviewed prospectively with an ad hoc protocol; new 4mm sections were obtained from paraffin blocks when necessary. The endoscopic and histological data included in this study correspond to the initial evaluation of our patients. Results. Nineteen patients with IBD, 42.1% females, 26.1% preschoolers, 42.1% school age children and 31.6% adolescents, were included. Ulcerative colitis (UC) was diagnosed in 16 (8.2%) and Crohn’s disease (CD) in 3 (15.7%). Histological pancolitis was found in 64.7%; the remaining 35.3% had procto-sigmoiditis or left sided colitis. The histological data most frequently observed were: lamina propria cell infiltrate 82.4%, epithelial cell damage 58.8%; lymphocyte aggregates, ramified crypts and crypt abscesses 52.9%. 14 cases (82.4%) had changes related to chronic disease and 13% (7.5%) of inflammatory activity. Trombocitosis (p=0.043), increased CRP (p=0.023), perianal fissures (p=0.022), sigmoid stenoses (p=0.022), granulomas (p=0.026) and fibrosis (p=0.026) were more frequent in CD. Conclusions. Histological data related to disease chronicity and activity were found in a high proportion of cases with IBD. Lymphocytic Infiltrate and epithelial cell damage were the histological alterations found more frequently. In spite of the low frequency of CD, some significant clinical, endoscopic and histological differences were identified when compared with UC.

P0069

Title:
PATTERN OF CORROSIVE INGESTION IN ASEER CENTRAL HOSPITAL, SOUTHWEST, SAUDI ARABIA: A FIVE YEARS EXPERIENCE

Ali M Al-Binali 1, Mohammed Al-Shehri 1, Abdelmoneim Ismail 1, Ali S Shomrani 2, Suliman Al-Fifi 1
1) King Khalid University, abha, saudi Arabia 2) Aseer Central Hospital, abha, saudi Arabia

Summary:
Title: Pattern of corrosive ingestion in Aseer Central Hospital, Southwest, Saudi Arabia Objective: To study the pattern of corrosive ingestion and its complications at Aseer Central Hospital over 5 years period from 1990 to 1995. Admission and discharge logbook was reviewed and any patient admitted as corrosive ingestion was included in the study. A record of 72 patients was reviewed with 38 males and 34 females. The data included age, sex, time lapse till admission, action taken by parents, presenting symptoms, general management given to the child, barium study, endoscopy and outcome of the child post corrosive ingestion. Results: A total of 72 patients were admitted, 38 males (53.5%) and 34 females (46.5%) with mean age of 28+20 months. Different materials were ingested including Clorox (50%), Kerosene (16.7%), Dac (12.5%), Flash (11%) and other (9.7%). Endoscopy was done in 30 patients (31.7%) and 14 patients (47%) were abnormal. Barium swallow was performed in 11 patients, five of them had stricture which required frequent dilatation and one patient needed interposition surgery. No death was reported in this review. Conclusion: In this review, we found like others that corrosive injury is still a major pediatric emergency among young children and it carries major a risk of complications mainly stricture. Effort and coordination of pediatrician as well as authority is highly needed to educate public sector about the great risks of such substances and the best way in dealing with them especially after the episode of ingestion. Other important point is to unify an acceptable management approach for such patients based on the clinical evidence.
Title: LACTOSE INTOLERANCE: CLINICAL APPROACH VS BREATH TEST.

Francisco Alliende 1, Isabel Miquel 1, M. Eugenia Arancibia 1, Gloria Rios 1, Eric Saelzer 1
1) Clinica Alemana de Santiago, Santiago, Chile

Summary:
Introduction: Primary lactose intolerance is a common disorder. Frequent clinical manifestation are: abdominal pain, bloating, flatulence, diarrhea or nausea. The clinical history and physical examination could be helpful in its diagnosis. Breath test (measuring hydrogen and methane) after lactose ingestion, is accepted as the most appropriate diagnosis test. Objective: To evaluate the usefulness of the clinical data in the diagnosis of lactose intolerance in a population ≤18 years old. Methods: Patients in which breath test was realized in our Unit between March 2005 and February 2008 were included. A QuinTron SC Microlyzer (QT00130-M; Milwaukee, USA) was utilized. The results were interpreted according to international standards. It was considered as intolerance, a rise of at least 20 ppm for hydrogen and 12 ppm for methane. Breath test results were compared with symptoms suggestive of lactose intolerance such as diarrhea, bloating, flatulence, abdominal pain and nausea. Results: 190 consecutive breath test in the same number of patients, were included. Mean age: 8.4 years (1-18 years), female: 106 (55.8%). Lactose intolerance was diagnosed in 116 patients (61.0%). Statistical analysis of the incidence of the symptoms in both groups (tolerant and intolerant) are detailed in Table No1. There was no significant difference among tolerant and intolerant patients, compared according to symptoms. Conclusions: 1 .- Clinical data based on symptoms suggestive of lactose intolerance in our series, was unable to identify those with intolerance. 2 .- It is advisable to have an accurate diagnosis in suspected cases of lactose intolerance, because the symptoms are unspecific and because this is a permanent condition. 3 .- Breath test is a simple, costless reliable and well tolerated technique, permitting the correct lactose intolerance diagnosis confirmation. TABLE No1: Incidence and statistical analysis of symptoms in lactose tolerant and intolerant groups.

<table>
<thead>
<tr>
<th>symptom</th>
<th>Tolerants</th>
<th>Intolerants</th>
</tr>
</thead>
<tbody>
<tr>
<td>diarrhea</td>
<td>74 (38,9%)</td>
<td>116 (61,1%)</td>
</tr>
<tr>
<td>bloating</td>
<td>20 (27,0%)</td>
<td>34 (30,0%)</td>
</tr>
<tr>
<td>flatulence</td>
<td>50 (67,7%)</td>
<td>80 (69,0%)</td>
</tr>
<tr>
<td>pain</td>
<td>63 (85,1%)</td>
<td>99 (85,3%)</td>
</tr>
<tr>
<td>nausea</td>
<td>25 (33,8%)</td>
<td>38 (32,8%)</td>
</tr>
</tbody>
</table>

P0071

Title: Cholestatic syndrome of the infant: retrospective analysis

Soraia S Vasconcelos 1, Amalia M P Lustosa 1, Mikaele S Marques 1, Sheila J M S Costa 1, Lucia F R Brito 1
1) Albert Sabin Hospital, Fortaleza-CE, Brazil

Summary:
Objective: To identify the most frequent etiologies of the Cholestatic Syndrome of the infant, the age of the initial symptoms and the time of the diagnosis, besides evaluating the percentage of infectious etiology and no infectious of this syndrome. Methods: A retrospective research of the descriptive type accomplished in the gastroenterology service in the Albert Sabin Hospital (HIAS), a public children hospital of tertiary attention in Fortaleza, Ceara, Brazil. It was collected data of handbooks of thirty eight children with cholestatic Syndrome disease between 0 to 2 years of age. Results: The incidence of extrahepatic biliary atresia (EHBA) was of 65,8% (25 patients), while the one of hepatitis neonatal was of 10,6% (4 patients). Among the infectious causes we just observed the presence of cytomegalovirus (CMV), in 3 patients (7,9%), and, in only 1 case it was found association of AVBEH with CMV (this case was counted like EHBA). The most patients are from the country of Ceara state. The jaundice was observed before two weeks in only 57,9% (22) of the patients, and only 31,5% (12) arrived at the service before 60 days of life. Conclusion: These results demonstrate that the cholestatic syndrome is being late diagnosed, so that reduces the patients’ survival. We also observed that EHBA is quite frequent in that hospital, and we should get attention for the earlier diagnosis of this pathology. Key-words: Cholestasis, extrahepatic biliary atresia, jaundice.

P0072

Title: Mother’s perceptions during the treatment of constipation
P0073

Title: Treatment of constipation with polyethylene glycol 4000 without electrolytes in children

Amaury T Xavier 1, Patricia B Gomes 1, Marcia R F Torres 1, Marco A Duarte 1, Maria do Carmo B Melo 1
1) Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Summary: Introduction: Constipation is a common pediatric problem encountered by both primary and specialty medical providers. It is often necessary to use medication to help children achieve regular bowel movements. The laxatives are not palatable. Polyethylene glycol 4000 without electrolytes (PEG 4000) is an alternative option with a good taste. Objective: Assess the evolution of the treatment of chronic functional constipation using PEG 4000. Patients and Methods: Thirteen children with functional constipation were treated with PEG 4000 for three months, during the period of April 2007 to February 2008, at the Pediatric Gastroenterology Clinic, Federal University of Minas Gerais. The initial dose of treatment was 0.5g/Kg/day. Patients were examined on enrollment, after 15 days, and then, monthly, until the third month of therapy. At every follow-up visit, a questionnaire was applied to evaluate: 1) stool frequency and consistency according to The Bristol Stool Scale, 2) persistency or improvement of: abdominal pain, painful defecation and fecal incontinence and 3) the correct use of the drug. This study was approved by the University’s Research Ethics Committee. Results: All thirteen patients used correctly the medication. Seven (53.8%) were boys. The prevalence of constipation was higher between the ages 2-6 years (53.9%), and the mean age of the beginning of the complain was 21 months. At the first visit, 91 (7%) had stool frequency less than 3 times per week, with hard consistency in 75% of the children. Painful defecations occurred in 76.9 % and abdominal pain in 69.2%. Fecal incontinence was present in 80%. At the follow-up visits, all children showed an improvement of: painful defecation, stool frequency and consistency. After three months of follow-up and treatment, abdominal pain was still present in 22% of the patients and fecal incontinence in 37.5%. The average time for improvement of the following symptoms was: stool frequency (11.7 days); stool consistency (8.5 days); painful defecation (10.5 days); fecal incontinence (27.4 days), and abdominal pain (6.1 days). Conclusion: PEG appears to be superior to other osmotic agents in palatability and acceptance by children. In this study, daily administration of PEG 4000 at a mean dose of 0.5g/Kg/day was effective and palatable with no adverse effects noted. This laxative drug seems to be a good alternative for the treatment of chronic constipation in children with fast decrease of the symptoms.

P0074

Title: ILEOANAL POUCH IN PEDIATRICS

Ana Rocca 1, Christian Weyersberg 1, Monica Contreras 1, Marcela Bailez 1, Carlos Fraire 1, Jose Antonio Ruiz 1

Summary: Decrease of the symptoms. With no adverse effects noted. This laxative drug seems to be a good alternative for the treatment of chronic constipation in children with fast palatability and acceptance by children. In this study, daily administration of PEG 4000 at a mean dose of 0.5g/Kg/day was effective and palatable in 37.5%. The average time for improvement of the following symptoms was: stool frequency (11.7 days); stool consistency (8.5 days); painful defecation, abdominal pain, painful defecation and fecal incontinence and 3) the correct use of the drug. This study was approved by the University's Research Ethics Committee. Results: All thirteen patients used correctly the medication. Seven (53.8%) were boys. The prevalence of constipation was found in 66.66% of the cases. It was showed the familial and social repercussion in children life's with intense mobilization of aggressive feelings in the mothers, especially from children with fecal incontinence. Inside the family, the mother has normally a central position in the child care and this situation makes her vulnerable to the uncontrolled pulsional reactions, be aggressive and, sometimes, becoming sick. Furthermore, dietetic and behavior measures were little valorized by mothers interviewed. Conclusions: The lack of comprehension and coercive behavior from the mothers to their children's constipation problem influenced the negative results of the treatment. The rate of success of the treatment was found to be directly related to the mother's education. It is necessary to create a space where mothers could routinely expose their feelings and opinions which could contribute to a psychological elaboration of their feelings toward their child. On the other hand, working in group, mothers could exchange their experience, and discover new ways to deal with their children and also with the disease, bringing positive results to the treatment. Other points to be considered for future approach are: a) the children universe (their fantasies and anal erotisms, for example), considering the child as a subject of the entire process; b) the child indifference and apathy toward the treatment.
1) J P GARAHAN, BUENOS AIRES, ARGENTINA

Summary:
IP is the first choice in patients with ulcerative colitis (UC) undergoing surgery. Although morbidity is high, functional results are good enough in most of the patients. Aim: Analyze the outcome of children with UC treated with IP. Relate complications to functional results. Compare open (OP) to laparoscopic surgery (LS) M&M: Retrospective study including children with UC who underwent coloproctectomy in a single center between 1991 and 2007. Results: Thirty one patients (20%) were operated among 153 children with UC treated. Their mean age at diagnosis and surgery was 9.6 years ± 3.7 and 11.6 years ± 3.7 respectively. Surgical indications were steroid resistance in 20/31 (64.5%), steroid dependence in 8/31 (25.8%) and toxic megacolon in 3/31 (9.7%). There was extraintestinal disease in 7 (22.5%), 5 having sclerosing cholangitis. Open surgery was used in 19/31 (61%) and LS in 12/31 (39%). Mean hospital stay was 15±11.4 (OP 19.3±12.5; LS 8±3.4). In 19/31 (61%) there were complications before ostomy closure (OP 12/19; LS 7/12). Ileoanal stenosis was the most frequent one (9/19). In a mean follow up period of 3a ± 1.8, ostomy was taken down in 28/31. Ten of them (35.7%) had pouchitis (acute in 8/10 and chronic in 2/10; 1 required a new ileostomy). The diagnosis of Crohn disease was made during the follow up in 3p. Functional results were evaluated in 22 patients after a year of ileostomy takedown. Mean number of stools was 3.9 (r: 2 - 8) (OP 3.3; LS 5.3), soiling occurred in 7/22 (5 were occasional) (OP 5/16; LS 2/6), normal continence in 15/22 (68%) and 9/31 (29%) required different reoperations. We didn’t find correlation between complications before or after ostomy closure and continence (p=ns). LS reduced hospital stay (p=0.001) but neither complications nor continence were different (p=ns). Postoperative pain was not analyzed. Conclusion: Although morbidity of IP is high, functional results are good enough in most patients. We didn’t find correlation between complications before or after ostomy closure and continence. Except for hospital stay there were no statistically significant differences between OS and LS in terms of complications and continence although postoperative pain and patient discomfort were not analyzed.

P0075

Title:
Anorectal manometry in children with chronic constipation

Danielle Aleixo Oliveira 1, Ana Cláudia B N Gonçalves 1, Martony N Magalhães 1, Horácio Tamada 1, Clarice B Neufeld 1, Mauro S Toporovski 1
1) Faculdade de Ciências Médicas da Santa Casa de São Paulo, São Paulo, Brazil

Summary:
Background: Constipation is a common problem in pediatric medicine. Anorectal manometry is often used in the evaluation of children with long standing or refractory constipation. There is limited research done looking to correlate constipation severity in children and findings on anorectal manometry. Objectives: The aim of this study was to evaluate manometric variables in chronically and refractory constipated children concerning about: 1- Mean anal sphincter resting pressure, 2- Presence of Recto-Anal Inhibitory Reflex (RAIR). 3- Balloon rectal expulsion during defecation. 4- Presence of paradoxical puborectalis contraction during defecation. Results: Of the 31 patients enrolled in the study 24 were male (77.4%). Mean patient age was 8.9 ± 2.6 years old and ranged from 2.1 to 14.9 years. Mean anal sphincter resting pressure was 81.7 ± 38 mmHg. Normotonic anal sphincter pressure were detected in 15/31 (48.3%) and hypertonic anal sphincter pressure in 16/31 (51.6%). RAIR was positive in all patients. Intra-rectal balloon expulsion during stimulated defecation was positive in 12 among 31 patients (38.7%) with normotonic anal sphincter 4/12 (33.3%) and 8/12 (66.7%) with hypertonic anal sphincter. Paradoxical puborectalis contractions during stimulated defecation were detected in 6/12 (50.0%) among normotonic anal sphincter patients and 6/12 (50.0%) with hypertonic anal sphincter (p=1,000). Conclusions: 1- Hypertonic anal sphincter tonus was no predominant among patients with chronic and refractory constipation. 2- RAIR was detected in all patients. 3- The extrusion of intra-rectal balloon was presented in a little more than 1/3 of the patients but is not related with anal sphincter resting pressure. 4- Paradoxical puborectalis contractions were noted in half patients but were independent from anal sphincter resting pressure.

P0076

Title:
Prevalence of Celiac Disease in children with Down Syndrome

Clarice B Neufeld 1, Ana Cláudia B N Gonçalves 1, Martony N Magalhães 1, Fernanda M M Barreto 1, Maria de Fátima Araújo 1, Mauro S Toporovski 1
1) Faculdade de Ciências Médicas da Santa Casa de São Paulo, São Paulo, Brazil

Summary:
Background: The prevalence of celiac disease (CD) in children with Down syndrome (DS) is significantly higher than the general pediatric population. Most patients with DS and associated CD do not develop typical gastrointestinal symptoms of CD. There is little available data about prevalence of CD either in the general population or in DS patients in Brazil. Objective: To evaluate the seroprevalence and histological characteristics (features)
of celiac disease in children and adolescents with Down syndrome. Methods: a transversal cohort soroprevalence of 150 patients with DS was performed in the period of 2006-2007. The age range enrolled in this study was from 30 to 192 months old. Anti-endomisium IgA was measured by ELISA. Biopsy was performed in seropositive patients. Results: concerning ethnic group in this population 62/150 (41,3%) were caucasian, 81/150 (54,0%) were mulattoes, 6/150 (4,0%) were Afro-American and 1 Asian. One patient presented IgA deficiency and was excluded. 6/149 (4,0%) Anti-endomisium IgA were detected in patients with DS, of those 3/62 (4,8%) were caucasian and 3/81 (3,7%) mulattoes. 4/6 biopsies were diagnosed positively for CD (1 Marsh III, 3 Marsh I). 2/6 intestinal biopsies were considered normal. The prevalence of CD in DS was 2,68% in this group. No clinical relevant features in patients with CD were found. Conclusion: Serological markers of celiac disease seem to be frequent in Down syndrome nevertheless, diagnosis must be confirmed by histological studies which allow us to know the real prevalence of celiac disease in them. Caucasian patients have to be enrolled in soroprevalence screenings as well as the others. The prevalence of CD in Brazilian children and adolescents with DS seems to be the same than in other countries.

P0077

Title:
Viral and bacterial etiology and clinical findings of 232 cases of infantile acute diarrhea at Vitória - ES - Brazil

Ana Daniela Izoton de Sadovsky 1, Ketene W. Saick 1, Paula Nonato Segui 1, José Paulo Gagliardi Leite 2, Fausto Edmundu Lima Pereira 1, Isabel C A. Scaletsky 3, Liliana Cruz Spano 1

1) NDI - Federal University of Espírito Santo, Vitória, Brazil 2) Oswaldo Cruz Institute/Fiocruz, Rio de Janeiro, Brazil 3) UNIFESP - Federal University of São Paulo, São Paulo, Brazil

Summary:
Objectives: Evaluation of the clinical findings of 232 children with infectious acute diarrhea and its correlations with the detected infectious agents. Methods: A prospective study of 232 fecal samples of children up to 3 years, with acute diarrhea, at an emergency room of a pediatric hospital (February - 2003 to June – 2004). A questionnaire with data socioeconomics was filled in 219 cases after sign a term informed consent. The 232 cases were submitted to serology with polyclonal anti-seros (EPEC e EIEC) and hybridization tests (Hybr) to detect virulence genes of EPEC, ETEC, EIEC, EHEC, EAEC and DAEC. Rotavirus (RV) was studied by poliacrylamide gel electrophoresis (PAGE). Results: The age average was of 13,3 months. Of the 219 searched children, 127 were less than 12 months. The predominant sex was the masculine (59,6%). The absence of breastfeeding occurred in 14,6% of the children. Enteropathogens were detected in more than 60% of the samples; all the categories of DEC, Salmonella and Shigella were more prevalent (41,5%) than Rotavirus (34,9%). RV had been more prevalent in the children with acute diarrhea than pathogenic bacteria (typical EPEC, ETEC, EIEC, Salmonella and Shigella). Of the 81 patients with RV, vomit was the main symptom (96,3%), followed by fever (75,3%) and respiratory symptoms (55,6%). Watery faeces were related in 90% of the cases, associated with mucus (53,1%) and blood (9,5%). Children with RV received intravenous fluids in 50,6% of the cases in consequence of dehydration signals or vomits. Considering the detected categories of E.coli (typical EPEC, ETEC and EIEC), the symptoms were similar, except by low rate of dehydration (11%) and respiratory symptoms (37,5%) and high findings of dysentery (37,5%) in relation to other groups. Blood in the evacuations wasn’t found in the 2 cases of EIEC. In the cases where Shigella and Salmonella was isolated, dysentery occurred in 25% e 42,9%, respectively. Of the three cases where the Salmonella was isolated in the children with less than six months of life, all already had interrupted the breastfeeding. Conclusion: The dysentery occurred in children with bacterial etiology, but vomit, fever, respiratory symptoms as well as the evolution for dehydration were identified in both. The children with RV in their samples was most prevalent up to 1 year (58,1%) and the vaccine will be an instrument to reduce numerous deaths and unnecessary clinic visits and hospitalizations.

P0078

Title:
EVALUATION OF GERD IN CHILDHOOD PULMONARY DISEASES

Ana G Oliveira 1, Andréa A A Contini 1, Regina Sawamura 1, Laura R L Belém 1, Mateus Andrade 1, Maria I M Fernandes 1

1) Faculdade de Medicina de Ribeirão Preto,Universidade de São Paulo, Ribeirão Preto, Brasil

Summary:
TITLE: EVALUATION OF GERD IN CHILDHOOD PULMONARY DISEASES AUTHORS: Oliveira AG, Contini AA, Sawamura R, Belém LRL, Andrade M, Fernandes MIM INSTITUTION: Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo, Brazil INTRODUCTION: Over the last few years, gastroesophageal reflux disease (GERD) has been diagnosed at increasing frequency. Clinically, GERD can manifest in children with respiratory symptoms such as cough, repeated bronchospasm, and repeated pneumonia. The consequences of GERD for the airways have been extensively studied, although there still is great controversy about the role of the condition in the etiopathogenesis of pulmonary diseases. OBJECTIVES: To determine the presence of pathological gastroesophageal reflux in children with respiratory diseases by means of 24 hour pH-metry and to observe the behavior of some pH-metry parameters in respiratory diseases with GERD. MATERIALS AND METHODS: A retrospective study of 24 hour pH-metry was conducted from January 2006 to December 2007. The following diagnoses were included: obliterating bronchiolitis, wheezing baby syndrome/wheezing with no defined etiology, persistent asthma, and repeated pneumonias. The De Meester index (DMI) and the acidification time
fraction (AF) were defined as pathological gastroesophageal reflux. The number of refluxes, of long refluxes and of refluxes in dorsal decubitus was evaluated in the presence of respiratory diseases and GERD. RESULTS: Ninety-six 24 hour pH-metry exams were included, 30% of infants, 48% of preschoolers and 24% of schoolchildren. Mean time of study was 21.76±2.17 hours. Thirty-one exams were pathological according to the DM score and 27 according to AF. Sixty-eight percent of children with wheezing baby syndrome/wheezing of no defined etiology, 13% of those with asthma, 13% of those with obliterating bronchiolitis and 6% of those with repeated pneumonia had GERD. Among the patients with respiratory diseases and GERD there was a mean number of 76±20.8 acid refluxes, 4.2±4.3 long refluxes and 33.3±28.2 refluxes in dorsal decubitus. CONCLUSION: 1) One third of the children with respiratory diseases presented pathological gastroesophageal reflux; 2) The presence of GERD was higher among children with wheezing baby syndrome/wheezing of no defined etiology and lower among children with repeated pneumonia; 3) an important finding was the detection of a large number of refluxes occurring in dorsal decubitus.

P0079

Title: Comparison of ImmunoCAP system and the skin test in the evaluation of IgE-mediated cow’s milk allergic children

Leticia Aki Watanabe 1, Marcelo Higa 1, Cleonir de Moraes Lui 1, Ana Paula B Moschione Castro 1, Angela Bueno Ferraz Fomin 1, Cristina Miuki Abe Jacob 1
1) Departamento de Pediatria da faculdade de Medicina da Universidade de São Paulo, São Paulo, Brasil

Summary: Objective: The aim of this study was to identify the correlation between specific IgE to cow’s milk protein and fractions detected by ImmunoCAP and skin prick tests (SPT) in IgE-mediated cow’s milk allergic children. Methods: 28 children (60.7% male; median age 3.5 years; range 0.6 – 10.6 years) with IgE mediated cow’s milk allergic (history of anaphylaxis or positive double-blind, placebo-controlled milk challenge) were evaluated. Their sera were analyzed for specific IgE antibodies to milk and its fractions by using the Pharmacia ImmunoCAP (CAP) and they were tested by skin-prick test (SPT) to cow milk protein and its fractions (no more than 3 months between those two tests). Different levels of CAP and wheal sizes of SPT were chosen in order to do the correlations for whole milk protein: Group 1 - CAP > 0.35 kU/L compared to SPT wheal ≥ 3mm, Group 2 - CAP > 5 kU/L and SPT wheal > 6 mm (children ≤ 2 years old); CAP > 15 kU/L and SPT wheal > 8 mm (children > 2 years old). It was also compared CAP and SPT to whole milk and its fractions, respectively. The McNemar test was applied for statistic analysis. Results: In-group 1 - CAP and SPT to whole milk protein showed concordance and the results agreed to the clinical findings in 71.4%. In group 2 - CAP and SPT showed concordance too, but the results agree to the clinical findings in only 28.6%. Among the milk fractions, alpha-lactoalbumin and casein were discordant and SPT to these fractions agreed with diagnosis. Comparing CAP to whole milk and CAP to fractions, considering CAP > 0.35 kU/L there was concordance in all fractions but considering CAP > 5 kU/L beta-lactoglobulin was discordant. Conclusion: The comparison of results to whole milk protein showed that both methods were valid for the diagnosis of cow’s milk allergy in this present study. Regarding to fractions, results were heterogeneous and not conclusive, showing the necessity of further studies.

P0081

Title: Neonatal colitis: a presenting feature of inherited hypohidrotic ectodermal dysplasia

Anders Paerregaard 1, Lars Folmer Hansen 1, Vibeke Wewer 1
1) Dept of Paediatrics, Hvidovre Hospital, Copenhagen, Denmark

Summary: Summary: 3 neonates with Hypohidrotic ectodermal dysplasia and severe neonatal colitis are described. Background: Hypohidrotic ectodermal dysplasia (HED) is a rare inherited disorder that may be associated with hypothyroidism and lung disease. Little attention has been paid to its association with neonatal colitis. Patients: We describe 3 neonates with HED and severe neonatal colitis. They were all of ethnic Danish origin: 1 male (no siblings) and 2 females (sisters, no other siblings). Pregnancies and deliveries were uncomplicated. All infants experienced failure to thrive, bloody stools and endoscopic evidence of moderate-severe pancolitis. Histologic examination of biopsies disclosed acute and chronic inflammation without evidence of inflammatory bowel disease or allergic colitis. Stool examinations for pathogens were negative. All infants required parenteral nutrition and enteral nutrition with hydrolysed formulas and they all gradually recovered over 4-6 months with no later evidence of colonic inflammation at endoscopy. These infants have been followed-up for 3, 10 and 10 years. Incontinentia pigmenti has been diagnosed in all 3, hypothyroidism in 2 and severe lung disease in 1. Conclusion: Neonatal colitis may occur together with HED as part of an inherited disorder. In such cases the acronym ANOTHER may be used (Alopecia, Nail dystrophy, Ophthalnic complications, Thyroid dysfunction, Hypohydrosis, ephelides, Enteropathy, and Respiratory tract infections). The prognosis regarding intestinal inflammation seems to be favourable.

P0082
Title:
SERUM AND GLUCOCORTICOID-REGULATED KINASE 1 (SGK1) EXPRESSION IN COELIAC DISEASE

Beáta Szebeni 1, Gábor Veres 1, Antal Dezsõfi 1, Ádám Vannay 2, IR Korponay-Szabó 3, András Arató 1
1) 1st Department of Pediatrics, Semmelweis University, Budapest, Hungary 2) Szentágothai Knowledge Center, Semmelweis University, Budapest, Hungary 3) Department of Gastroenterology-Nephrology, Heim Pal Children’s Hospital, Budapest, Hungary

Summary:
Objective: Enterocyte apoptosis induced by activated intraepithelial lymphocytes is increased in celiac disease (CD). Serum and glucocorticoid-regulated kinase 1 (Sgk1) is a serine/threonine protein kinase, a central intracellular regulatory protein that is implicated in proliferation and apoptosis. It is known that the transforming growth factor-beta1 (TGFâ1) expression is increased in the lamina propria of coeliac children with villous atrophy and Sgk1 mRNA expression is strongly induced by TGFâ1 protein. The significance of Sgk1 in CD is elusive so far. The aim of this study was to characterise the expression of Sgk1 in duodenal biopsy samples taken from children with untreated CD, treated CD and controls. Methods: Duodenal biopsy specimens were collected from 9 children with treated CD [median age (range): 6 (3-14)], 16 children with untreated CD [median age (range): 9 (4-15)] and 10 controls [median age (range): 10 (4-15)]. The mRNA expression of Sgk1 was determined by SYBR Green real-time reverse transcription-polymerase chain reaction (RT-PCR). Results: We found increased Sgk1 mRNA expression in the duodenal mucosa of children with untreated CD compared to controls (p=0.03). Sgk1 mRNA expression was decreased in the duodenal mucosa of children with treated CD compared to controls (p=0.01). Conclusions: Our results of increased expression of Sgk1 in untreated CD may suggest the contribution of this kinase to the enterocyte survival against apoptosis in this disease.

P0083

Title:
Identical Twin Brothers with UC and Discordant Hepatobiliary Manifestation of IBD

Andrea Martinez 1, Richard Schreiber 1, Kevan Jacobson 1, David Israel 1
1) British Columbia Children's Hospital, Vancouver, BC, Canada

Summary:
Introduction: The etiology of IBD involves genetic factors. While concordance rates of Crohn’s or UC in identical twins are well described, little is known of the hepatobiliary manifestations of IBD in these cases. Herein we report identical twins having UC with discordance for immune liver disease. Methods: The hospital records of twin brothers with UC were reviewed. Clinical, biochemical and histological findings were recorded. A literature review was performed. Results: Twin A presented at age 4 yrs with bloody diarrhea and weight loss. Colonoscopy found distal disease and the histological findings were consistent with UC. At presentation the AST 160U/L; ALT 216U/L; GGT 240U/L; ALP 143U/L; IgG 21 g/L, ANA 1:160; and ASMA 1:40. Liver biopsy showed AIH: chronic interface hepatitis with normal bile ducts. He received induction therapy with Mesalamine and Prednisone. 6MP was introduced and complete remission has been maintained off steroids. Twin B presented at age 11 yrs with bloody diarrhea and normal liver biochemistries. Colonoscopy revealed pancolitis; the histological findings confirmed UC. Mesalamine induced remission. One year later he developed fatigue and RUQ pain. AST 46U/L, ALT 80U/L, GGT 110U/L, ALP 119U/L, ANA negative. Liver biopsy showed PSC: increased collagen deposition around bile ducts without hepatitis. Ursodiol led to normalization of the liver enzymes. Conclusions: To our knowledge this is the first report of discordant hepatobiliary disease in twins with UC, with one brother having AIH and the other having PSC. While genetics play an important role in disease pathogenesis, it’s likely that environmental modifiers are also involved.

P0084

Title:
Asp299Gly polymorphism of Toll-like receptor-4 gene in children with inflammatory bowel disease in Southern-Eastern Poland

Andrzej Wedrychowicz 1, Mirosław Bik-Multanowski 2, Kinga Kowalska-Duplaga 1, Urszula Jedynak-Wasowicz 3, Jacek J. Pietrzyk 2, Krzysztof Fyderek 1
1) Department of Pediatrics, Gastroenterology and Nutrition, Jagiellonian University, Krakow, Poland 2) Department of Medical Genetics, Jagiellonian University, Krakow, Poland 3) Department of Children’s Diseases, Jagiellonian University, Krakow, Poland

Summary:
Objective: The objective of our study was assessment of Asp299Gly polymorphism of Toll-like receptor (TLR) – 4 gene and genotype-phenotype correlation in children with inflammatory bowel disease (IBD) in Southern-Eastern Poland. Methods: Eighty three children (40 girls, 43 boys, mean age 11.4 yrs, range 3-18 yrs) with IBD and 30 healthy controls were included into the study. The Crohn's disease (CD) group consisted of 47 children and ulcerative colitis (UC) group consisted of 36 children. Asp299Gly polymorphism was assessed using PCR-RFLP method. Results: We found Asp299Gly polymorphism in 29.8% of CD children and 30.5% of UC children (mutant allele frequency: 26.6% and 27.7%, respectively) and none of controls (p<0.05). Assessing genotype-phenotype correlation we found Asp299Gly polymorphism in 42% of CD patients with fibrostenosing disease compared to 24% of CD patients with fistulizing disease and none of CD patients with inflammatory disease. 68% of the IBD patients were heterozygous and 32% was homozygous. Asp299Gly polymorphism was also associated with younger age of onset of disease and faster development and more severe clinical manifestation. UC children with Asp299Gly polymorphism also presented the severe course of disease and multiple exacerbations. Conclusions: Asp299Gly mutant frequency of TLR-4 gene is higher in IBD children population in Southern-Eastern Poland compared to Western Europe. The presence of Asp299Gly polymorphism is associated with early manifestation and severe course both of UC and CD.

P0085

Title:
Serum VEGF and TGF-1 beta concentrations in children with inflammatory bowel diseases during enteral nutrition therapy

Andrzej Wedrychowicz 1, Kinga Kowalska-Duplaga 1, Urszula Jedynak-Wasowicz 2, Stanislaw Pieczarkowski 1, Malgorzata Sladek 1, Krzysztof Fyderek 1
1) Department of Pediatrics, Gastroenterology and Nutrition, Jagiellonian University, Krakow, Poland 2) Department of Children’s Diseases, Jagiellonian University, Krakow, Poland

Summary:
Objective: Enteral nutrition is effective method of the therapy in achieving clinical remission in inflammatory bowel disease (IBD). However, the mechanism of action of this therapy is still poorly understood. The objective of our study was to assess the influence of the enteral nutrition therapy on the vascular endothelial growth factor (VEGF) and transforming growth factor 1beta (TGF-1 beta) concentrations in serum in children with inflammatory bowel disease (IBD). Methods: Thirty two children with IBD (18 boys, 14girls, mean age: 14.2 yrs, range: 6.2 – 18 yrs) and 22 healthy controls were included into the study. The Crohn’s disease group (CD) consisted of 20 patients and ulcerative colitis group (UC) consisted of 12 patients. VEGF and TGF-1 concentrations were assessed on admission, before starting and after 2 and 4 weeks of enteral nutrition therapy using ELISA immunoassays (R and D Systems, USA). Statistical analysis was performed with Statistica 7.0 software (StatSoft, USA) using Mann-Whitney U test and Spearman’s correlation rank test. P<0.05 was considered statistically significant. Results: We found increased VEGF concentration in CD group (median=600 pg/ml, range 63-2060) decreasing during the treatment, compared to UC group (266.9 pg/ml, 94.7-478) and controls (172 pg/ml,31-730) (p<0.05). Assessing TGF-1 beta, we found its concentration increased before starting enteral nutrition in UC group (35.3 ng/ml, 14.8-53.6) compared to CD group (27.9 ng/ml, 4.3-67.9) and controls (26.5 ng/ml, 12.2-56.8) (p<0.05). TGF-1 beta increased in CD group (32.7 ng/ml, 7.2-52.3) after 2 weeks of enteral nutrition therapy, but in UC group was comparable to its concentration on admission. CD group faster than UC group achieved disease remission and the weight gain of CD children during enteral nutrition therapy was higher than UC children (6.8% vs 4%). Additionally TGF-1 beta concentration correlated with protein and calories daily intake in CD group (R=0.95; p<0.05). Conclusions: Different effectiveness of the enteral nutrition therapy in achieving remission in CD and UC may be a result of a modification of the growth factors production. Enteral nutrition therapy stimulated TGF-1 beta production in CD children, what possibly resulted in higher effectiveness of this method of treatment in this group of patients.

P0087

Title:
ALTERATIONS OF INTESTINAL BARRIER IN AUTISTIC PATIENTS AND IN THEIR FIRST DEGREE RELATIVES

Valeria Familiari 1, Gabriele Riegler 1, Roberto Milliterni 1, Antonio Pascotto 1, Maridela Cartenì 1, Laura de Magistris 1
1) Second University of Naples, Napoli, Italy

Summary:
We already demonstrated that IP is altered in a consistent % of autistic patients and their first-degree relatives. AIM of the present progress of research was to increase the number of investigated subjects and to correlate IP values to gastrointestinal (GIs) and behavioural symptoms (ADI).

MATERIALS AND METHODS: 90 consecutive children with autism (mean age±SD=7.4±5.1; F=14, M=76) diagnosed according to the DSM-IV criteria, most of them naïve and without any dietary restrictions; 146 of their first degree relatives (mean age±SD=40.2±8.7; F=72, M=74); 160 normal adult subjects (mean age±SD=31.8±12.3; F=98, M=62) and 20 normal children (mean age±SD=10.1±3.9; F=11, M=9) were recruited. The IP was evaluated by means of lactulose and mannitol test (LA/MA). Faecal calprotectin was performed to evaluate intestinal inflammation. Serum anti-trans-glutaminase (tTG) and HLA-DQ2/8 were determined to rule out celiac disease in all subjects. GIs were evaluated as: constipation(C), diarrhoea (D), alternating (A); and HLA-DQ2/8 were determined to rule out celiac disease in all subjects. GIs were evaluated as: constipation(C), diarrhoea (D), alternating (A); and HLA-DQ2/8 were determined to rule out celiac disease in all subjects. GIs were evaluated as: constipation(C), diarrhoea (D), alternating (A); and HLA-DQ2/8 were determined to rule out celiac disease in all subjects. GIs were evaluated as: constipation(C), diarrhoea (D), alternating (A); and HLA-DQ2/8 were determined to rule out celiac disease in all subjects.
Background & Aims: Several probiotic compounds have shown promise in the therapy of ulcerative colitis (UC). However, a strong sustained benefit remains to be seen. Uncontrolled pilot studies suggest that a probiotic preparation (VSL#3) maintains remission in mild to moderate UC and reduces active inflammation in adult patients. Aims of our prospective, one-year, placebo-controlled, double-blind study were to assess the efficacy of VSL#3 on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC. Methods: Twenty-nine consecutive patients (mean age: 9.8 year; range: 1.7-16.1 year; F/M: 13/16) with newly diagnosed UC were randomized on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC. Aims of our prospective, one-year, placebo-controlled, double-blind study were to assess the efficacy of VSL#3 on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC. Methods: Twenty-nine consecutive patients (mean age: 9.8 year; range: 1.7-16.1 year; F/M: 13/16) with newly diagnosed UC were randomized on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC. Aims of our prospective, one-year, placebo-controlled, double-blind study were to assess the efficacy of VSL#3 on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC. Methods: Twenty-nine consecutive patients (mean age: 9.8 year; range: 1.7-16.1 year; F/M: 13/16) with newly diagnosed UC were randomized on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC. Aims of our prospective, one-year, placebo-controlled, double-blind study were to assess the efficacy of VSL#3 on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC.

Summary:

Currently, no data are available on the role of intestinal barrier dysfunction in the pathogenesis of GS. Aims: To investigate the changes in Intestinal Permeability (IP), TJ proteins genes expression and TLRs in GS and to establish whether these changes are related to an increased number of intraepithelial T cells lymphocytes (IELs) and to an over expression of inflammatory citokines. Methods: Biopsy samples were obtained from 21 GS patients (pts), 30 pts with active CD, 6 pts with CD in remission, and 14 non-CD healthy controls (age range: 5 years -50 years). Claudin (CL) 1, CL2, CL3, CL4, ZO-1 protein genes expression and TLR1, TLR2 and TLR4 were performed by Real-time PCR. IP was evaluated by lactulose/mannitol test (LA/MA). The numbers of IELs were detected by CD3 and TCR-α immunostaining and examined by counting peroxidase stained cells. Cytofluorimetric analyses of IL6, IL8, TNFα, and IFNγ was conducted on PBMC of all patients. Results: CL1, CL3 and CL4 expression were significantly increased in GS subjects compared to healthy controls, while no changes in CL2 , ZO-1 and Occludin expression were detected. This up-regulation did not influence IP, since in GS patients IP (0.017±0.012) was similar to that detected in healthy controls (0.016±0.010). Conversely, in active CD patients a significant over-expression of CL1 and CL2 and IP (0.202±0.55) was observed. Moreover, preliminary results showed that in GS patients up-regulation of CL was associated to increased expression of IL6 and IL8. Interestingly immunohistochemical examination showed only a moderate increase in CD3+ IELs in GS pts compared to active CD pts (27.25/100 vs 36.3/100 enterocytes, respectively), with no changes in TCR-β IELs. To evaluate the immune system involvement’s, TLRs expression was measured in a subgroup of patients. TLR1, but not TLR2 and TLR4, resulted significantly increased in GS pts (p=0.027) and in the GS (p=0.0039) respect to normal controls. Conclusions: Compared to CD pts, GS subjects showed normal IP and CL2 expression, while the other CL tested were up-regulated. These data suggest different pathogenic mechanisms in the two conditions, i.e., in GS loss of intestinal barrier function is not involved. The over expression of TLR 1 in CD and GS could suggest an important role of innate immune system in both conditions.

Summary:

Diarrhoea/constipation and abdominal pain (P). RESULTS: tTG resulted normal in all autistic patients. HLA-DQ2/8 distribution reflected that of general population. 36.7% of autistic patients showed LA/MA values higher than the cut off range (0.030). 21.7% of first-degree relatives had LA/MA higher than normal. LA/MA mean values patients resulted statistically different (p<0.05) among the groups: a) autistic, 0.042±0.084; b) relatives, 0.028±0.050; c) adult 0.014±0.014 and children controls 0.016±0.006. GIs resulted present in 48,1% of the autistics, being: C=46,2%, D= 14,6%, P= 19,2%. The presence of referred GIs was independent on IP alteration: no correlation was found between LA/MA values and GIs (p=0.275). Moreover, no correlation was found between LA/MA and typical autistic behavioural symptoms (ADI) such as: lack of communicative skills (p=0.163), deficits in social interaction (p=0.88) and restricted repetitive behaviour ad interests (p=0.246), neither between GIs and ADI. Calprotectin values indicated that inflammation was present in 24,6% of autistic patients and in 11,7% of their relatives. As already described, we found no correlation between IP and faecal calprotectin values (r=0.0177). CONCLUSION: A statistically significant increase of IP has been confirmed in larger groups of autistic patients and first degree relatives compared to controls, thus suggesting a genetically-determined defect of intestinal barrier function.

Summary:

Background & Aims: Several probiotic compounds have shown promise in the therapy of ulcerative colitis (UC). However, a strong sustained benefit remains to be seen. Uncontrolled pilot studies suggest that a probiotic preparation (VSL#3) maintains remission in mild to moderate UC and reduces active inflammation in adult patients. Aims of our prospective, one-year, placebo-controlled, double-blind study were to assess the efficacy of VSL#3 on induction and maintenance of remission and to evaluate the safety and tolerability of the probiotic preparation therapy in children with active UC. Methods: Twenty-nine consecutive patients (mean age: 9.8, year; range: 1.7-16.1, year; F/M: 13/16) with newly diagnosed UC were randomized to receive either VSL#3 (weight based dose, range: 450-1800 billion bacteria/day) (n= 14) or an identical placebo (n= 15) associated to concomitant induction steroid and maintenance remission mesalamine treatment. Children were prospectively evaluated at four time points: within 1 month , 2 months , 6 months and 1 year after diagnosis or at the time of relapse. Lichtiger colitis activity index and a physician’s global assessment were used.
to measure disease activity. At baseline, within 6 months and 12 months or at the time of relapse all patients were assessed endoscopically and histologically. Results: All 29 patients responded to the induction IBD therapy. Remission was achieved in 13 patients (92.8%) treated with VSL#3 and IBD therapy and in 4 patients (36.4%) treated with placebo (p=0.001). Overall, 3 of 14 (21.4%) patients treated with VSL#3 and IBD therapy and 11 of 15 (73.3%) patients treated with placebo relapsed within one year of follow-up (p=0.014; RR= 0.32; CI= 0.025-0.773; NNT=2). All 3 patients treated with VSL#3 and 6 of 11 (54.5%) patients treated with placebo relapsed within 6 months of diagnosis. At 6 months, 12 months or at time of relapse, endoscopic and histological scores were significantly lower in the VSL#3 group than in the placebo group (p=0.016). There were no biochemical or clinical adverse events related to VSL#3. Conclusions: This is the first pediatric, randomised, placebo-controlled trial that suggests the efficacy and safety of a highly concentrated mixture of probiotic bacterial strains (VSL#3) in active UC and demonstrates its role in maintenance of remission.

P0090

Title:
No effect of gut-directed hypnotherapy on rectal sensitivity in children with functional abdominal pain and irritable bowel syndrome

Arine M. Vlieger 1, Maartje M. van de Berg 2, Carla Menko-Frankenhuis 2, Marloes E.J. Bongers 2, Marc a. Benninga 2
1) St. Antonius Hospital, Nieuwegein, Netherlands 2) Academic medical Centre, Amsterdam, Netherlands

Summary:
Introduction: Gut-directed hypnotherapy has recently been shown to be highly effective in treating children with functional abdominal pain (FAP) and irritable bowel syndrome (IBS). This study was conducted to determine to what extent this treatment success is due to improvement of rectal sensitivity. Methods: 46 patients (8-18 years) with FAP (n=28) and IBS (n=18), according to the ROME II criteria, were randomized to either 12 weeks of standard medical therapy (SMT) or gut-directed hypnotherapy (HT). To assess rectal sensitivity a pressure-controlled intermittent distension protocol (barostat) was performed before and after therapy. Rectal hypersensitivity (RHS) was defined as pain thresholds ≤ 9 mmHg above minimal distension pressure. Results: RHS was found in 6/23 (27%) patients in both treatment groups at baseline. No difference in rectal pain thresholds was identified between IBS and FAP patients (p=0.87). After treatment, clinical remission (> 80% improvement in abdominal pain scores) was seen in 13% SMT patients compared to 57% HT patients (p=0.005). Similar treatment outcomes were found in patients with and without RHS (p=0.35). Rectal pain thresholds had not changed significantly after treatment in both groups. In SMT patients pain thresholds changed from 16.6 (7.8) mmHg (mean (SD)) at baseline to 18.6 (8.5) mmHg at 12 weeks (p=0.10) and in HT patients from 20.7 (11.5) mmHg to 22.5 (10.1) mmHg (p=0.10). Subgroup analysis in patients with RHS showed a significant increase in pain thresholds from 7.0 (2.5) mmHg to 15.5 (9.9) mmHg in SMT patients (p=0.02) and from 7.5 (1.6) mmHg to 25.5 (12.8) mmHg in HT patients (p=0.03), but this increase in pain thresholds was not significant different between treatment groups (p=0.09) and not related to treatment success (p=0.60). Conclusion: In this small patient sample, clinical success achieved with HT can not be explained by improvement of rectal sensitivity. In contrast to earlier findings hypersensitivity of the rectum was found in a minority of children with IBS. Further studies are needed to confirm our finding that no association exists between rectal barostat findings and clinical symptoms in children with pain related functional gastrointestinal disorders.

P0091

Title:
Use of Complementary and Alternative Medicine in Pediatric Patients with Functional and Organic Gastrointestinal Diseases: Results From a Multicenter Survey

Arine M. Vlieger 1, Marjolein Blink 1, Ellen Tromp 1, Marc a. Benninga 2
1) St. Antonius Hospital, Nieuwegein, Netherlands 2) Academic Medical Centre, Amsterdam, Netherlands

Summary:
Objectives. Many pediatric patients use complementary and alternative medicine (CAM), especially when facing a chronic illness for which treatment options are limited. So far, research on the use of CAM in patients with functional gastrointestinal disease has been scarce. This study was designed to assess CAM use in children with different GI diseases, including functional disorders, to determine which factors predicted CAM use and to assess the willingness of parents to participate in future studies on CAM efficacy and safety. Patients and methods. The prevalence of CAM use was assessed using a questionnaire in 749 children, visiting pediatric gastroenterology clinics of 9 hospitals in the Netherlands. The questionnaire consisted of 35 questions on the child’s GI disease, medication use, health status, past and future CAM use, reasons for its use, and the necessity of CAM research. Results. In this study population the frequency of CAM use was 37.6%. A total of 60.3% of this group had used CAM specifically for their gastrointestinal disease. This specific CAM use was higher in patients with functional disorders than in organic disorders (25.3% vs 17.2%; OR=1.57; CI=1.10–2.24). Adverse effects of allopathic medication, school absenteeism, age ≤ 11 years and a low effect of conventional treatment were predictors of specific CAM use. Almost all parents (93%) considered it important that pediatricians initiate CAM research and 51% of parents were willing to participate in future CAM trials. Conclusions. Almost 40% of parents of pediatric GI patients are turning to CAM for their child. Lack of
effectiveness of conventional therapy, school absenteeism and side effects of allopathic medication are more important predictors of CAM use than the type of GI disease. Since evidence on most CAM modalities in children with GI disorders is lacking, there is an urgent need for research in this field.

P0092

Title: Celiac Disease In Saudi Children

Asaad M A Assiri 1, Mohammad I El Mouzan 1
1) Division of Paediatric Gastroenterology, Department of Paediatric, Faculty of Medicine, King Saud University, Riyadh, Saudi Arabia

Summary:
Over one (1) year period, we identified 62 cases with celiac disease. Their mean age at presentation introduction to cereal, and onset of symptoms were 6.5, 6 months and 6 months respectively, all the children were Saudi. Three families have more than one affected child and most of the families were of good social status. The main symptoms were chronic diarrhea in 34 patient (57%), growth failure in 47 (74.6%), abdominal distension in 21 (33%) and vomiting in 14 (14%). The main physical signs at the time of presentation were short stature in 44 patients (69.8%), Pallor in 25 (40.3%) and abdominal distention in 21 (33%). The mean Haemoglobin, Serum feritin, Serum folate, calcium, serum albumin were 10.25 gm/L, 24.9 ng/ml, O.9nmol/L, 2.2 nml/L, 37.9 gm/L. The mean Antireticulin IgG, Anti Endomyseal IgG, IgA and Antigliadin Antibodies Ig G Ig A were one in 246, 332, 720,121 and 300. All patients had a total villous atrophy at the time of initial presentation repeat small bowel biopsies was done to 12 patients of whom 6,4 and 2 showed Normal villi, partial villous atrophy and subtotal villous atrophy respectively. A third biopsy was done to 2 patients while on gluten containing diet and showed villous atrophy. Most of the children improved on gluten-free diet. In summary, celiac disease is not uncommon in Saudi Arabia and still outnumbered by other causes of diarrhea. Careful Clinical Diagnosis and follow up of all patients with chronic diarrhea and failure to thrive is highly recommended by either Anti Endomyseal Antibodies or Anti tissue Transglutaminase. Pediatricians should differentiate the clinical picture of celiac disease from intestinal infections or other causes of chronic diarrhea, in order to manage this disease early, which responds dramatically to dietary management.

P0093

Title: Growth Failure in a Pediatric Inflammatory Bowel Disease Registry (PIBDNet) with Specific Association to Disease Phenotype

Ashish S Patel 1, Sandra Kim 1, Michael Kappelman 1, Stan Cohen 1, John Grunow 1, Richard Colletti 1
1) PIBDNet-The Pediatric IBD Network for Research and Improvement, Burlington, USA

Summary:
Introduction: Growth failure is a striking clinical feature of pediatric inflammatory bowel diseases (IBD). Prevention of this complication is an important goal of quality improvement interventions. We sought to 1) determine the baseline prevalence of growth failure in a contemporary cohort of pediatric patients enrolled in a quality improvement collaborative, and 2) identify the clinical and demographic factors associated with development of this complication. Methods: Between April 2007 and January 2008, children followed in 9 practices were enrolled in a multicenter improvement collaborative [The Pediatric IBD Network for Research and Improvement (PIBDNet)]. At the time of enrollment, the treating physician recorded demographic information, disease location and phenotype (utilizing the Montreal classification). Growth failure was classified by providers using the following definition: a drop in height by at least two isobars or a height percentile less than 3rd percentile for age. Based on this classification, we determined the overall point prevalence of growth failure and compared this by disease, age, sex, ethnicity, disease type and location using the chi square test and multivariable logistic regression. Results: A total of 783 IBD patients were included in this analysis [526 Crohn’s (CD), 215 ulcerative colitis (UC), and 42 IBD unclassified]. The mean age was 14.3 years (range 2-22 years). The male to female ratio was 1:0.8. Race/ethnicity as follows: 70.4% Caucasians, 8.3% African American, and 21.3% other. The overall prevalence of growth failure was 4.9%. The proportion of patients experiencing this complication did not vary by disease type, CD or UC (p<0.05). All CD patients with growth failure had an inflammatory (non-stricturing, non-penetrating) phenotype. The prevalence of growth failure did not vary by disease location (small bowel only, colon only, small/large bowel combined). All UC patients with growth failure had limited colonic disease versus pan-colitis. In both CD and UC patients, we did not observe differences in growth failure by age, gender, and race. Conclusion: The overall prevalence of growth failure observed in this large multicenter study of children and adolescents with IBD patients is 4.9%. That growth failure occurs in both CD and UC highlights the significance of this serious complication. Early recognition of, and prompt intervention in growth failure is crucial in the management of pediatric IBD patients.
**Title:**

X-linked agammaglobulinemia combined with regional enteritis in 14-year-old boy.

Astrida Sulakova 1, Olga Skopkova 1, Viera Dolezilova 1, Jaroslav Horacek 2


**Summary:**

OBJECTIVE: There is a high incidence of chronic gastrointestinal complaints, most commonly diarrhea, in patients with X-linked agammaglobulinemia. Despite intravenous immunoglobulin treatment, chronic severe diarrhea remains an important clinical problem. However, regional enteritis or Crohn’s disease-like lesion have been described rarely. There is a superficial clinical and radiological resemblance with classic inflammatory bowel diseases but the histopathology lacked diagnostic features in most cases. METHODS AND RESULTS: We report on a case of X-linked agammaglobulinemia combined with regional enteritis (Crohn’s disease) in a 14-year-old boy. He began to have recurrent respiratory tract infection in the 1st year of life. Agammaglobulinemia was diagnosed in the 1st year of age and confirmed by a DNA analysis (BTK p.R615G, 2002). He has been treated with high doses of intravenous (hypodermic at present) immunoglobulin and strong chemoprophylaxis (incl. metronidazole) since the 1st year of life. Recurrent respiratory infections incl. pansinusitis resulted in hypoacusis. Since the 9th year of age he has suffered from synovitis in both of his knees (bacteriologic and serologic findings were negative). The long-term therapy with methylprednisolon (0.25 mg/kg/day) has been successful. For the past three years he has suffered from left retinopathy of an unknown origin resulting in amaurosis. Over the past four years he has had recurrent diarrhea, malabsorption and failure to thrive. He has never been presented with abdominal cramps and intestinal bleeding but he has developed perianal fistula without a demonstrable connection with the gut on the magnetic resonance imaging (MRI). The MRI enteroclysis revealed distal ileal irregularities, cobblestones, spiculations and strictures resembling Crohn’s disease. Colonoscopy showed fissures and linear ulcers. The distal ileal biopsy specimens proved diagnosis of regional enteritis. CONCLUSION: The course of the disease in our patient is uncertain because there is little experience with long-term (incl. immunosupresive) therapy in patients with regional enteritis combined with X-linked agammaglobulinemia.

---

**Title:**

HEMOPHAGOCYTIC LYMPHOHISTIOCYTOSIS IN A CHILD WITH CROHN’S DISEASE AND FMF

NURAY USLU 1, HULYA DEMIR 1, GUNAY BALTA 1, INCI NUR SALTIK-TEMIZEL 1, YUSUF USTA 1, HASAN OZEN 1

1) HACETTEPE UNIVERSITY, FACULTY OF MEDICINE, DEPARTMENT OF PEDIATRICS, ANKARA, TURKEY

**Summary:**

Objectives: There are a few cases reporting hemophagocytic lymphohistiocytosis (HLH) in patients with inflammatory bowel diseases (IBD). We herein report a case of HLH that developed in a boy with Crohn’s disease (CD) and familial Mediterrenean fever (FMF). Methods and Results: A patient who was first diagnosed as CD at 9 years of age has been treated with mesalamine, prednisolone, and azathiopirine. He has also been diagnosed as FMF because of recurrent abdominal pain, and swelling, pain, and tenderness of joints and colchicine was started. Remission could not be achieved. Two years after the diagnosis of CD azathiopirine was stopped because of leucopenia and methotroxate therapy was added. After a month of methotroxate therapy, at the age of 11 years he attempted complaining of bloody diarrhea, fever, abdominal pain, poor appetite, weight loss, and fatigue. The laboratory data showed anemia, leucopenia, neutropenia, thrombocytopenia, increased ESR, positive CRP, and hypoalbuminemia. An elevation of ferritin (672 ng/ml) and a slight elevation of fasting triglyceride (211 mg/dl) was also observed. A bone marrow examination showed an increase in the number of histiocytes and prominent hemophagocytosis. A diagnosis of HLH was made and methylprednisolone, gama-globulin, cyclosporine was started. A blood transfusion of both erythrocytes and platelets was frequently performed. Granulocyte-colony stimulating factor was given because of severe neutropenia. Three mutations in the genes associated with familial HLH were analyzed and no mutations were found. To determine the secondary causes of hemophagocytosis, virologic, bacterial, mycobacterial and fungal studies were performed and all studies were negative. Despite intensive treatment, his condition deteriorated; fever persisted, pancytopenia worsened and massive haematochezia developed. He underwent emergent laparatomy. Multiple bleeding sites were present diffusely throughout the small bowel and colon, also there were fistulas and dense adhesions between small bowel and colon. No surgical resection was available and he died 41 days after admission. Conclusion: If patients with IBD receiving immunosupresive therapy present with unexplained fever, cytopenia, progression of organomegaly and biochemical changes HLH should be investigated for prompt diagnosis and treatment.

---

**Title:**

Infected pancreatic pseudocyst secondary to Varicella Zoster infection in an infant- a case report
Babu Vadmalayan 1, Pradnya Sheth 1, Muftah Eltumi 1
1) Department of Paediatric Gastroenterology, Watford General Hospital, LONDON, UK

Summary:
We report the first documented case of a pancreatic pseudocyst as a complication of Varicella Zoster (VZ) occurring in a previously well infant. An eight-month-old boy presented with five-day history of intermittent fever associated with generalized malaise, diarrhoea and abdominal pain. History revealed that he was also recovering from VZ infection, which he had developed 2 weeks earlier. On examination his temperature was 39 degree Celsius, he had resolving VZ skin rash and generally distended tender abdomen. There was no history of abdominal trauma. Investigations showed white blood cell count of 11.8 x 10^9/L, platelets of 646 x 10^9/L and a CRP of 249 mg/l. He had normal liver functions, renal functions and serum amylase level. An abdominal x-ray showed paucity of bowel gas on the right side and ultrasound scan confirmed the presence of a cystic mass on the right side of his abdomen, measuring 8 x 9 x 10 cm in diameter. He was commenced on intravenous fluid and broad-spectrum antibiotics. He then developed an acute abdomen and laparotomy was performed. A cystic mass over the head of pancreas was excised and 400 ml of fluid with necrotic debris was drained. The aspirate culture showed E.coli organisms and histological sections of the cystic wall showed an active inflammatory process. E. Coli was also grown in blood culture. Postoperative period was uneventful and he made complete recovery. E.Coli septicaemia has not been previously associated with the development of pancreatic pseudocyst. In children, pancreatic pseudocyst often results from abdominal trauma and less frequently from other causes of pancreatitis. Mumps, coxsackie B and infectious mononucleosis can cause pancreatitis and it is very rarely caused by VZ and it’s not been reported in an immunocompetent individual. Although a rise in amylase in the acute setting is often expected, it has been suggested that the serological changes of serum amylase may not directly correlate with cystic appearance or disappearance of pseudocyst. We believe that the etiology of infected pancreatic pseudocyst in our patient is due to a complication of pancreatitis secondary to VZ infection.

To our knowledge this is the first case of a varicella-related pancreatic pseudocyst presenting in infancy.

P0097

Title:
Clinical Features of Cyclic Vomiting Syndrome in a Tertiary Care Hospital in Riyadh, Saudi Arabia

BADR M ALSALEEM 1, MOATH ALTURAKI 1
1) KING FAHD MEDICAL CITY, RIYADH, SAUDI ARABIA

Summary:
Cyclic Vomiting Syndrome (CVS) is a recurrent attack of severe vomiting with free periods in between. Our objective was to study the clinical features of Saudi children with CVS. Methods: We reviewed the charts of all patients seen at our clinic and diagnosed with CVS, from April 2003 through December 2007. Results: Fifteen children were diagnosed with CVS: 9 boys and 6 girls with a mean age at diagnosis of 8 years (range: 2 – 11 years) and mean age of onset of symptoms of 5 years (range: 1.5 – 10 years). All patients have carried upper endoscopy, barium meal and SBFT, abdominal ultrasound and metabolic and endocrine screening tests. The median interval between first attack and final diagnosis was 27 months (range: 4 months – 9 years). The median duration of each attack was 5 days (range: 12 hours – 7 days). The time of onset was early morning for 10 patients (66.6%) and evening for 4 patients (26.6%) and one patient no specific time. Few parents (13.3%) recognized precipitation factors and prodromal symptoms for the attacks, including changed behavior, changed skin color, and drooling. The vomiting was associated with, abdominal pain (68.7%), lethargy (100.9%), headache (37.5%), photophobia (18.7%), social withdrawal (75%), nausea (87.5%), paler (84.3%), fever (18.7%).100% of our school age patient thy missed school for more than 20 days. None of them could go to the school during episodes and 2 of them they leave the school because of this problem. None of our patient was diagnosed before as CVS. It was the first time for the parents to hear this diagnosis even numerous previous hospital admissions and Emergency Room visits. Conclusion: This is the first report about CVS in Saudi children. The clinical features are similar to which was reported in the lectures. There is prolonged period between onset of the disease and diagnosis. The morbidity of the disease was higher. It seems that some pediatrician and general practitioner were not aware about this disease. The CVS need further studies about the prevalence in Saudi Arabia and further awareness of the pediatrician working in Saudi Arabia.

P0098

Title:
Coeliac disease (CD) and pregnancy: could the birth of a small for gestational age newborn (SGA) be a symptom of coeliac disease in the mother? A case-control multicentric study.

Maria E Baldassarre 1, Annamaria Laneve 1, Antonietta Fontana 3, Margherita Fanelli 2, Nicola Laforgia 1
1) Neonatology and N.I.C.U, University of Bari, Bari, Italy 2) Medical Statistics, University of Bari, Bari, Italy 3) Laboratory Unit, Policlinico Hospital, Bari, Italy

Summary:
A SGA birth could be a symptom of undiagnosed CD in mother. In a recent study the prevalence of celiac disease in the mothers of SGA infants is higher (1.6%)(OR=2.25,p=0.03) than in the general female population (0.71%). In genetically predisposed individuals, gluten affects both fetal and maternal parts of the placenta resulting in small for age children. Early diagnosis and treatment may avoid damages. Aim of study To determine the prevalence of untreated CD among SGA mothers (SgaM) in a multicentric study. Methods From September 2005 to February 2007, SgaM (cases) and Nga mothers (NgaM (control group) were enrolled. Exclusion criteria: twin birth, artificial insemination. Blood samples were taken (5 cc) and anti-human IgA and IgG classes antigliadin antibodies (IgA and IgG anti-tTg ab) were tested by ELISA commercial kit (Eurospital, Trieste, Italy); total IgA ab were tested. Statistical analysis: Fisher exact test, Odd ratio (OR). Preliminary Results 120 SgaM (mean age 31.7 y) and 120 NgaM (mean age 31.1 y) were enrolled. SGA were like all NGA (gestational age, sex, number of preterm and term newborns) except for the body weight (1977 ± 584.5 g vs. 2830 ± 701.6 g; p<0.05). SgaM had an higher risk of spontaneous abortions (OR = 1.2). 2/120 (1.6%) SgaM had positive IgA and IgG anti-tTg ab (first case: total villous atrophy, second case: subtotal villous atrophy, both HLA DQ2 positive). Summary. Undiagnosed CD is slightly more frequent (1.6%) among SGA mothers than in the general population. Conclusions. A SGA birth (without a known cause) could be a risk factor for CD: screening for CD in SgaM (in pregnancy) could lead to the effective strategies for the prevention of such disease. Testing for CD should be included in the battery of tests prescribed for pregnant women.

P0099

Title: Human-beta defensins, faecal calprotectin and TNF-alfa values in stools of preterm and term newborns: is there a role in innate defense?

Maria E Baldassarre 1, Luigi Corvaglia 2, Luigi Amati 4, Margherita Fanelli 3, Barbara Battistini 2, Nicola Laforgia 1
1) Neonatology and N.I.C.U, University of Bari, Bari, Italy 2) Neonatology and N.I.C.U, University of Bologna, Bologna, Italy 3) Medical Statistics, University of Bari, Bari, Italy 4) IRCCS, Castellana Grotte, Italy

Summary: Innate antimicrobial peptides [defensins (D) are the most abundant in humans] are considered to play an important role in host defense against microbial invasion. In newborns a few investigations revealed the presence of human beta-D (hbetaD) in tracheal aspirates and breast milk. Increase of faecal calprotectin (FC) in healthy newborns may be interpreted as a defense mechanism against yeast and fungi. Neonatal T-cells failed to produce a significant amount of TNF-alfa that could provide protection against infections. Aim of the study: to evaluate longitudinally hbetaD, FC, TNF-alfa in stools of healthy preterm and term newborns, in relation to way of delivery [caesarean section (CS) vs vaginal delivery (VD)] and gestational age (GA). Patients and methods. We enrolled 37 preterm newborns (G1) (mean GA 31.25, mean BW 1870 g, 29 CS, 8 VD) and 30 term newborns (G2) (mean GA 39.27, mean BW 3306 g, 20 CS, 10 VD). Stool samples on day 15th (d15) and 30th (d30) were frozen at -20 degree until use. HbetaD and TNF-alfa were analyzed by an Elisa method (Immunodiagnostic; values: pg/mg faeces). FC was analyzed with Calprest kit (Eurospital, Italy; values: microg/g faeces). For statistical analysis data were analyzed with SAS statistical software package. For split plot design for repeated measures ANOVA was used. Regression model was employed to evaluate relation with GA. Results. Mean FC values increased both in G1 and G2 from d15 (G1: 185.8 ± 101; G2 227.29 ± 87) to d30 (G1: 201 ± 90; G2 287.11 ± 87) in a statistically significative way (p<0.001). The increase was higher in VD respect to CS (p<0.01). Mean TNF-alfa values did not increase from d15 (G1: 47.04 ± 23; G2 35.82 ± 14) to d30 (G1: 53.60 ± 29; G2 34.59 ± 12) and was negatively correlated to GA (p: <0.001). Mean hbetaD values increased both in G1 and G2 from d15 (G1: 0.79 ± 0.3; G2 1.08 ± 0.6) to d30 (G1: 1.35 ± 1; G2 1.25 ± 1) in a statistically significative way (p<0.001). Conclusions. HbetaD, FC, TNF-alfa are present in intestinal lumen in preterm and term newborns. FC and hbetaD increase in the first month of life, FC is higher in term newborns and in VD, perhaps influenced by intestinal colonization. TNF-alfa is higher in preterms, and could represent a protective mechanism against intestinal infections.

P0100

Title: Biological therapy with Infliximab in Ulcerative Colitis: personal experience.

Barbara Bizzarri 1, Barbara Bizzarri 1, Fabiola Fornaroli 1, Fabiola Fornaroli 1
1) Pediatric Gastroenterology Unit, Parma, Italy

Summary: Objective: Clinical experience of therapy with Infliximab in patients with Ulcerative Colitis (UC) is certainly less known that in patients with Crohn’s disease. We report our personal experience with Infliximab in 3 patients with UC not responder or dependent to high dosage of steroid therapy. Methods: 3 male patients with UC were enrolled. G.E., 7 years, presented iperacute UC (pre-mega toxic colon stage) not responder to steroid treatment. C.D., 9 years, with UC dependent to high dosage of steroid and with important arthralgic symptoms with functional limitations not improved
Comorbidities and Risk Factors in Romanian Celiac Disease Pediatric Patients

Belei Oana 1, Simedrea Ioan 1, Sabau Ioan 1, Ilie Rodica 1, Daescu Camelia 1
1) First Pediatric Clinic, University of Medicine and Pharmacy Victor Babes, Timisoara, Romania 2) Pathology Department, Emergency Children’s Hospital Louis Turcanu, Timisoara, Romania

Summary:
Introduction: Celiac disease is an immune-mediated enteropathy caused by a permanent sensitivity to gluten in genetically susceptible individuals. It occurs in symptomatic subjects with gastrointestinal and non-gastrointestinal symptoms, and in some asymptomatic individuals, including subjects affected by: type 1 diabetes, Turner syndrome, Williams’s syndrome, IgA deficiency and first degree relatives of individuals with celiac disease. Objectives: Several studies have analyzed the importance of some factors involved in celiac disease pathogenesis. We tried to establish a relation between presence of five risk factors and the severity of villous intestinal injury by introducing a risk score. Methods: The present study was performed on a group of 25 pediatric patients with celiac disease diagnosed between Nov 2004 and Apr 2007; celiac disease severity was classified using the last patient Infliximab well controlled the iperacu

Accuracy of Serological Tests in Celiac Disease Children

Belei Oana 1, Simedrea Ioan 1, Marginean Otilia 1, Ilie Rodica 1, Daescu Camelia 1, Marcovici Tamara 1
1) First Pediatric Clinic, University of Medicine and Pharmacy Victor Babes, Timisoara, Romania 2) Pathology Department, Emergency Children’s Hospital Louis Turcanu, Timisoara, Romania

Summary:
Introduction: Nowadays, the gold standard of celiac disease (CD) diagnosis is intestinal biopsy showing characteristic villous lesions. The biopsy sample can be taken by using Watson capsule or during upper digestive endoscopy. Objectives: Assessing sensitivity (Sn), specificity (Sp), positive predictive value (PPV) and negative predictive value (NPV) of serologic tests used for CD screening. The diagnosis was based on histological intestinal injury, using Marsh classification. Methods: 70 consecutive patients (medium age 6.5 years) presenting high suspicion of CD (chronic diarrhea, small stature, weight loss, or anemia resistant to oral martial therapy) were enrolled in the study during Apr 2004 until May 2007 – group A. All patients from group A underwent intestinal biopsy. During the same period, a lot of 62 consecutive, randomized patients – lot B (medium age 9 years) underwent upper digestive endoscopy for different causes non-related to gluten intolerance: recurrent vomiting, gastritis, gastric or duodenal ulcer, hematemesis, cirrhosis, alternating bowel habits) and also for each patient from group B a sample of intestinal biopsy was taken. We assessed for each patient total serum IgA level, IgA and IgG antigliadine antibody (AGA), IgA anti-endomisium antibody (EMA) and IgA anti human tissue transglutaminase antibody (anti hu-TG). Results: EMA and IgA Sn was 100%, while IgA, IgG AGA 66%. Sp was 100% for EMA, 95% for IgA, 74% for IgG AGA and 87% for IgA AGA. NPV was 100% for EMA and IgA, 94% for IgG AGA and 95% for IgA AGA. PPV was 100% for EMA, 71% for IgA (p = 0, 03% vs. EMA), 25% for IgG AGA and 66% for IgA AGA. Conclusions: Although IgA antibody showed an optimum Sn, their low Sp determined PPV significantly lower than those of EMA assay. PPV of IgA and IgG AGA were too low to warrant submitting a patient to intestinal biopsy for suspected celiac disease only performing AGA serology. In order to optimize the serologic diagnosis of CD, screening tests among risk population must associate a combination with maximum specificity and sensitivity - EMA and IgA antibodies assessment. In order to develop a non-invasive diagnosis algorithm for CD, further studies on different age groups are needed regarding deaminate gliadine peptides antibody, anti-actine antibody, or zonulin.

P0103
Title: Accuracy of Serological Tests in Celiac Disease Children

P0104
Title: Comorbidities and Risk Factors in Romanian Celiac Disease Pediatric Patients

P0104
Marsh criteria. Five celiac risk factors have been analyzed: gluten administration before age of 5 month in artificially nourished infants, presence of first degree relatives diagnosed with celiac disease, type I mellitus diabetes, Down syndrome and adeno or herpes virus infection in patient’s medical history. Odds ratio and relative risk have been calculated for each of them using an original formula, and the risk score was computed for each patient. The calculated score was compared with the intestinal morphological result. Results: We found a strong correlation between the computed score and the villous alteration’s degree (r=0,94). Finally, we estimated the score parameters: sensitivity, specificity and positive predictive value, which validated our score. Conclusions: We consider very useful an assessment of risk differentiation in celiac patients with positive serology, knowing that the majority of gluten enteropathy subjects present the latent form of illness, without typical symptoms, according to celiac iceberg described in 1991.

P0105

Title: Anti-Saccharomyces cerevisiae and anti-Helicobacter pylori antibodies in celiac disease
Mongi Ben Hariz 1, Lilia Laadhar 2, Amina Toumi 2, Maryam Kallel-Sellami 2, Ahmed Maherzi 1, Soundes Makni 2
1) Celiac Disease Research Unit. Mongi SLIM Hospital, Tunis, Tunisia 2) Immunology department, La Rabta Hospital, Tunis, Tunisia

Summary:
Aim: To evaluate by a case-control study the prevalence of anti-Saccharomyces cerevisiae (ASCA) and anti-Helicobacter pylori (HP) antibodies in children with celiac disease. Patients and methods: we enrolled forty histologically proven celiac disease patients and 40 children matched with age and sex. All subjects were screened for: IgA anti-transglutaminase (ATG), IgG and IgA ASCA, IgG and IgA anti-HP by ELISA and IgA anti-endomysium (AE) by indirect immunofluorescence on human umbilical cord. Results: Our patients were 17 boys and 23 girls, mean age: 9 years. Thirty one patients (77.5%) were on gluten free diet. ATG and AE were present in 14 and 15 patients respectively. Concerning ASCA and anti-HP antibodies, only IgA ASCA antibodies were statistically more prevalent in patients than in controls (45.7% vs 22.5%). A positive correlation was found between anti-HP antibodies and the presence of AE (p=0.01) and ATG (p=0.02). Moreover, the presence of IgA and/or IgG anti-HP and ASCA in the same subject was statistically more frequent in patients than in controls (p = 0.0048) and this was correlated to AE (p=0.003) and ATG (p=0.03). Conclusion: Increasing mucosal permeability in celiac disease could explain the presence of ASCA and anti-HP at the same time in patients with ATG and AE. However, this could not exclude involvement of these 2 micro-organisms in the disease induction in genetically susceptible patients.

P0106

Title: Cytokines, matrix metalloproteases, and FOXP-3 insitu expression in latent celiac disease
Mongi Ben Hariz 1, Maryam Kallel-Sellami 2, Malika Ben Ahmed 3, Lilia Laadhar 2, Ahmed maherzi 1, Soudes Makni 2
1) Celiac Disease Research Unit. Mongi Slim Hospital, Tunis, Tunisia 2) Immunology Department La Rabta Hospital, Tunis, Tunisia 3) Pasteur Institut, Tunis, Tunisia

Summary:
Cytokine expression in intestinal biopsies of CD patients has been widely studied. Most studies concerned symptomatic CD patients with both positive serology and profound villous atrophy. However few data are available about cytokine insitu expression in latent CD diagnosed in screening programs. Aim: To assess the expression of INF-gamma, TNF-alpha, IL-10, matrix metalloproteases (MMP) 3, MMP12 and FOXP-3 in intestinal biopsies from latent CD patients compared to active forms. Methods: This study included 43 schoolchildren, aged 9 to 12 years, who participated in a CD mass screening study: Group 1: 25 children with symptomatic and active CD Group 2: 5 children with asymptomatic latent CD (positive IgA anti-endomysium and anti-transglutaminase antibodies) and a normal intestinal histology. Group 3: 23 children with positive IgA anti-transglutaminase antibodies, a negative anti-endomysium antibodies and a normal histology. Results and discussion: A significant increase in INF-gamma, MMP3 and MMP12 expression was found in CD active children comparing to the two other groups. These data confirm the central role of INF-gamma in CD pathogenesis by sustaining a Th-1 response in intestinal mucosa. In the Latent group, no significant increase of these mediators was seen which is in line with the absence of intestinal damage. IL-10 and FOXP-3, involved in feed back negative regulation was also not up regulated. These data do not agree with a role of IL-10 and regulatory T cells in maintaining homeostasis in latent CD patients. Further investigations focusing on a second immunosuppressive cytokine i.e. TGF-beta are needed to elucidate the exact mechanisms accounting for the absence of an inflammatory response in spite of autoantibodies production.

P0107

Title: HLA class II polymorphism in children with celiac disease: correlation with clinical manifestations
Mongi Ben Hariz 1, Lilia Laadhar 2, Amina Toumi 2, Moncef Zitouni 2, Ahmed Maherzi 1, Soundes Makni 2
1) Celiac Disease Research Unit. Mongi Slim Hospital, Tunis, Tunisia 2) Immunology Department La Rabta Hospital, Tunis, Tunisia

Summary:
Objective: To elucidate the HLA DRB1, DQB1 and DQA1 polymorphism in Tunisian children with typical form of celiac disease (CD) in comparison with those from mass screening (atypical and silent CD) Material and Methods: we recruited 3 groups: Group 1: 40 CD children diagnosed according to the ESPGHAN criteria Group 2: 40 healthy controls matched with sex, age and geographic origin Group 3: 38 CD children diagnosed by mass screening in schoolchildren. HLA class II DRB1, DQB1 and DQA1 alleles were typed by PCR-SSP. Results: Comparing the groups 1 and 2, we found a pronounced increase of the susceptible alleles HLA DRB1*03 (RR=4.18, Pc=0.0001), DQB1*02 (RR= 7.9, Pc<0.0001) and DQA1*0501 (RR=4.1, Pc<0.0001). As for protective alleles, we detected a high frequency of DRB1*13 (RR= 0.0059, Pc=0.0004), DQB1*06 (RR=0.125, Pc= 0.0002) and DQA1*0102 (RR= 0.071, Pc=0.0015) in group 2. Haplotype analysis showed that the main combination observed was the conformation DQ2 (DQA10501-DQB1*02) in 36 patients from group 1 and 30 from group 3. There was no statistically significant difference between the groups 1 and 3 according to the distribution of the different alleles. Conclusion: We confirmed in this study the high frequency of DQ2 haplotype in CD patients and we identified a new protective haplotype DRB1*13-DQA1*0102-DQB1*06. However HLA polymorphism seems to have no impact on clinical forms of CD.

P0108
Title:
Whole blood celiac test: usefulness for diagnosis and gluten free diet survey in children celiac disease

Mongi Ben Hariz 1, Lilia Laadhar 2, Maryam Kallal-Sellami 2, Moncef Zitouni 2, Ahmed Maherzi 1, Soudes Makni 2
1) Celiac Disease Research Unit, Tunis, Tunisia 2) Immunology Department La Rabta Hospital, Tunis, Tunisia

Summary:
Introduction : The conventional celiac disease (CD) antibody tests require patient’s sera and are laborious and time-consuming. The aim of this study was to evaluate a newly developed rapid whole blood test in IgA anti-transglutaminase detection and its usefulness for diagnosis and gluten free diet survey of CD children. Patients and methods : We enrolled 56 subjects (27 boys and 29 girls) for the detection of CD antibodies. Twenty of them were on a gluten-free diet (CD patients) and 36 were suspected of suffering from CD. IgA anti-transglutaminase was detected by the new rapid whole blood test (BiocardTM Celiac Test) using self transglutaminase and compared to the conventional ELISA test (home made). Results: Thirteen patients were positive by the 2 tests and 41 negative thus concordance between the 2 tests was 96.4%. Only 2 patients were slightly positive by the rapid test and negative by ELISA. These 2 patients were on gluten-free diet and one of them has IgA deficiency. If we consider ELISA as a reference test, the rapid test showed 100% sensitivity, 96.4% specificity, 100% negative predictive value and 86.6% positive predictive value. Conclusion : Whole blood rapid test seems to be as performant as ELISA test for IgA anti-transglutaminase detection. This test could be useful for CD diagnosis since it’s easy and fast. Nevertheless its suitability for gluten free diet survey should be assessed on a larger cohort.

P0109
Title:
A Multicentric survey to assess the efficiency of a lactose free, lactalbumin free, high mineral, low osmolarity formula fortified with Saccharomyces Boulaardii in the management of acute diarrhoea in infants

B Le Luyer 1, G Makhoul 2, J F Duhamel 3
1) GHH, Le Havre , France 2) Youssef Halba, Akkar, Liban 3) CHU , Caen, France

Summary:
Aim of the Study : The aim of the study was to compare, in a controlled multicentric study, the efficiency of a lactose free, lactalbumin free, high mineral, low osmolarity formula (Novalac® AD/ Diarinova®) fortified with Saccharomyces Boulaardii in the management in infants with Acute Diarrhoea. Methodology : 70 infants with an average age of 163 j + 11.7 suffering from acute diarrhoea with an average of 6.6±0.4 stools per day received, after randomisation, either a standard (control) formula (36), or a lactose, lactalbumin, high minerals and low osmolarity formula fortified with SB (34). The 100ml composition for the standard (control) formula is of 7.2 g for carbohydrates (including 5.1 of lactose), 1.6 g of protein, 3.3 g of fats, with a caloric value of 65 kcal. . The composition of the assessed formula (ADSB) is of 7.1 g for the carbohydrates (with lactose < 0.1%) , 2.3 g of proteins, 2.7 of fats, a caloric value of 61.9 kcal and supplemented with 26 mg of Saccharomyces Boulaardii. The duration of the diarrhoea was defined as the time needed until the occurrence of the first soft stools. Results: At inclusion time, the criteriae were the following: the age, weight, and number of stools per day were the same in the 2 groups. There were 15 with rotavirus in the SB group, and 13 in the control group. The duration of the diarrhoea from time of inclusion was significantly reduced in the SB group (35.4 ±3.7 hours) vs the control group (67.1 ± 5 h)
with p<0.001, as well as from the time of administration of the formula: 53±6 h vs 38±4.2 h p <0.01. The average daily weight gain was significantly higher in the SB group as compared with the control group (74.2±26.4 vs 23.7±6.7 p<0.05). The ORS consumption is, however, higher in the control group as compared to the SB, that of formula is higher in the SB group as compared to the control group, but there are no significant differences. The number of stools at D4, D5 and D6 remains significantly higher in the control group than it is in the SB group. After 10 days, no Saccharomyces Boulardi is found in the stools Conclusion: In dehydrated infants, the use of a lactose, lactalbumin free formula with a high minerals content and a low osmolarity (Novalac® AD/Diarinova®) fortified with Saccharomyces Boulardi significantly shortens the duration of diarrhoeas and allows quicker weight regain than a standard formula.

P0110

Title:
Are the rome III criteria useful in tertiary care for patients with abdominal pain?

Andrieke C. Knoottnerus 1, Bert H. Derkx 1, Rian H. Teeuw 1, Ellen Kohnhorst 2, Anne P. Cohen 2
1) Emma Kinderziekenhuis AMC, Amsterdam, the Netherlands 2) Basacle, Amsterdam, the Netherlands

Summary:
Objective; The Psy-Med Unit (PMU) of the Emma Children’s Hospital, Amsterdam, is a tertiary referral centre for children with severe, long-lasting functional complaints. Inclusion criteria: - aged between 6 - 18 yrs, - therapy resistant (medically unexplained) complaints existing > 3 mths and 2 or more of the following: o complaints have impact on their social and family life’s o stopped playing a sport and stopped their hobbies o school absenteeism is present In this study the Rome III criteria for functional abdominal pain were evaluated to determine if the Rome III criteria discriminate in the PMU population. Methods: Observational study of consecutive patients presenting with abdominal pain (AP) as primary complaint. The charts of the patients were evaluated for gastro-intestinal (GI) complaints and non-gastro-intestinal (non-GI) complaints. All patients were classified according to the Rome III criteria. Results: In 4 years 140 patients were enrolled in the PMU of which 34 patients presented with AP as primary complaint. The chart of 1 patient was untraceable. Two patients lost their complaints between referral and the first visit. Of the remaining 31 patients 17 were girls. Age at first visit: mean 14 year, range 6-17 year. Diagnoses functional dyspepsia 3 (9,7%) irritable bowel syndrome 3 (9,7%) abdominal migraine 0 (0,0%) CFAP 8 (25,8%) CFAPS 16 (51,6%) constipation and functional dyspepsia 1 (3,2%) Other GI complaints nausea 15 (48%) vomiting 5 (16%) less appetite 5 (16%) Non-GI complaints headache 14 (45%) tiredness 6 (19%) sleeping problems 6 (19%) Conclusion; Almost 80% of patients referred to the PMU were categorized as CFAP(S) as a consequence of the inclusion criteria (effect on daily functioning) and the presence of other complaints in the study group (100%). The only difference between CFAP and CFAPS: the time criterion. In fact, 23% is a large part of the week, especially while the most functional complaints are not there during the night. This time-criterion is a limiting factor in the classification of the CFAPS. 84% of the group had other GI complaints. In addition, 100 % of them had non-GI complaints. It is important to take this into account in the classification. The combination of these functional complaints is the burden of the life’s of these patients. Moreover it is known from literature that this group of patients often switches from one functional complaint to another.

P0111

Title:
Use of polyethylene glycol in children aged < 2 years

MANSOOR AHMED 1, BHARATHI PAI 1, TIM REYNOLDS 1
1) QUEEN’S HOSPITAL, BURON ON TRENT, UK

Summary:
Background : Constipation is one of the most referred conditions in Paediatric Gastroenterology practice. If neglected, it may result in fecal impaction, encopresis, abdominal and rectal pain. In addition to lifestyle and nutritional considerations, treatment of childhood chronic functional constipation includes osmotic and/or stimulant laxatives to prevent future impaction and to promote regular bowel habits. From the available evidence it is obvious that polyethylene glycol (PEG) is effective for both disimpaction and as maintenance treatment in children with chronic constipation. Its paediatric preparation is currently licensed for use in children over 2 years of age in the United Kingdom (UK). Objective: We reviewed the literature and identified the data to evaluate the efficacy and safety of PEG in children aged < 2 years. Methods: We searched the Cochrane Library, Pubmed and Medline (1950 to 2007), Cinahl (1982 -2007) and Embase (1974-2007) using search words ‘Constipation OR fecal impaction OR disimpaction’, AND ‘polyethylene glycol OR macrogol OR movicol’ restricted to infants and children < 2 years. Only 5 relevant studies were found. Meta-analysis of this data was carried out to identify any safety issues and to derive information about the efficacy of PEG as a treatment for constipation. Results: a. Safety: There were no serious side effects or significant adverse events reported. The most common side effect was diarrhoea that resolved on dose reduction. Rarely, children reported increased flatulence and decreased palatability compared to other laxatives. b. Efficacy: In all trials, PEG (3350 or 4000) was an effective treatment for constipation even in children < 2 years of age. In trials against lactulose, PEG was equally well tolerated. One trial suggested that PEG was marginally more effective by virtue of fewer adverse effects. Conclusion: PEG is an effective treatment for...
functional constipation in children aged < 2 years. The common side effect is diarrhoea but this resolved on dose reduction.

P0112

Title:
Anorectal Manometric parameters in Thai Children with Constipation

Patchara Kiettisanpipop 1, Patchara Kiettisanpipop 1, Boosba Vivatvakin 1, Boosba Vivatvakin 1
1) Chulalongkorn University Medical School, Bangkok, Thailand

Summary:
OBJECTIVES: To evaluates anorectal motor function in chronic constipated Thai children with manometric techniques. SETTING: Pediatric Gastroenterology Unit, King Chulalongkorn Memorial Hospital. From 1 Jan, 2006- 31 Dec . 2007 METHODS: Anorectal manometry data of twenty-three patients (aged 1 months to 11 years 10 months) with chronic constipation was studied. Study paramters included manometrically determined resting and maximum sphincteric constriction pressure, anal canal length, RAIR threshold volume and degree of relaxation. RESULTS: In 23 Thai children, the anal canal length was ranged from 1 to 4 cm (1.48 + 0.65 cm). The high pressure zone was 1 to 4 cm from anal verge (2.85 + 1.06 cm). The length of anal canal, distance from anal verge and high pressure zone were correlated with height and age of the children (R range from 0.654 to 0.744, P<0.01). The mean resting anal pressure in constipated children was 64.44 + 20.18 mmHg and maximum sphincter constriction pressure was 154.30 + 32.47 mmHg. RAIR threshold volume in constipated children was ranged from 5 to 110 ml (29.35 + 23.61 ml) with maximum percent relaxation ranged from 26 to 100% (62.61 + 23.01%). The RAIR threshold in children aged 2-6 years and 6-12 years was significantly higher than children ages under 6 months and 6 months to 2 years (P = 0.027). CONCLUSIONS: This study presents the anatomic data of anal canal of Thai children which was shorter than other previous studies. The resting sphincteric pressure in constipated Thai children was similar to other previous studies.

P0113

Title:
ESOPHAGEAL PAPILLOMA IN A BOY WITH REFLUX ESOPHAGITIS , A CASE REPORT.

Boosba Vivatvakin 1
1) DEpt.of Pediatrics ,Faculty of Medicine ,Chulalongkorn University, Bangkok, Thailand

Summary:
Background . Esophageal papilloma is a rare disease in children , few reports on infant born to mother with cervical papilloma . To demonstrate the Human papilloma virus in the esophageal biopsy is also hardly done . Local cauterization with cryotherapy, laser coagulation and other attempts have been done with success. Objective . To report a case with esophageal papilloma with multiple therapeutic modalities Case report : A 10 year old boy presented with epigastrium pain and vomiting for 1 month. In the vomitus he saw fresh blood streaks on the digested food . He also complained of frequent belching and abdominal discomfort without dysphagia and odynophagia . He had been treated as ADD (Attention Deficit Disorder), with methylphenidate 10 mg on school days . On physical examination revealed a thin and pale boy ; aggressive looking but co-operative,BW=26 Kg,Ht=136cm Chest and Heart=WNL with normal neurological exam. The laboratory profiles showed CBC: Hb 11gm% WBC 11000 PMN 80 L 20 Hct 32, Plt 120,000 AST= 22,ALT=12 , ALP 290 U/l, PT = 11.9/11.8 Alb /Glob = 4.2/2.2 gm/dl . UGI study: tortious filling defects at lower esophagus. Impression : suspected esophageal varices. Esophagagogastroduodenoscope : multiple polypoid lesions at 22-28 cm. Loose GE junction ,Stomach :normal appearance CLO : neg. Pathology showed squamous papilloma along with inflammatory reaction in the submucosa, no malignant change. Lesions may be associated with human papilloma virus infection with differential diagnosis of reflux esophagitis. Skin Prick Test : for for food antigens were negative . Positive DNCB stimulation test with strong reaction . Treatment multisessionsof laser and heater probe ablations and omeprazole 1.3 mg /kg/day. The papilloma regressed and recurred after PPI stopped . The gastroesophageal reflux with reflux esophagitis has to be treated with cis- apride alternate with domperidone together with intermittent course of lansoprazole . Esophageal manometry showed normal resting LES pressure with subsequently relaxed with Valsava manoeuvre . 7 years of follow up, he never complain of GI symptoms and grows up to healthy adolescence. Conclusion : Esophageal papilloma can be observed in long standing gastroesophageal reflux with concurrent infection by the Human papilloma virus . Various modalities of papilloma removaltogether with anti -reflux treatment should be tried with successful outcome.

P0114

Title:
E-Cadherin negative Oesophagogastric adenocarcinoma in a 13 year old girl

Briars GL 1, Sartori P 2, Paterson JS 2, Early A 1, Arends MJ 2, Cottrell BJ 1
1) West Suffolk Hospital, Bury St Edmunds, UK 2) Addenbrookes Hospital, Cambridge, UK
Summary:
Objective: To describe a case. Methods: Case report. Results: A 13.8 year old previously healthy caucasian girl presented to hospital with epigastric pain and difficult swallowing of three months duration in association with a microcytic hypochromic anaemia (Hb7.9 g/dl). Her symptoms had been refractory to proton pump inhibitor therapy by her family physician. At upper endoscopy she had a 1cm diameter irregular multi-lobed polyp just above the gastro-oesophageal junction and a circumferential irregular lesion in the cardia. Biopsies demonstrated a diffusely infiltrating signet ring cell adenocarcinoma that was negative for E Cadherin immunostaining, but normal for the 4 mismatch repair proteins MSH2, MLH1, MSH6 and PMS2 (excluding HNPCC). Thoraco-abdominal CT scanning demonstrated hepatic and lymph node metastases and thickening of the proximal half of the stomach wall. Family history was negative. Palliative Chemotherapy with Epirubicin, Cisplatin and Capecitabine has resulted in reduction in the size of the lymph node metastases. Endoscopic, histological and radiological images will be presented with further clinical and genetic data. Conclusions: This epithelial cancer is extremely rare in childhood. It may have arisen as a result of hereditary diffuse gastric cancer syndrome.

P0115

Title:
Severe functional faecal retention with soiling: long-term outcome following manual evacuation.

Briars GL 1, Allen RWH 1, McDonald AE 1
1) West Suffolk Hospital, Bury St Edmunds, UK

Summary:
Objective: To describe outcome in patients undergoing manual evacuation under general anaesthesia for functional faecal retention with soiling. Methods: A structured case note review of 18 consecutive patients (14 male), who satisfied the Rome II criteria, and underwent manual evacuation in one hospital between July 1998 to June 2002 was conducted. Results: Soiling ceased in 10/18 patients at a median interval of 2.7 months after the procedure. They had previously received drug treatment for a median duration of 1.83 years. Picosulphate maintenance therapy was ceased in 8/16 at a median time of 1.7 months. Two patients required second manual evacuations at a median interval of 15 months. Conclusions: Manual evacuation under GA is an effective procedure as the initial part of treatment in this sub-population of constipated children.

P0116

Title:
GASTRIC EMPTYING MEASUREMENTS OF LIQUIDS IN CHILDREN WITH THE 13C-ACETATE BREATH TEST: COMPARISON WITH THE 99m TECHNETIUM RADIOSCINTIGRAPHY

Bruno Hauser 1, Jean De Schepper 1, Vicky Caveliers 2, Thierry Devreker 1, Silvia Salvatore 3, Yvan Vandenplas 1
1) Department of Paediatrics Universitair Ziekenhuis Brussel Kinderen, Brussels, Belgium 2) Department of Nuclear Medicine Universitair Ziekenhuis Brussel, Brussels, Belgium 3) Clinica Pediatrica Ospedale F. Del Ponte Universita dell’Insubria, Varese, Italy

Summary:
Objective: Scintigraphy is considered as the “gold standard” for measuring gastric emptying (GE). The 13C-acetate breath test (13C-ABT) offers an attractive alternative to measure GE of liquids as it is non-radioactive. There are limited data in the literature concerning the use of Non Dispersive Infrared Spectrometry (NDIRS) in the evaluation of GE of liquids in children. The aim of this study was to compare the 13C-ABT using NDIRS with scintigraphy as reference method for GE of liquids in children. Methods: 19 children (16 girls, 3 boys) aged between 4.2-15.1 years with dyspeptic symptoms were tested for gastric emptying disorders simultaneously performing the 13C-ABT and scintigraphy. After an overnight fast, a standardised liquid test milk meal doubly labelled with 50 or 100 mg 13C-acetate according to weight and 18.5 MBq 99mTechnetium was ingested. Breath samples were taken before the feeding, at 5 minutes intervals for the first 40 minutes and at 10 minutes intervals for the last 140 minutes after the feeding. Breath samples were analyzed using NDIRS and 13C-recovery was used to calculate values for breath test gastric half emptying time (t1/2-ABT) which is the time when 50 % of the cumulative recovery is reached (t1/2-ABT; higher value = slower GE), and gastric emptying coefficient (GEC-ABT) which is a mathematical index for GE (GEC-ABT; higher value = faster GE). Scintigraphic image acquisition began immediately after the eating and at 15 minutes intervals for the following 180 minutes after the feeding. The scintigraphic half-emptying time (t1/2-SCINTI) was determined which is the time at which 50 % of the radio-labeled material has left the stomach. A linear regression analysis was performed between t1/2-ABT, GEC-ABT and t1/2 -SCINTI. Results: We found a mean t1/2-ABT of 82 +/- 14 min (range 58-106 min), a mean GEC-ABT of 4.53 +/- 0.38 (range 3.81-5.19) and a mean t1/2-SCINTI of 62 +/- 21 min (range 27-99 min). The t1/2-ABT correlated significantly with the t1/2-SCINTI (t1/2-ABT=56.816+0.4*t1/2-SCINTI, r=0.604, p=0.006). The GEC-ABT also correlated significantly with the t1/2 -SCINTI (GEC-ABT=5.108-0.009*t1/2 -SCINTI, r=0.513, p=0.025). Conclusions: The 13C-ABT using NDIRS is a reliable, easy, non-invasive and non-radioactive procedure for measuring GE of liquids in dyspeptic children.
Title:
GASTRIC EMPTYING MEASUREMENTS OF LIQUIDS IN CHILDREN WITH THE 13C-ACETATE BREATH TEST: INFLUENCE OF AGE AND GENDER ON GASTRIC EMPTYING

Bruno Hauser 1, Jean De Schepper 1, Vicky Cavilers 2, Thierry Devreker 1, Silvia Salvatore 3, Yvan Vandenplas 1
1) Department of Paediatrics Universitair Ziekenhuis Brussel Kinderen, Brussels, Belgium 2) Department of Nuclear Medicine Universitair Ziekenhuis Brussel, Brussels, Belgium 3) Clinica Pediatrica Ospedale F.Del Ponte Universita dell’Insubria, Varese, Italy

Summary:
Objective: Scintigraphy is considered as the “gold standard” for measuring gastric emptying (GE). The 13C-acetate breath test (13C-ABT) offers an attractive alternative to measure GE of liquids as it is non-radioactive. There are limited data in the literature concerning the use of Non Dispersive Infrared Spectrometry (NDIRS) in the evaluation of GE of liquids in children. The aim of this study was to evaluate the effect of age and gender on GE of liquids in children. Methods: GE for liquids was tested in 70 healthy girls aged between 1.8 and 17.8 years and in 62 healthy boys aged between 1.4 and 17.7 years. After an overnight fast, a standardised liquid test milk meal labelled with 50 or 100 mg 13C-acetate according to weight was ingested. Breath samples were taken before the feeding, at 5 minutes intervals for the first 40 minutes and at 10 minutes intervals for the last 140 minutes after the feeding. Breath samples were analyzed using NDIRS and 13C-recovery was used to calculate values for the breath test gastric half emptying time which is the time when 50 % of the cumulative recovery is reached (t1/2-ABT; higher value = slower GE), and gastric emptying coefficient which is a mathematical index for GE (GEC-ABT; higher value = faster GE). Statistical analysis was performed with a t-test to evaluate the effect of gender on 1/T/2-ABT and GEC-ABT and with a linear regression analysis to evaluate the effect of age on 1/T/2-ABT and GEC-ABT. Results: We found a mean 1/T/2-ABT for girls of 83 +/- 12 min and for boys of 79 +/- 14 min (p=0.418), and a mean GEC-ABT for girls of 4.05 +/- 0.62 and for boys of 4.13 +/- 0.60 (p=0.352). We also showed a significant linear increase of GEC-ABT with increasing age in girls (GEC-ABT=3.142+0.098*age, p=0.0001) and boys (GEC-ABT=3.448+0.072*age, r=0.499, p=0.0001) but no significant linear decrease of 1/T/2-ABT with increasing age in girls (1/T/2-ABT=84.627-0.223*age, r=0.081, p=0.506) and boys (1/T/2-ABT=77.961+0.075*age, r=0.023, p=0.861). Conclusions: GE of liquids in healthy children measured with the 13C-ABT using NDIRS shows no difference in GE between girls and boys as measured with 1/T/2-ABT and GEC-ABT, and an acceleration of GE with advancing age as measured with GEC-ABT but not with 1/T/2-ABT.

P0117

Title:
GASTRIC EMPTYING MEASUREMENTS OF LIQUIDS IN CHILDREN WITH THE 13C-ACETATE BREATH TEST: INFLUENCE OF AGE AND GENDER ON GASTRIC EMPTYING

Bruno Hauser 1, Jean De Schepper 1, Vicky Cavilers 2, Thierry Devreker 1, Silvia Salvatore 3, Yvan Vandenplas 1
1) Department of Paediatrics Universitair Ziekenhuis Brussel Kinderen, Brussels, Belgium 2) Department of Nuclear Medicine Universitair Ziekenhuis Brussel, Brussels, Belgium 3) Clinica Pediatrica Ospedale F.Del Ponte Universita dell’Insubria, Varese, Italy

Summary:
Objective: Scintigraphy is considered as the “gold standard” for measuring gastric emptying (GE). The 13C-acetate breath test (13C-ABT) offers an attractive alternative to measure GE of liquids as it is non-radioactive. There are limited data in the literature concerning the use of Non Dispersive Infrared Spectrometry (NDIRS) in the evaluation of GE of liquids in children. The aim of this study was to evaluate the effect of age and gender on GE of liquids in children. Methods: GE for liquids was tested in 70 healthy girls aged between 1.8 and 17.8 years and in 62 healthy boys aged between 1.4 and 17.7 years. After an overnight fast, a standardised liquid test milk meal labelled with 50 or 100 mg 13C-acetate according to weight was ingested. Breath samples were taken before the feeding, at 5 minutes intervals for the first 40 minutes and at 10 minutes intervals for the last 140 minutes after the feeding. Breath samples were analyzed using NDIRS and 13C-recovery was used to calculate values for the breath test gastric half emptying time which is the time when 50 % of the cumulative recovery is reached (t1/2-ABT; higher value = slower GE), and gastric emptying coefficient which is a mathematical index for GE (GEC-ABT; higher value = faster GE). Statistical analysis was performed with a t-test to evaluate the effect of gender on 1/T/2-ABT and GEC-ABT and with a linear regression analysis to evaluate the effect of age on 1/T/2-ABT and GEC-ABT. Results: We found a mean t1/2-ABT for girls of 83 +/- 12 min and for boys of 79 +/- 14 min (p=0.418), and a mean GEC-ABT for girls of 4.05 +/- 0.62 and for boys of 4.13 +/- 0.60 (p=0.352). We also showed a significant linear increase of GEC-ABT with increasing age in girls (GEC-ABT=3.142+0.098*age, r=0.706, p=0.0001) and boys (GEC-ABT=3.448+0.072*age, r=0.499, p=0.0001) but no significant linear decrease of t1/2-ABT with increasing age in girls (t1/2-ABT=84.627-0.223*age, r=0.081, p=0.506) and boys (t1/2-ABT=77.961+0.075*age, r=0.023, p=0.861). Conclusions: GE of liquids in healthy children measured with the 13C-ABT using NDIRS shows no difference in GE between girls and boys as measured with t1/2-ABT and GEC-ABT, and an acceleration of GE with advancing age as measured with GEC-ABT but not with t1/2-ABT.
AGE AND GENDER ON GASTRIC EMPTYING

GASTRIC EMPTYING MEASUREMENTS OF SOLIDS IN CHILDREN WITH THE 13C-OCTANOIC ACID BREATH TEST: INFLUENCE OF AGE AND GENDER ON GASTRIC EMPTYING

Bruno Hauser 1, Jean De Schepper 1, Vicky Cavellers 2, Thierry Devreker 1, Silvia Salvatore 3, Yvan Vandenplas 1
1) Department of Paediatrics Universitair Ziekenhuis Brussel Kinderen, Brussels, Belgium 2) Department of Nuclear Medicine Universitair Ziekenhuis Brussel, Brussels, Belgium 3) Clinica Pediatrica Ospedale F. Del Ponte Universita dell’Insubria, Varese, Italy

Summary:
Objective: Scintigraphy is considered as the “gold standard” for measuring gastric emptying (GE). The 13C-octanoic acid breath test (13C-OBT) offers an attractive alternative to measure GE of solids as it is non-radioactive. There are limited data in the literature concerning the use of Non Dispersive Infrared Spectrometry (NDIRS) in the evaluation of GE of solids in children. The aim of this study was to compare the 13C-OBT using NDIRS with scintigraphy as reference method for GE of solids in children. Methods: 22 children (17 girls, 5 boys) aged between 1.5-15.0 years with dyspeptic symptoms were tested for gastric emptying disorders simultaneously performing the 13C-OBT and scintigraphy. After an overnight fast, a standardised pancake doubly labelled with 50 microliter 13C-octanoic acid and 18.5 MBq 99mTc technetium was ingested. Breath samples were taken before the feeding and at 15 minutes intervals for the following 240 minutes after the feeding. Breath samples were analyzed using NDIRS and 13C-recovery was used to calculate values for breath test gastric half emptying time which is the time when 50 % of the cumulative recovery is reached (t1/2-OBT; higher value = slower GE), and gastric emptying coefficient (GEC-OBT) which is a mathematical index for GE (GEC-OBT; higher value = faster GE). Scintigraphic image acquisition began immediately after the feeding and at 15 minutes intervals for the following 210 minutes after the feeding. The scintigraphic half-emptying time (t1/2-SCINTI) was determined which is the time at which 50 % of the radio-labelled material has left the stomach. A linear regression analysis was performed between t1/2-OBT, GEC-OBT and t1/2 -SCINTI. Results: We found a mean t1/2-OBT of 150 ± 37 min (range 92-222 min), a mean GEC-OBT of 2.86 ± 0.48 (range 2.19-3.72) and a mean t1/2-SCINTI of 104 ± 27 min (range 54-185 min). The t1/2-OBT correlated significantly with the t1/2-SCINTI (t1/2-OBT = 44.55 + 1.01* t1/2-SCINTI, r=0.74, p=0.001). The GEC-OBT also correlated significantly with t1/2 -SCINTI (GEC-OBT = 4.20 + 0.01* t1/2 -SCINTI, r=0.73, p=0.001). Conclusions: The 13C-OBT using NDIRS is a reliable, easy, non-invasive and non-radioactive procedure for measuring GE of solids in dyspeptic children.

P0119

Title:
GASTRIC EMPTYING MEASUREMENTS OF SOLIDS IN CHILDREN WITH THE 13C-OCTANOIC ACID BREATH TEST: COMPARISON WITH THE 99m TECHNETIUM RADIOSCINTIGRAPHY

Bruno Hauser 1, Jean De Schepper 1, Vicky Cavellers 2, Thierry Devreker 1, Silvia Salvatore 3, Yvan Vandenplas 1
1) Department of Paediatrics Universitair Ziekenhuis Brussel Kinderen, Brussels, Belgium 2) Department of Nuclear Medicine Universitair Ziekenhuis Brussel, Brussels, Belgium 3) Clinica Pediatrica Ospedale F. Del Ponte Universita dell’Insubria, Varese, Italy

Summary:
Objective: Scintigraphy is considered as the “gold standard” for measuring gastric emptying (GE). The 13C-octanoic acid breath test (13C-OBT) offers an attractive alternative to measure GE of solids as it is non-radioactive. There are limited data in the literature concerning the use of Non Dispersive Infrared Spectrometry (NDIRS) in the evaluation of GE of solids in children. The aim of this study was to compare the 13C-OBT using NDIRS with scintigraphy as reference method for GE of solids in children. Methods: 22 children (17 girls, 5 boys) aged between 1.5-15.0 years with dyspeptic symptoms were tested for gastric emptying disorders simultaneously performing the 13C-OBT and scintigraphy. After an overnight fast, a standardised pancake doubly labelled with 50 microliter 13C-octanoic acid and 18.5 MBq 99mTc technetium was ingested. Breath samples were taken before the feeding and at 15 minutes intervals for the following 240 minutes after the feeding. Breath samples were analyzed using NDIRS and 13C-recovery was used to calculate values for breath test gastric half emptying time (t1/2-OBT) which is the time when 50 % of the cumulative recovery is reached (t1/2-OBT; higher value = slower GE), and gastric emptying coefficient (GEC-OBT) which is a mathematical index for GE (GEC-OBT; higher value = faster GE). Statistical analysis was performed with a t-test to evaluate the effect of gender on t1/2-OBT and GEC-OBT and with a linear regression analysis to evaluate the effect of age on t1/2-OBT and GEC-OBT. Results: We found a mean t1/2-OBT for girls of 158 ± 42 min and for boys of 137 ± 31 min (p=0.004), and a mean GEC-OBT for girls of 2.87 ± 0.79 and for boys of 2.96 ± 0.58 (p= 0.476). We also showed a significant linear decrease of t1/2-OBT with increasing age in girls (t1/2-OBT = 192.008 – 3.296 * age, r=0.35, p=0.012) and boys (t1/2-OBT = 158.196 – 2.213 * age, r=0.278, p=0.040), and a significant linear increase of GEC-OBT with increasing age in girls (GEC-OBT = 2.006 + 0.084 * age, r=0.473, p=0.001) and boys (GEC-OBT = 2.291 + 0.069 * age, r=0.466, p=0.001). Conclusions: GE of solids in healthy children measured with the 13C-OBT using NDIRS shows a slower GE in girls in comparison with boys as measured with t1/2-OBT but not with GEC-OBT, and an acceleration of GE with advancing age in girls and boys as measured with t1/2-OBT and GEC-OBT.

P0120
Title: IS HELICOBACTER PYLORI INFECTION RESPONSIBLE FOR LACTOSE-MALABSORPTION?

Thierry Devreker 1, Bruno Hauser 1, Anieta Goossens 2, Ann Hoorens 2, Yvan Vandenplas 1

1) Department of Paediatrics Universitair Ziekenhuis Brussel Kinderen, Brussels, Belgium 2) Department of Anatomopathology Universitair Ziekenhuis Brussel, Brussels, Belgium

Summary:
Objective: Helicobacter pylori infections may cause duodenitis and partial duodenal villus atrophy and thus be responsible for a lactose-malabsorption. The aim of the study was to study the relationship between Helicobacter pylori infection and lactose-malabsorption in children. Methods: From september 2001 to september 2007, 47 children (24 girls, 23 boys) aged between 3 and 14 years (mean age 9 years), 10 being caucasians (C) and 37 being non-caucasians (NC) (african, north-african, turkish), were diagnosed with a Helicobacter pylori infection (positive culture and/or 2 other tests, 13 C-urea breath test, histology, rapid urease test) and a lactose-malabsorption (lactose breath test: expired hydrogen > 20 ppm above basal value). An eradication treatment for Helicobacter pylori with two antibiotics and one proton pump inhibitor was prescribed for 10 days. A control 13C-urea breath test (UBT) and lactose breath test (LBT) were performed 4 weeks after the eradication treatment had been stopped. The difference between the highest value of expired hydrogen after ingestion of lactose and the basal value of expired hydrogen before ingestion of lactose was calculated during the LBT (DELTA-H2 LBT). Duodenal biopsies were examined by light microscopy. Results: A control UBT and LBT were only performed in 37 patients (78.7 %, 8 C, 29 NC). UBT was normal in 34 patients (91.9 %, 8 C, 26 NC) and abnormal in 3 patients (8.1 %, 0 C, 3 NC). LBT was normal in 5 patients (13.5 %, 3 C, 2 NC) and abnormal in 32 patients (86.5 %, 5 C, 27 NC). In this last group there was a trends towards a decrease of DELTA-H2 LBT from 121 ppm before eradication to 106 ppm after eradication of Helicobacter pylori (p = 0.069). Anatomopathological examination of the duodenum was performed in 45 patients: it was normal in 31 patients (68.9 %, 7C, 24 NC), showed duodenitis in 12 patients (26.7 %, 2C, 10 NC) and partial villus atrophy in 2 patients (4.4 %, 1C, 1 NC). Conclusions: There is no clear causal relationship between Helicobacter pylori infection and lactose-malabsorption. The eradication of Helicobacter pylori results in normalisation of lactose-absorption only in a minority of patients. Nevertheless, there is a slight decrease of the lactose-malabsorption after eradication of Helicobacter pylori.

P0121

Title: CELIAC DISEASE IN CUBAN CHILDREN. Follow up

Carlos Castañeda 1, Mayelin Leyva 1, José Armando Galván 2, Bienvenido Hà 1, Elsa Garcia 1, María del Pilar Escobar 1

1) 1Section of Pediatric Gastroenterology, National Institute of Gastroenterology, Havana, Cuba 2) 2Genetic Engineering and Biotechnology Center, Havana, Cuba

Summary:
Introduction: Celiac disease (CD) was reported in Cuba almost 30 ys ago, although it is not frequently diagnosed in Caribbean countries. The aim was to describe the clinical and histological manifestations of CD, compared to the long-term initial indicators, after the gluten free diet. Methods: 50 patients were diagnosed with nationally produced kits for diagnostic serology tests: antigliadin IgG and IgA (AGA) (Au Bio Dot antigliadin kit) and antititransglutaminase IgA and IgG (Heber FastLine tTG) anti assays and jejune biopsy. The clinical form was evaluated using a clinical questioner. Was tested for DQ2 and DQ8 HLA. A long-term control (minimal of 4 ys) was carried out in all patients after the diagnosis, with the evaluation of the nutritional state prior to the diet and the evolutionary control, and changes of the jejunum mucosa, with a second biopsy. Results: The diagnosis predominant between 1 and 4 ys (74%); 18% diagnosed at age 5 or more and 8% before the 1 y; the majority were diagnosed in early infancy; 56% were male, whites (74%), mixed race (24%) and black (2%). The principal clinical symptoms were chronic diarrhea and abdominal distension. 70% present typical symptoms. Herpetiform Dermatitis (2%). 10% did not improve the initial symptoms despite the gluten free diet, 24% maintained abdominal distension, 6% continued to have a low height, and 4% chronic diarrhea and 42% asymptomatic. On a long-term basis, 30% remained underweight and 70% passed of normal weight or more. 88% AGA negative with the gluten free diet in the long-term, 22 was tested for HLA DQ2 y DQ8 HLA. A long-term control (minimal of 4 ys) was carried out in all patients after the diagnosis, with the evaluation of the nutritional state prior to the diet and the evolutionary control, and changes of the jejunum mucosa, with a second biopsy. Results: The diagnosis predominant between 1 and 4 ys (74%); 18% diagnosed at age 5 or more and 8% before the 1 y; the majority were diagnosed in early infancy; 56% were male, whites (74%), mixed race (24%) and black (2%). The principal clinical symptoms were chronic diarrhea and abdominal distension. 70% present typical symptoms. Herpetiform Dermatitis (2%). 10% did not improve the initial symptoms despite the gluten free diet, 24% maintained abdominal distension, 6% continued to have a low height, and 4% chronic diarrhea and 42% asymptomatic. On a long-term basis, 30% remained underweight and 70% passed of normal weight or more. 88% AGA negative with the gluten free diet in the long-term, 22 was tested for HLA DQ2 y DQ8: 86.3% DQA1* 0501 and DQB1*02 positive and 1 patients for DQ8. Initially present marked atrophy (64%), but in the long-term study 30% normalized the atrophy villous and number of intraepithelial lymphocytes despite the diet. Conclusions: Our study show clinical manifestations and presentation forms in Cuban celiac patients similar to the diagnostic criteria described by ESPGHAN. Attention is called on the importance of the diagnosis of CD in the face of chronic diarrhea due to causes not précised in the Caribbean area, where the diseases is usually not diagnosed and the transcendence of the national production of the serology tests which are of utility for the diagnosis and evolutionary control. This is also the case with the value of the long-term control to determine the state of the disease: nutritional and histological recovery and the relation with the compliance of the diet.
Proctorrhagia as a first sign of a Primitive Neuroectodermis Tumour / Ewing’s Sarcoma of the Rectum

Carlos O Muller 1, Patricia Dvorkin 1, Ricardo Drut 2, Juan C Vogel 3, Adriana Marron 4, Diego Amaral 5
1) Hospital Durand, Buenos Aires, Argentina 2) Hospital Sor Ludovica, La Plata, Argentina 3) Hospital San Martin, La Plata, Argentina 4) Bio Lab, La Plata, Argentina 5) Hospital Elizalde, Buenos Aires, Argentina

Summary:
Purpose: The present paper aims at reporting the existence of a site that goes unmentioned in the revised medical bibliography for the primitive neuroectodermic tumor (PNET) / Ewing’s Sarcoma (ES). The histopathological, immunohistochemical and molecular genetics studies evidenced the presence of PNET/ES. Presentation: A seventeen-year old boy consulted a physician in April 2001 as he had been suffering from an unpainful proctorrhagia for the last three months. A fibrocolonoscopy was conducted and an 8 x 4 cm lobular growth was found in the rectal inner wall, at a 2 cm distance from the sphincter. The histopathological study showed an abnormal cell proliferation of blue, small and round cells, which through an immunohistochemistry turned out to be TNEP/SE. A new biopsy was later conducted which yielded the same results that had been confirmed before plus a focal positivity for CD99. The patient consulted a physician 5 months later since he had severe proctorrhagia, anaemia and hemodynamic decompensation. In addition, he had spontaneously discharged an irregular rounded formation from the anus. Such material evidenced the same results previously unveiled and the molecular genetic examination by RT-PCR evidenced a t(11:22)(q24:q12) with EWS/FLI1 fusion, this symptom being typically found in TNEP/SE. Studies were made and a chemotherapy treatment began according to the CCG protocol (Children Cancer Group) for PNET/ES. Thus, the tumor grew smaller in size following a 9 week-chemotherapy treatment. His parents never accepted the possibility of having a surgery performed. Even though the patient completed the 54-week chemotherapy treatment, the tumor was found to have grown significantly and his general clinical condition was deteriorating. Thus, he died in December 2004. Conclusion: Final diagnosis requires evidencing the existence of membrane positivity for CD99 marker and the confirmation of chimeric transcripts by EWS-Fli1 gene fusion (or any other member of the Ets family) in the molecular genetic examination. In the medical bibliography available, the tumoral mass discharge from the anus, with partial autoimputation is unprecedented for this type of rectal tumor. Even in pediatric patients, proctorrhagia should be evaluated thoroughly by the specialist.

P0123

Title: Analysis of the morphology and density of the overall population of the myenteric neurons of the duodenum of some rats (Rattus norvegicus) supplemented with vitamin E during 120 days of experimental treatment.

João Emanuel Granato 1, Carlos Felipe Pasquini de Paule 1, Eduardo Henrique Button Perin 1, André Gustavo Santos Pereira 2, Jacqueline Nellisis Zanoni 1
1) UEM- Universidade Estadual de Maringá, Maringá, Brazil 2) UNOESTE– Universidade do Oeste Paulista, Presidente Prudente, Brazil

Summary:
The ageing provokes changes in the morphology and density of neurons of enteric nerve system, influencing the function of gastrointestinal tract. The percentage of loss of myenteric neurons occurs in a different way for each region from gastrointestinal tract, it maintains constant in a same region. The death of the myenteric neurons in the small intestine of rats, attribute to the age, it is connected with an increase of free radicals that comes from the oxidative stress. The therapy with vitamin E, a potent antioxidant, has been promising to neutralize the effects of free radicals accumulated during the process of ageing. The objective of this work was to evaluate the effect of the supplementation with vitamin E on the morphology and density of the myenteric neurons of the duodenum of rats during 120 days of experimental treatment. Ten albino rats, with 90 days old, were used and divided in two groups. Control group doesn’t treated (C), and treated group with vitamin E (CE). The animals CE were treated during 120 days with vitamin E (1g/Kg/day). After 120 days the duodenum of five rats of each group were collected and they were dissected under stereomicroscopy to obtain whole-mount, after that it was stained according to the technique of Giemsa (Barbosa, 1978), that allowed to evaluate in each duodenum the neuronal density in an area of 10,99 mm2 and also measure the cellular body area of 500 neurons of each group. Our results revealed that the treated rats with vitamin E presented a higher neuronal density (p<0.05) when compared with that of the control rats. There was no significative difference between the areas of the cellular bodies of the neurons of the two experimental groups. Our results allowed to conclude that the supplementation with vitamin E was efficient, preserving in 21.4% (p<0.05) the neuronal density of the group (CE) in relation to those observed in the animals of the group (C). Key-words: vitamin E, myenteric neurons, duodenum.

P0124

Title: Chromoendoscopy improves detection of adenomatous lesions in the proximal colon.

Martin Zavadinack Netto 1, Carlos Felipe Pasquini de Paule 1, Mariana Paula Sanchez Zanotti 1, Tallita dos Santos Souza 1
1) UEM- Universidade Estadual de Maringá, Maringá, Brazil
Summary:
Objective: Small adenomas may be missed during colonoscopy, but chromoscopy has been reported to enhance detection. The aim of this study was to determine the effect of cecum dye-spray on adenoma detection during routine colonoscopy. Methods: Consecutive outpatients undergoing routine colonoscopy had their cecum and ascending colon examined before and after chromoscopy with 0.1% methylene blue. All lesions detected before or after staining were removed. Results: Five hundred patients were examined during the study (306 women, 184 men; average age was 57.5 years); indications included constipation, abdominal pain, routine check-up, bleeding, diarrhoea and others. Before staining, 48 lesions were found in 39 patients (7.8%). After staining the cecum and ascending colon, 67 new adenomas were found in 57 patients (22 had one or more adenomas before staining). Staining enhanced the number of adenomas in the cecum and ascending colon from 7.8% to 14.8% and nine patients (4.6%) turned out to have three or more lesions which is considered important on adenoma-cancer sequence. Histology showed tubular adenomas, with less than 5mm, with low grade dysplasia in all cases. Conclusions: Chromoscopy improves the total number of adenomas detected in the cecum and ascending colon and patients with multiple adenomas, but long-term outcomes should be studied do determine the clinical value of these findings.

P0125

Title:
CELIAC DISEASE IN PEDIATRIC PATIENTS WITH TYPE 1 DIABETES

Magaly Rodriguez 1, Neyda Landaeta 1, Ana Fernandez 2, Edwin Ross 1, Gisela Merino 1, Carmen E. Lopez 1
1) Hospital J. M. de los Rios, Caracas, Venezuela 2) Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela

Summary:
To determine which children with type 1 diabetes fulfilled the requirements for the diagnosis of Celiac disease. Methods: 118 pediatric patients from the Endocrinology service of the Hospital “JM de los Ríos” having type I diabetes. We carried out an interrogation, searching the presence of signs or symptoms, and screening for the antibody tissue transglutaminase and endoscopy taking several small bowel biopsies, to that they displayed positive test Results: 118 patients, there were 61 girls, mean age 12.06 ± 4.1 years and a range 3.4 a to 18 years. At time of the study we did not find evidence signs or symptoms that corresponded with Celiac disease, 4/118 were positive transglutaminase antibody test and patients were carried out endoscopies, and 2 had definite biopsy (Marsh score 3a and 3b) evidence of celiac disease. The diabetic patients type 1 can have asintomatic Celiac Disease being able to be silent or latent, for that reason these children should be screened for Celiac Disease Conclusion: We found 2 new cases of Celiac disease asintomatic in type 1 diabetic children (1.69%) of screened, similar to reported at world level. We suggest screening antibodies to susceptible group of presenting this disease in this country and screening for Celiac disease in our population to know the prevalence of this disorder in Venezuela. Key words: Celiac disease, Antitransglutaminase, Children, type 1 diabetic

P0126

Title:
SEROLOGICAL TESTS FOR CELIAC DISEASE IN RELATIVES OF FIRST DEGREE OF PEDIATRICS PATIENTS WITH CELIAC DISEASE

Magaly Rodríguez 1, Neyda Landaeta 1, Ana Fernández 2, Zulitza Pimentel 2, Marco Medina 1, Carmen Esther Lopez 1
1) Hospital de Niños “J. M. de los Ríos”, Caracas, Venezuela 2) Instituto Venezolano de Investigaciones Científicas, Caracas, Venezuela

Summary:
Objective: To determine the presence of new cases about Disease Celiac by means serological tests in the relatives of first degree of patients with diagnose this pathology.Materials and methods: 14 relatives of first degree in 7 patients with diagnosis of Celiac Disease studied, to which determine Anti-tissue transglutaminase IgA, Anti-endomysium IgA and Anti-gliadin IgG and IgA. Results: 14 relatives with an average age of 35.5 years (range: 15 to 51 years), 5/14 (35.7%) were positive for Anti-tissue transglutaminase IgA, Anti-endomysium IgA 4/14(28.5%), Anti-gliadin IgA1 /14(7.14%) and for Anti-gliadin IgG 0 /14. Of the positive relatives who presented positive screening 4/5 (80%) presented signs or symptoms that could be associated with Celiac Disease, such as: diarrhea, abdominal distension and pain; 1/5 (20%) of patients are asymptomatic. Conclusion: 5 cases results positive tests serological with Celiac Disease are reported in the relatives of patients known with this pathology, we considered that studies of investigation of the relatives of first degree must be made to determine the incidence of this one, in this group of risk. KEY WORDS: Celiac Disease, Relatives, Anti-tissue transglutaminase IgA, Anti-endomysium , Anti-gliadin.

P0127

Title:
NOROVIRUS INFECTION AMONG SPANISH CHILDREN WITH SEVERE ACUTE GASTROENTERITIS
P0128

Title: PREVALENCE OF SILENT CELIAC DISEASE IN SCHOOL-AGED SPANISH CHILDREN

Carolina Gutiérrez Junquera 1, Elena Balmaseda 1, Carmen Escudero 1, Ester Gil 1, Jesús Ontañón 2, Ramón Rada 2
1) Dept of Pediatrics. Complejo Hospitalario Universitario, Albacete, Spain 2) Dept. of Immunology. Complejo Hospitalario Universitario, Albacete, Spain

Summary:
Objective: Studies concerning the prevalence of viral agents causing gastroenteritis in hospitalized children are convenient to evaluate the impact of the rotavirus vaccine. The importance of norovirus as a cause of gastroenteritis outbreaks is well documented; however, the role of norovirus in hospitalized children is not so well established. The aim of this study was to determine the prevalence and clinical characteristics of the diverse virus in children hospitalized with acute gastroenteritis, with special emphasis in norovirus and rotavirus genotypes. Methods: Prospective study since January 2005 to April 2007 of children < 5 years hospitalized with acute gastroenteritis in a university hospital in the southeast of Spain. Demographic and clinical data were collected. A stool sample from each child was screened for enteropathogenic bacteria agents; and tested by reverse transcription (RT)-PCR for rotavirus, rotavirus genotypes, astrovirus, norovirus and by immunochromatographic method for enteric adenoviruses. Results: 281 children were enrolled in the study. A total of 190 (67.6%) samples tested positive for virus; rotavirus was the predominant virus being present in 156 (55.5%) samples and as the only agent in 139 (49.5%). The most predominant rotavirus G type was G9 (51.9%) followed by G3 (19.8%) and G1 (16%). Astrovirus RNA was present in 8 samples (0.28%) and adeno virus antigen in 5 cases (0.018%). Norovirus was the second most frequent virus, detected in 36 samples (12.8%), in 17 (47.2%) as a mixed infection. Norovirus infection was nosocomially acquired in 25.7% of diarrheal episodes and was more prevalent in autumn and winter. Norovirus gastroenteritis affected predominantly children < 1 year of age (63%) and vomiting was the most frequent symptom (72.2%). Fever was present in only 44.4% of cases and three children suffered nonfebrile seizures. Conclusions: Norovirus is a frequent cause of acute sporadic gastroenteritis requiring hospitalization in children < 5 years of age representing the second viral etiologic agent after rotavirus. Nosocomial spread of norovirus is the source of infection in 25% of cases. Rapid immunochromatographic methods for detection of norovirus recently developed may be useful in the clinical setting to better characterization of incidence and clinical aspects of norovirus infection.

P0129

Title: Effects of sulfated carbohydrates on the expression level of defence genes in colon epithelial cell lines

Angela Riedel 1, Marcus Renner 1, Caroline End 1, Annemarie Poustka 1, Jan Mollenhauer 2
1) Division of Molecular Genome Analysis, German Cancer Research Center, Heidelberg, Germany 2) Department for Molecular Oncology, Univer-
Summary:

Objectives: Carrageenan is commonly used as thickener, stabilizer and texturizer in human dietary products. Its use, however, is controversially discussed, because it causes – similar to dextran sulfate sodium (DSS) - inflammation, colonic ulcerations and colorectal cancer in animal models. In general, both high and low molecular weight variants exert pathophysiological effects. However, the low molecular weight variants smaller than 100 kDa commonly are considered to have a greater pathophysiologic potential. Here, we aimed at the identification of molecular changes induced by carrageenan and its structural analogue DSS in colon epithelial cells.

Methods: Mice were treated with 2.5% and 5.0% DSS in drinking water and the expression levels for the epithelial protection factor Dmbt1 were determined by semi-quantitative Northern blot analyses. Colon epithelial cell lines were incubated with the poly-sulfated agents and the responsiveness was analysed by monitoring DMBT1 and IL-8 expression levels. In addition, time-course studies were performed. Results: We observed a concentration-dependent upregulation of Dmbt1 in the colon of DSS-treated mice of up to 2.5-fold at the highest concentration. Out of four colon epithelial cell lines, one displayed a similar response pattern as observed in vivo. DMBT1 and IL-8 were upregulated in a concentration dependent manner with strongest response rates observed at 24h of treatment. Both high and low molecular weight variants of DSS and carrageenan resulted in upregulation of the two damage response genes. Remarkably, however, high molecular weight variants elicited a stronger upregulation than low molecular weight variants.

Conclusions: DMBT1 and IL-8 are responsive to the potentially harmful nutritional additive carrageenan and its structural analogue DSS in vitro. Through the isolation of the responsive promoter elements, one possibly can make use out of this for the construction of biosensors for monitoring nutritional compounds.

P0130

Title: Setup and use of a novel system for serial analyses of candidate genes for gastrointestinal diseases

Stephanie Blaich 1, Rainer Wittig 1, Melanie Hudler 1, Stefan Lyer 1, Annemarie Poustka 1, Jan Mollenhauer 2
1) Division of Molecular Genome Analysis, German Cancer Research Center, Heidelberg, Germany 2) Department of Molecular Oncology, University of Southern Denmark, Odense, Denmark

Summary:

Objective: Genomic and transcriptomic approaches have delivered a large number of disease candidate genes, including genes associated with inflammatory bowel disease as well as colorectal cancer. In order to narrow down the group of genes to be analysed in vivo, an initial characterisation and prioritisation of the candidate genes by in vitro experiments is required. We have developed a recombination-based two-step technology for the targeted integration of inducible cDNAs or miRNAs for functional assays in different cellular backgrounds.

Methods: A panel of various cell lines was stably transfected with a vector carrying a sequence for site-specific recombination resulting in acceptor cells. In a second step, an expression vector carrying the reporter gene coding for hCRed was inserted via recombination in order to determine the expression characteristics of each clone by FACS-analysis. A set of 80 selected genes including candidates for gastrointestinal diseases was PCR-cloned and stably transfected into operative acceptor clones. The resulting target cells were analysed in a primary scan, monitoring the effect of the candidate proteins on cell viability.

Results: We generated a broad panel of acceptor cell lines of different origin including intestinal epithelial cells which could be successfully utilised for targeted integration and expression of genes or RNAi constructs. We established a prototype library using one of these acceptor cell lines, which consists of 80 stable recombinants each expressing an individual candidate gene. An initial screen delivered a set of six novel genes strongly affecting cell viability. Conclusion: This study demonstrates the functionality of the technology in various cellular backgrounds. By creating a permanent resource in the form of cell libraries this strategy offers an elegant solution for functional screens of candidate genes relevant for gastrointestinal and other diseases.

P0131

Title: The mucosal defence protein DMBT1 functions as pattern recognition receptor

Caroline End 1, Floris Bikker 2, Marcus Renner 1, Antoon JM Ligtenberg 2, Annemarie Poustka 1, Jan Mollenhauer 3
1) Division of Molecular Genome Analysis, German Cancer Research Center, Heidelberg, Germany 2) Department of Dental Basic Sciences, Academic Center for Dentistry Amsterdam, Amsterdam, The Netherlands 3) Department of Molecular Oncology, University of Southern Denmark, Odense, Denmark

Summary:

Objectives: Impaired mucosal defence plays an important role in the pathogenesis of inflammatory bowel disease (IBD). The mucosal glycoprotein DMBT1 is a soluble scavenger receptor cysteine-rich protein with a broad-bacteria binding activity. It is mainly expressed in the human gastrointestinal tract and it has been recently linked to the pathogenesis of IBD. DMBT1 was shown to be strongly up-regulated in the inflamed intestinal...
mucosa of Crohn’s disease (CD) patients. In vitro studies revealed that DMBT1 suppresses LPS-induced TLR4-mediated NF-κB-activation and cytokine secretion, as well as the cytovasion of Salmonella enterica in intestinal epithelial cells. In a case-control study we identified a genetic deletion polymorphism of DMBT1 that is significantly associated with the development of CD. Furthermore, we found that DMBT1 knock-out mice are more susceptible to dextran sulfate (DSS)-induced colitis. In this study we aimed at getting insights into the molecular basis of its function in mucosal protection and of its broad bacteria binding activities. Methods: We studied effects of DMBT1 on DSS- and carrageenan-mediated cytotoxicity using cell-based assays. Competitive binding assays and ELISAs were used to determine its binding specificities. Dose-response relationships were studied in Dmbt1−/− and Dmbt1+/+ mice utilizing the DSS-induced colitis model. Furthermore, bacteria binding studies were performed with DMBT1 variants. Results: DMBT1 interacts with DSS and carrageenan, but does not reduce their cytotoxicity in vitro. DSS and carrageenan compete for DMBT1-mediated bacterial aggregation via interaction with its bacterial recognition motif. Competition- and ELISA-studies identify poly-sulfated and poly-phosphorylated structures as ligands for this recognition motif, such as heparan sulfate, LPS, and lipoteichoic acid. An increased DSS-dose overcomes Dmbt1-mediated mucosal protection in vivo. The bacterial binding capacity of the deleted DMBT1 variant is impaired. Conclusions: DMBT1 functions as pattern recognition molecule for poly-sulfated and poly-phosphorylated ligands, which provides a molecular basis for its broad bacteria binding specificity and its inhibitory effects on LPS-induced TLR4-mediated NF-κB-activation. Competitive interactions between DMBT1, lumenal bacteria, and nutritional factors with similar molecular patterns may alter mucosal homeostasis in an unfavorable manner, which could play a role for CD.

P0132

Title: Nutritional status and DIOS in patients with Cystic Fibrosis and Meconium Ileus: A Cohort Study.

C van der Feen 1, JW Woestenenk 1, RHJ Houwen 1, HJP van der Doef 1
1) University Medical Center Utrecht, Utrecht, the Netherlands

Summary:

Objectives: Currently, it is unclear whether meconium ileus (MI) at birth in patients with Cystic Fibrosis (CF) has consequences for nutritional status, total fat absorption and the development of distal intestinal obstruction syndrome (DIOS) later on. Therefore the aims of the study were to determine if these factors were associated with MI in Dutch CF patients. Methods: In a retrospective cohort study of 230 pediatric CF patients, nutritional status (z-score weight for height, height, BMI), energy and fat intake, total fat absorption and DIOS, defined as an acute complete or incomplete obstruction of the ileo-caecum, were compared between patients with and without MI using logistic regression. Results: Thirty-one of 230 patients (13%) had a history of meconium ileus, of which 25 (80%) were treated surgically and 6 (20%) were treated by enema. As expected, age at diagnosis of CF is lower in patients with MI than in patients without MI (0.11 vs. 1.47 yrs; p<0.001). A strong correlation between MI and DIOS was observed (39% of MI patients developed DIOS vs. 2% of the non MI patients; p<0.001; OR 30.8). In addition, in the MI patients, who were all pancreatic insufficient, total fat absorption was significantly lower when compared to non MI pancreatic insufficient patients (85% vs. 89%, p=0.03; OR 0.010). Also a slightly higher energy intake (113% vs. 105% RDI; p=0.168) with similar fat intake (35% vs. 35% of calorie; p=0.838) in patients with MI was found. Despite the lower fat absorption, weight for height (-0.29 vs. -0.25; p=0.847), height (-0.59 vs. -0.72; p=0.518) and BMI (-0.36 vs. -0.36; p=0.985) between patients with and without MI showed no significant differences. Conclusion: DIOS is highly associated with meconium ileus suggesting a common defect causing severe intestinal obstruction in the ileo-caecum. Furthermore, nutritional status of patients with and without meconium ileus was not different. However a lower total fat absorption was found in patients with meconium ileus.

P0133

Title: Coeliac disease and Eosinophilic oesophagitis: Yet another association ?

Connell Leslie 1, Catherine F Mews 2, Adrian Charles 1, Madhur Ravikumara 2
1) Department of Anatomic Pathology, Princess Margaret Hospital for Children, Subiaco, Perth, WA, Australia 2) Department of Gastroenterology, Princess Margaret Hospital for Children, Subiaco, Perth, WA, Australia

Summary:

Background and Aim: Eosinophilic oesophagitis (EO) and coeliac disease (CD) are distinct disorders with specific clinico-pathological characteristics. Recent reports suggested the association between the two. In Western Australia, CD had been increasing over the last decade, with a documented prevalence of 0.89/10 000 children in 2004 (1). The aim of this study was to estimate the prevalence of EE among children with CD diagnosed in our institution in the last 8 years. Methods: Princess Margaret Hospital in Western Australia is the state’s only tertiary paediatric referral centre and the Department of anatomic pathology handles all the paediatric gastrointestinal biopsy specimens from the State. From the departmental database, all children who had histological confirmation of CD, between January 2000 to November 2007, were identified. Among this cohort, those who also had concurrent oesophageal biopsies reported as eosinophilic oesophagitis were noted. The slides of all the cases with abnormal histology were reviewed. Case notes were reviewed for demographic details, symptoms, endoscopic findings, histological findings and the follow-up data. Results:
Among the total of 250 children diagnosed as CD during the study period, 121 had concurrent oesophageal biopsies. Ten children were confirmed to have eosinophilic oesophagitis, 6 males and 4 females. Only one, who had history of food bolus obstruction, had symptoms suggestive of EE. Seven children had endoscopic findings suggestive of eosinophilic oesophagitis. Median eosinophil count in oesophageal biopsies were 52 (range 23-82). Two children had follow-up endoscopies. Both demonstrated recovery of duodenal mucosa on gluten free diet but no change in eosinophilic oesophagitis. Conclusion: The prevalence of EE is at least 4% in our cohort of CD children, but this is likely to be an underestimation since only 121 out of 250 children had concurrent oesophageal biopsies. The majority had no symptoms suggestive of EE. Diagnosis of EE should be considered in children with CD and vice versa. The study highlights the importance of obtaining both oesophageal and duodenal biopsies in children undergoing endoscopy for suspected coeliac disease or eosinophilic oesophagitis, irrespective of the endoscopic findings. 1. Cherian, S.; Smith, N.M.; and Forbes, D.A. Rapidly increasing prevalence of eosinophilic oesophagitis in Western Australia, Archive of Illnesses in Childhood 2006; 91:1000-1004.

P0135

Title:
Life-Threatening Haemophagocytic Lymphohistiocytosis and Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) Syndrome associated with Sulphasalazine Therapy in Pediatric Inflammatory Bowel Disease

Chee Y Ooi 1,  Seamus Hussey 1,  Mary Zachos 1
1) Division of Gastroenterology, Hepatology and Nutrition, The Hospital for Sick Children, Toronto, Canada

Summary:
Background: Sulphasalazine (SASP) is an established first-line therapy for paediatric inflammatory bowel disease (IBD). Dose-dependent adverse effects are not uncommon. We here highlight two rare, potentially life-threatening complications of SASP occurring within weeks of starting therapy - haemophagocytic lymphohistiocytosis (HLH) and the drug rash with eosinophilia and systemic symptoms syndrome (DRESS). Case 1: A 14-year-old boy newly diagnosed with ulcerative colitis was started on SASP. He presented 3 weeks later with a high fever, diffuse rash, lymphadenopathy, conjunctivitis and hepatosplenomegaly. SASP was stopped but within days of admission he had developed bloody diarrhea. He also had significant liver dysfunction and abnormalities consistent with tubulointerstitial nephritis. He was treated with high dose methylprednisolone and the rash, bloody diarrhea and laboratory abnormalities subsequently resolved. Discussion: HLH and DRESS syndrome are rare complications of SASP therapy but cause serious clinical instability and potentially life-threatening, multi-organ dysfunction. Clinicians must remain vigilant for such early complica-
tions of SASP. Prompt withdrawal of SASP, supportive therapy and use of appropriate immune-suppressants or -modulators should be considered early in suspected cases.

<table>
<thead>
<tr>
<th>Laboratory findings Case 1 - HLH</th>
<th>Case 2 - DRESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>White cell count (x 10⁹/L)</td>
<td>45.7 28.9</td>
</tr>
<tr>
<td>Atypical lymphocytosis (x 10⁹/L)</td>
<td>3.29 2.3</td>
</tr>
<tr>
<td>Alanine aminotransferase (U/L)</td>
<td>3513 930</td>
</tr>
<tr>
<td>International normalized ratio</td>
<td>4.9 1.3</td>
</tr>
</tbody>
</table>

P0136

**Title:**
GROWTH IN CHILDREN TREATED BY COW’S MILK PROTEIN ALLERGY (CMPA)

María Luisa Deforel 1, Susana Dozo 1, Christian G. Boggio Marzet 1

1) Pediatric Gastroenterology and Nutrition Section. Pediatrics Division. General Hospital “Dr. Ignacio Pirovano”, Buenos Aires, Argentina

**Summary:**
Introduction: Cow’s milk protein allergy (CMPA) is a little known entity in the pediatric practice that affects 5% of infants under one year of age in the general population. Treatment consists in complete exclusion of milk protein from the diet. Physical growth is a key factor involved during treatment.

**Objective:** To evaluate the physical growth of children with CMPA with diet therapy instituted in relation to normal children with same sex, age and nutritional status at the beginning of the follow-up period.

**Methods:** Sample: children with clinical and biochemical diagnosis of CMPA (n=14) paired with children of same sex, age and percentile channel of weight for age at baseline. Design: Prospective longitudinal study with related historical control sample. After the diagnosis of CMPA removal of the allergic protein with prescription of extensive protein hydrolysates formulas was indicated as a diet treatment. In those with breastfeeding, cow’s milk from the mother’s diet was excluded. The physical growth was assessed by z-score difference of weight and height in the follow-up period.

**Results:** 14 children with CMPA (8 women, 6 men), x age: 11 months, had a follow-up period of 8±4 months (range 4 to 16 months) for case and control matched by age, sex and nutritional status. (initial z-weight: -0.59 CMPA and -0.29 control, T test, p=0.57). Period mean differences of z-weight were negative for both samples: CMPA -0.38±0.15 and control -0.19±0.08, with greater variation and dispersion of values among children with CMPA, although not statistically different when they were analyzed paired to its control (Wilcoxon test, p=0.80). Changes to z-height of the two related samples showed no statistical significance (Paired T Test p=0.39) being the variations positive for CMPA x=0.065±0.11 and negative for controls x= -0.12 ±0.069. The sex was not associated with the growth in weight and length/height of the sample’s children. Conclusions: Since establishment of exclusion diet therapy, weight and height growth of children with CMPA did not differ significantly from normal children of the same age and nutritional status in baseline for an average period of 8±4 months in terms of z-weight and length/height scores variations to related samples.

P0137

**Title:**
PREVALENCE OF REGURGITATION IN HEALTHY INFANTS 0 TO 12 MONTHS OF AGE.

Christian G. Boggio Marzet 1, Graciela A. Rodriguez 1, Noemí S. Petruccelli 1, María Teresa Basaldúa 1

1) Pediatric Gastroenterology and Nutrition Section. Neonatology Section. Pediatrics Division. Hospital General “Dr. Ignacio Pirovano”, Buenos Aires, Argentina

**Summary:**
Introduction: Infant regurgitation (RG) represents a common consultation for the pediatrician who usually attribute a sub or overdiagnosis to the phenomenon difficulting to prove the real prevalence of the problem which, in our country, is unknown. Objective: To determine the prevalence of RG in healthy infants from 0 to 12 months of age in the Capital Federal and find an association between risk of the presence of RG with the type of food and sleeping position.

**Methods:** Population: healthy infants of both gender from 0 to 12 months of age. Place: outpatients of Healthy Child Office Pirovano Hospital. Periods of study: 1-6-06 to 1-6-07 and 31-7-06 to 31-7-07. Study Design: Prospective cross-sectional population survey.

**Diagnostic Criteria:** Parents of children responded to a health digestive survey previously validated and revalidated in our country through pilot study. Those who met criteria of RG by Rome III were selected. Statistical analysis: Meanings statistics were analysed using Chi² test with Yates correction. Asymptotic confidence intervals with corrected continuity for prevalences and measures of association and effect between different variables (OR and RR) were analyzed. Results: Of a total of 200 patients surveyed 100% answered the survey. Mean age was 4.84 ± SD 3.28 months (range 0.13-11.9).
Sex distribution: Men (57.5%), 48.5% (95% CI: 44.5-58.4) presented RG, without statistically significant differences by gender. The smallest age group (0 to 4 months) showed higher prevalence of RG (33.6%, p=0.003) as well as exclusively breast fed (54.6%, p=0.002). It was observed increased risk of RG in patients with hiccups (RR 2.33, OR 2.80, p=0.008) and exclusively breast fed (RR 1.30, OR 1.68, p=0.002) and sleeping position was not found as a risk factor for RG. Conclusions: In a population of healthy infants prevalence of RG proved to be significant, and the age group from 0 to 4 months the most affected, showing that age is inversely proportional associated to the prevalence of RG. The risk of increased RG was observed in patients who presented hiccups and exclusively breast fed. The present study reports for the first time the prevalence of RG in healthy infants in the City of Buenos Aires.

P0138

Title: Comparison between thickness of rectal biopsies taken by Noblett’s forceps versus those done by Scheye's forceps.

Florence Campeotto 1, Jean Patrick Barbet 2, Nicolas Kalach 1, Pierre Arhan 1, Sylvie Beaudoin 3, Christophe Dupont 1
1) Service de Neonatologie. Hôpital St Vincent de Paul-APHP, Paris, France 2) Service Anatomopathologie. Hôpital St Vincent de Paul-APHP, Paris, France 3) Service de Chirurgie Pédiatrique. Hôpital St Vincent de Paul-APHP, Paris, France

Summary:
Aim of the study: the biopsies by suction of the rectal mucosa done in outpatients clinic allow to characterize abnormalities of the rectal wall innervation permitting for example to diagnose aganglionosis. The Noblett’s forceps allowing to sample specimens of the rectal mucosa are less anal less used because of the risk of transmitted infection. Conversely the Scheye’s forceps (Medtronic®) made of a disposable part replaced after use in set patient is in accordance with the current security instructions. Moreover the cutting device is new at each use and so perfectly efficient. In the present study the thicknesses of rectal biopsy specimen taken with Scheye’s forceps were compared with those done with Noblett’s forceps. Patients and methods: this comparative and retrospective study was performed, in a first population of 13 girls and 20 boys aged 13 ± 30 months who had a biopsy taken with Noblett’s forceps for suspected aganglionosis in 2001-2004. Another population of 19 girls and 21 boys aged 8 ± 19 months was too investigated for suspected aganglionosis (2005-2007) and had a biopsy taken with Scheye’s forceps. The total thickness of specimen and the thickness of the submucosa were microscopically measured by a pathologist in blind and statistically compared. Results: 73 biopsies were analysed. The total thickness of the specimen of rectal mucosa obtained with Scheye’s forceps was significantly higher than these of biopsies taken with Noblett’s forceps (1.74 mm ± 0.4 vs 0.67 mm ± 0.2; p<0.0001). The thickness of the submucosas was too significantly more elevated for the biopsies taken with Scheye’s forceps (1.12 mm ± 0.4 vs 0.14 mm ± 0.1; p<0.0001). No complication was noted after biopsy in both groups. The assembly and the use of the Scheye’s forceps and Noblett’s forceps are equally simple. Conclusion: the thickness of biopsies by aspiration of the rectal mucosa with the Scheye’s forceps is significantly higher than the one obtained by Noblett’s forceps. A further study will allow to compare both technics concerning the reliability of the evaluation of the intrinsic nervous system and its abnormalities.

P0139

Title: Cow’s milk allergy in premature infants: a ready-to-use cow milk Atopy Patch Test before starting an amino-acid formula.

Christophe Dupont 1, Nicolas Kalach 1, Alexandre Lapillonne 1, Nathalie Donne 2, Pascale Soulaine 1, Pierre Henri Benhamou 1
1) Saint Vincent de Paul Hospital, PARIS, FRANCE 2) DBV Technologies, PARIS, FRANCE

Summary:
Cow’s milk (CM) allergy (CMA) is an infantile disease, usually appearing in the first months of life, with very few cases up to now reported in the premature infants. The study was designed to detect CMA in premature infants with digestive symptoms, based on a ready-to-use Atopy Patch Test (APT), Diallertest. Patients and Methods: during the year 2006, 13 premature infants (31 w ±2 weeks, 4 girls), aged 42±18d, receiving formula for preemies with CM and presenting with digestive symptoms (rectal bleeding, 5, vomiting, 1, diarrhea, 3, severe reflux, 2, others, 2) were tested for CMA by Diallertest. Whatever the results, all children received an amino-acid formula (Neocate) and the outcome of symptoms was evaluated one month later. Results: Among the T3 premature infants tested, the digestive symptoms disappeared under amino-acid formula in 10. Diallertest was positive in 7 cases. All infants with a positive Diallertest improved with the amino-acid formula (no false positive) and 1 child with a negative Diallertest improved with the diet (1 false negative). Conclusion: CMA is a frequent and mostly underestimated cause of digestive symptoms in premature infants, mostly fed with CM based formula. APT seems an appropriate method to diagnose CMA in this age range and Diallertest might thus be a useful tool in the neonatal ward.

P0140

Title: Fecal calprotectin as a non invasive marker of digestive distress in preterm neonates: cut-off levels
Florence Campeotto 1, Mariella Baldassarre 2, Marie-José Butel 3, Vivian Viallon 4, Christophe Dupont 1, Nathalie Kapel 5

Summary:
Objective: In preterm infants, enteropathy or necrotizing enterocolitis are prominent features of digestive distress, impacting differently enteral feeding. Their diagnosis, currently based on clinical and radiological data, would benefit from a non invasive biological marker. Patients and Methods: This retrospective multicentric study enrolled 126 preterm infants (75 boys, 51 girls) born at a median gestational age of 33 weeks (range: 25.7-35 weeks) with a birthweight of 1760g (730-2750g). For each neonate, fecal samples were collected weekly from the end of the first week of life until the end of the first month and if any gastrointestinal event occurred. Samples were immediately stored at -80°C before ELISA measurement (Calprest®, Eurospital, Italy). Results: Three hundred and twelve samples were analyzed. Median calprotectin value was 206 µg/g (16-1240), 393 µg/g (52-996) and 832 µg/g (168-4775) in samples from healthy neonates (252 samples), from neonates with mild digestive symptoms (42 samples) and from those with NEC (18 samples), respectively. ROC curves analysis gave a cut-off value of 363 µg/g (sensitivity 0.65, specificity 0.82) for the development of digestive symptoms and a cut-off of 636 µg/g (sensitivity 0.72, specificity 0.95) for the development of severe symptoms. Conclusion: Calprotectin might be a promising non invasive clinical screening marker for intestinal distress in neonates. A prospective multicentric study is in progress to confirm its clinical utility.

P0141

Title: Anti-inflammatory effect of Lactobacillus Casei Variety Rhamnosus in inhibiting LPS-induced IL-8 expression by differentiated Caco-2 cells in a compartmentalized coculture model with peripheral blood mononuclear cells
Chun-Yan Yeung 1, Hung-Chang Lee 1, Jen-Shiu Chiang Chiau 2, Hsu-Wei Fang 3, Shiuh-Bing Fang 4, Mei-Lien Cheng 2
1) Division of Gastroenterology and Nutrition, Department of Pediatrics, Mackay Memorial Hospital, Taipei, Taiwan 2) Department of Medical Research, Mackay Memorial Hospital, Taipei, Taiwan 3) Department of Chemical Engineering and Institute of Biotechnology, National Taipei University of Technology, Taipei, Taiwan 4) Centre for Paediatric Gastroenterology, Royal Free & University College Medical School, London, UK

Summary:
Objectives: The aim of the present study was to investigate the immune response of Lactobacillus Casei Variety Rhamnosus (L. Casei) in mimicking gut by Caco-2 intestinal epithelial cells (IECs) transwell coculture model exposed to Salmonella lipopolysaccharides (LPS) and to understand the interaction of leucocyte-epithelial cell cross-talk by stimulation of L. Casei and LPS. Methods: LPS was added to apical differentiated Caco-2 cells. Peripheral blood mononuclear cells (PBMCs) of basal layer were cocultured with apical Caco-2 cells for 48 hours. While LPS was removed, LGG was added to apical layer and incubated for various times (1, 12, 24, and 48 hours). Immune response was tested at different time courses. Cytokines and gene expression were used to characterize changes in Caco-2 cells co-cultures with PBMCs and challenged with or without L. Casei. Results: Cytokines assay showed medium IL-8 concentration in both apical and basal layers and concentration of IL-8 arrived maximum reduction in L. Casei group at 48 hour than in the group without L. Casei. In the meantime, IL-8 gene expression by PCR of Caco-2 cells was running blunted from 24 to 48 hours. L. Casei could down-regulate IL-8 gene expression of Caco-2 after 24 & 48 hours. PBMCs was shown to have synergistic effect in down-regulation of IL-8 gene expression. L. Casei provided by the mimicking enteric model was able to down-regulate LPS-induced inflammatory mediators. Conclusion: This study suggests that PBMCs of basal layer are affected by signaling transduction from apical layer in immune response.

P0142

Title: Magnetic resonance cholangiopancreatography in pediatric patients: experience with 60 cases
Chun-Yan Yeung 1, Hung-Chang Lee 1, Chang-Ting Huang 1, Wai-Tao Chan 1, Chuen-Bin Jiang 1, Shin-Lin Shih 2
1) Division of Gastroenterology and Nutrition, Department of Pediatrics, Mackay Memorial Hospital, Taipei, Taiwan 2) Department of Radiology, Mackay Memorial Hospital, Taipei, Taiwan

Summary:
Aims: Magnetic resonance cholangiopancreatography (MRCP) is a relatively new and noninvasive technique for evaluating the biliary tree and pancreatic duct. This method was initially used in adults to demonstrate the biliary tree and pancreatic duct in the early 1990s. However, reports on pediatric patients were rare. The aim of this study was to assess the usefulness of MRCP for the detection and characterization of suspected pancrea-
tobiliary system abnormalities in pediatric patients. Methods: Sixty patients received MRCP examination with a suspicion of pancreatobiliary system abnormalities between October 2002 and May 2007 were evaluated retrospectively. MRCP results were compared with operative findings and final clinical diagnosis. Results: Complete data were available in 60 patients, of whom 35 (58.3%) were female. Median age was 3.5 months old with 33 patients less than 1 year old. The predominant presentations were jaundice (n=37), clay color stool (n=21) and chronic abdominal pain (n=18). Final diagnosis included choledochal cyst (n=23), biliary atresia (n=15), hepatitis syndrome (n=13), common bile duct dilatation (n=5), intrahepatic duct dilatation (n=1), hepatic cyst (n=1), pancreatic duct stone (n=1) and hepatic mass (n=1). Thirty-seven (61.7%) patients received operation, including 21 choledochal cysts, 14 biliary atresias, 1 pancreatic ductal stone and 1 hepatitis syndrome (confirmed by cholangiography and liver biopsy). Ultrasound was also performed in all patients. Common duct dilatation was evident in 11 patients and ductal calculi in 9. Twenty-four patients were diagnosed as choledochal cyst, 19 patients were found with slender or invisible gall bladder. Among our 60 patients, ERCP was only done in two. From our results, we found that the sensitivity and specificity of MRCP for choledochal cyst were 91.3% and 97.3% respectively, and 86.7% and 100.0% respectively for biliary atresia. Conclusions: ERCP is an invasive diagnostic and therapeutic procedure in evaluating pancreatobiliary system disorders, however it is technically non-feasible in pediatric patients, especially small infants. We find MRCP can be used effectively for the evaluation of the pancreatobiliary system abnormalities in pediatric patients.

P0143

Title: Combined pH-impedance monitoring improves the yield of diagnostic reflux-symptom associations compared to standard pH-metry in infants and children

Clara M Loots 1, M.A. Benninga 2, S. Kritas 1, G.P. Davidson 1, T. Omari 1
1) Women’s and Children’s Hospital, Adelaide, Australia 2) Academic Medical Centre, Amsterdam, The Netherlands

Summary:
Introduction: The impact of combined multichannel intraluminal pH-impedance (MII) monitoring on diagnostic symptom association with gastro-esophageal reflux (GER) has not been investigated in infants and children. This study assesses the additional yield of positive symptom associations comparing pH-MII monitoring with standard pH-metry. Methods: In 80 infants and children, investigated for suspected gastro-oesophageal reflux disease (GERD), 24-hr ambulatory pH-MII monitoring was performed. The pH-MII tracings were analysed manually to identify pH drops to below 4 and episodes of liquid, mixed and gas bolus GER using established pH-MII criteria. Symptoms of cough, pain, irritability/crying, sneeze, nausea, choke, back arching, heartburn, hicchcoughs and bad breath were included for analysis. Symptoms of regurgitation and belching were not; as these were considered a direct consequence of GER. Standard GER-symptom correlation indices [symptom index (SI), symptom sensitivity index (SSI) and symptom association probability (SAP)] were calculated using (1) standard pH-metry, (2) MII detection of liquid and mixed bolus GER, (3) MII detection of all bolus GER (liquid, mixed and gas) and (4) pH-MII detection of all GER, including ‘pH-only’ events. An association time window of two minutes after onset of GER was used. A positive symptom association was defined for SI >50%, SSI >10% and SAP >95%. The SAP is considered the strongest index for symptom association. Results: Thirty studies were excluded due to technical problems (N=15) or a low incidence of symptoms (<5 episodes/24h) (N=15). Twenty-nine infants (median age: 147 [64 – 200] days) and 21 children (median age: 3.4 [1.5 - 9.8] years) were included. MII detection of all bolus GER (liquid, mixed and gas) and (4) pH-MII detection of all GER, including ‘pH-only’ events. An association time window of two minutes after onset of GER was used. A positive symptom association was defined for SI >50%, SSI >10% and SAP >95%. The SAP is considered the strongest index for symptom association. Results: Thirty studies were excluded due to technical problems (N=15) or a low incidence of symptoms (<5 episodes/24h) (N=15). Twenty-nine infants (median age: 147 [64 – 200] days) and 21 children (median age: 3.4 [1.5 - 9.8] years) were included. MII detection of all bolus GER (liquid, mixed and gas) yielded a significantly greater number of patients with a positive SAP compared to standard pH-metry, p=0.04 (see Table). A positive symptom association was observed in 8 of 10 patients with pathological esophageal acid exposure (GER index >4.1% in children, >11.7% in infants) and 28 (70%) of 40 patients with negative pH findings. Conclusions: A high proportion of paediatric patients with normal esophageal acid exposure, nevertheless had a positive symptom association on pH-MII monitoring. Including liquid, mixed and gas GER in pH-MII monitoring improved the yield of symptom-GER associations when compared to pH-metry alone significantly. The addition of ‘pH-only’ events did not improve the symptom association.

Standard pH-metry MII detected liquid/mixed bolus GER All MII detected bolus GER All GER (pH & bolus)

<table>
<thead>
<tr>
<th>Median No. GER</th>
<th>65.5</th>
<th>73.5</th>
<th>77</th>
<th>107</th>
</tr>
</thead>
<tbody>
<tr>
<td>SI 12% 18% 22% 30%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SSI 44% 60% 60% 48%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAP 50%* 70% 72%* 60%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P0144

Title: Incidence and risk factors of eosinophilic esophagitis

L. Toure 1, C. Babakissa 1, S. Mayer 1, B. Sawan 1
Summary:
Objectives: Eosinophilic esophagitis (EE) is characterised by a massive eosinophilic infiltration of the esophageal mucosa. Symptoms of EE are similar to those of gastroesophageal reflux disease (GERD). The etiology of EE is unknown, but food allergies are probably implicated. The aims of this study were to determine incidence and risk factors of EE in our unit. Methods: We prospectively evaluated 97 consecutive patients who underwent esophagogastroduodenoscopy (EGD) between March 1st, 2006 and February 28th, 2007. Those with IBD (n=9) were excluded. All the biopsies were reviewed by a single pathologist. EE was defined by the presence of more than 20 intraepithelial eosinophils per high power field in the esophageal mucosa. Data collected included and biological parameters, as well as atopic disorders such as: seasonal rhinitis, asthma, eczema, and food allergies. Results: Among the 88 patients (46F/42M, mean age: 10±0.5 yrs) included in the study, 81(92%) were caucasians. We found EE in 9/88 (10%), esophagitis of other origin (non EE) in 23/88 (26%) and no esophagitis in 56/88 (64%) patients. The patients with EE were caucasians (7/9 vs 20/23), male (8/9 vs 9/23, p≤0.05), with GERD like symptoms (7/9 vs 13/23) and atopic disorders (5/9 vs 5/23, p≤0.05). When available serum hypereosinophilia (1/6 vs 1/19), hyperIgE (2/3 vs 1/8) and positive RAST (1/2 vs 1/3) appeared to be more frequent in patients with EE (table 1). The percentage of EE increased from winter to autumn and no case was diagnosed in summer (figure 1). Conclusion: The incidence of EE was higher than reported. Our results suggest, as reported in the literature, a higher incidence in male and an association with atopic disorders. Unusually seasonal variation of incidence is also suggested.

<table>
<thead>
<tr>
<th>male</th>
<th>atopic disorder</th>
<th>hypereosinophils</th>
<th>hyperIgE</th>
<th>RAST+</th>
</tr>
</thead>
<tbody>
<tr>
<td>8/9</td>
<td>vs 9/23*</td>
<td>5/9 vs 5/23*</td>
<td>1/6 vs 1/19</td>
<td>2/3 vs 1/8</td>
</tr>
</tbody>
</table>

P0145
Title:
Prevalence of Helicobacter pylori infection in two socioeconomically distinct pediatric populations in Porto Alegre, Brazil.

Cristina Targa Ferreira 1, Anna Camerini 1, Camila Pereira 1, Carlos Kieling 1, Luise Meurer 1, Themis Reverbel da Silveira 1
1) Pediatric GI unit – Hospital de Clínicas - Federal University, Porto Alegre, Brazil

Summary:
The prevalence of Helicobacter pylori (Hp) is not homogeneous worldwide but high rates of prevalence are found in developing countries. Poor socioeconomic condition is regarded as the most important risk factor for acquisition of the infection. Objective: The aim of this study was to compare the prevalence of Hp in two socioeconomically different pediatric populations in the same city of Southern Brazil. Methods: 891 children and adolescents belonging to two distinct socioeconomic groups were studied during the period between 2005 and 2007: 364 from low and 527 from the higher-income group. All children were submitted to upper endoscopy with at least 4 biopsies of the gastric antrum. Histological samples were prepared with Giemsa and HE. Data are presented in frequency, medium and standard-deviation Statistical analysis included q square and Fisher exact test, p<0.05. Results: the distribution was not similar in the two groups: in the high income group there was more children in the younger group (< 5 years old) – 45% x 33% (p<0.001); in the group between 10 and 15 years there was more children in the low socioeconomic group (29.9% x 16.9%). In the low socioeconomic group 75 (20.6%) out of the 364 patients were infected by Hp and in the high income group the prevalence was 6,3 % (33 out of 527) (p<0.001). There was a trend in both group to increasing prevalences with age and no differences in prevalence could be found by gender (p=0.837). Conclusions: even in a same city poor socioeconomic status contributes to the higher prevalences of Hp infection in developing countries.

<table>
<thead>
<tr>
<th>Age groups</th>
<th>Low income %</th>
<th>High income %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 4 years</td>
<td>9,9 2,1</td>
<td></td>
</tr>
<tr>
<td>5 to 9</td>
<td>18,4 7,2</td>
<td></td>
</tr>
<tr>
<td>10 to 14</td>
<td>32,1 14,6</td>
<td></td>
</tr>
<tr>
<td>15 to 18</td>
<td>27,8 8,2</td>
<td></td>
</tr>
</tbody>
</table>

P0146
Title:
Rates of prevalence of Helicobacter pylori infection in pediatric patients in Porto Alegre – Brazil
P0147

Title: Fecal calprotectin, lactoferrin and S100A12 do not predict outcome in severe pediatric ulcerative colitis

Dan Turner 1, Steven T Leach 2, Neal LeLeiko 3, David Mack 4, Anne M Griffiths 1, Andrew S Day 2

1) SickKids Hospital, For the OSCI study group, Toronto, Canada 2) Sydney Children's Hospital, Sidney, Australia 3) Brown University, Providence, USA 4) Children Hospital of Eastern Ontario, Ottawa, Canada

Summary:
Background: Fecal inflammatory markers may reflect intestinal inflammation, but their ability to predict clinical course in severe ulcerative colitis (UC) is unknown. Aim: In a multicenter prospective study, we aimed to compare head to head the 3 most common fecal markers, for their construct and predictive validity in severe pediatric UC. As a secondary aim, we assessed also responsiveness to change. Methods: Stool samples from 63 children (12.6±4 years; 46% males) with severe UC (87% extensive) were obtained at the 3rd day of intravenous corticosteroid therapy. Repeated samples at discharge and introduction of 2nd line therapy were obtained from a random subgroup of 27 children. Validity was assessed using correlational analysis with the following constructs: Pediatric UC activity index (PUCAI), Lindgren and Seo scores, physician's global assessment, hemoglobin, albumin, ESR and CRP. Predictive validity was assessed using diagnostic utility statistics to predict steroid refractoriness (defined as the introduction of anti-TNF therapy, calcineurin inhibitors or colectomy). Responsiveness was assessed using effect size statistics and test utility strategies. Test-retest reliability was determined using intraclass correlation coefficient (ICC) of repeated samples with stable clinical condition. Results: A total of 107 samples were analyzed, each for the 3 markers (321 assays). Median values (IQR) were very high during the first three days of therapy (calprotectin 5685 (3125-8959) mg/kg; lactoferrin 149 (46-238) mg/kg; and S100A12 367 (133-238) mg/kg), and 100% of samples had values greater than the upper normal limit. However, the three markers correlated poorly with all above constructs (all spearman r<0.26; all P>0.05). No marker predicted steroid refractoriness (AUC of ROC curve: 0.61 (95%CI 0.4-0.83) for calprotectin, 0.56 (0.35-0.78) for lactoferrin, and 0.34 (0.17-0.51) for S100A12). Test-retest reliability was poor (ICC=0.1; P>0.53), as was responsiveness to change (standardized response mean=0.1, correlation with change in the PUCAI<0.3; P>0.05, AUC of ROC 0.4-0.5; P>0.05). Conclusions: Although the three markers were extendedly elevated in severe pediatric UC, it seems that at these extreme values, the correlation with other markers of disease activity, reliability and responsiveness is poor. Fecal markers, therefore, cannot be used neither to predict outcome in severe UC nor to reflect change in disease activity over time.

P0148

Title: Severe pediatric ulcerative colitis: a prospective multicenter cohort study of outcomes and predictors of response

Dan Turner 1, David Mack 2, Jeffrey Hyams 3, Neal LeLeiko 4, Thomas D Walters 1, Anne M Griffiths 1

1) SickKids Hospital, For the OSCI study group, Toronto, Canada 2) Hospital of Eastern Ontario, Ottawa, Canada 3) Connecticut Children's Medical Center, Hartford, USA 4) Brown University, Providence, USA

Summary:
OBJECTIVE Children with chronic gastrointestinal symptoms undergo colonoscopy for work-up of inflammatory bowel diseases (IBD). Focal active colitis (FAC) is a common histologic finding in endoscopic colonic biopsies. FAC may be seen in IBD, infections, ischemia or may be an isolated finding. Clinical outcomes of FAC have not been studied in children. Our primary objective is to determine the clinical significance of FAC up to 3 years after diagnosis in the development of IBD. METHODS A computer search of the surgical pathology files at Phoenix Children’s Hospital was used to generate a list of colonic final pathologic diagnosis in 2004 with the term FAC and no pathologic diagnosis respectively for controls. FAC was defined as the presence of at least one crypt infiltrated by neutrophils, possible crypt abscesses but no distortion. Fifty one patients without IBD were screened for clinical and endoscopic data. IRB approval was obtained. Follow-up was clinical or endoscopic with a mean of 12 months (2-37 months). RESULTS Six patients with FAC developed IBD (11.7%) vs zero patients from controls. IBD was ulcerative colitis in 2, indeterminate colitis in 1 and Crohn's disease in 3 patients. Only patients with persistent symptoms had repeated endoscopy (one control and ten FAC cases). Median age was 11 years (1-18y) in the FAC and 16 years (2-19y) in controls. 44% were females in FAC group versus 51% in controls. Predominant presenting symptoms was abdominal pain in both groups 57.7% (FAC) vs 60% (control). Chronic diarrhea was 15% vs 20%, hematochezia 11.5% vs 9%, constipation 11.5% vs 11% and failure to thrive 4.3% vs zero in FAC versus controls. 59% of FAC patients had symptoms for less than 1 year versus 51% of controls. Stool studies were negative by endoscopy. NSAIDS use was similar. Mild acute ileitis in FAC patients was not associated with IBD at follow-up. 44% of FAC was located in the left colon. FAC in symptomatic children may have a different clinical significance than previously described in adult patients undergoing screening colonoscopy. Prospective studies are warranted.

P0150

Title:
An Interdisciplinary Approach to Feeding Disorders in Children

Daniela Armas 2, Alicia Munyo 2, Fabiana Peregalli 1, Ines Perez 1, Clara Jasinski 2
1) Centro Hospitalario Pereira Rossell, Montevideo, Uruguay 2) Hospital Britanico, Montevideo, Uruguay

Summary:
Objective: Diagnose and treatment of children with feeding disorders (FD) in a specialized interdisciplinary team. Methods: Since August 2002 to July 2007 a prospective, multicenter study was conducted in 153 children (73 girls, 70 boys), from 0 – 5 years, sent to a Feeding Disorder Unit (FDU). Children of different socioeconomic status, from public hospitals, Centro Hospitalario Pereira Rossell (CHPR) and private centers, Hospital Britanico
**P0152**

**Title:** Swallowing disorders and gastroesophageal reflux in children.

Daniela Armas 2, Alicia Munyo 1, Ines Perez 2, Fabiana Peregalli 1, Jasisni C 1
1) Centro Hospitalario Pereira Rossell, Montevideo, Uruguay 2) Hospital Britanico, Montevideo, Uruguay

**Summary:**
Objective: Establish a relationship between GERD and swallowing disorders. Methods: Since August 2007 to March 2008, a prospective study was conducted in 27 children (15 girls and 12 boys) sent to gastroenterologist, for suspected GER, in which a special questionnaire was conducted to detect feeding disorders (FD). These patients were then evaluated by an interdisciplinary team which includes gastroenterologist, speech therapist, nutritionist and psychologist. GERD was confirmed by 24 hour Multichannel Intraluminal Impedance (IMM)-ph probe and swallowing disorders by Videofluoroscopy. Patients with neurologic diseases were excluded from this study. Results: 27 children were evaluated (15 girls, 12 boys), mean age 30 months (m), range 1-60m. All GERD patients presented swallowing disorders. Pharyngeal swallowing disorder was present in 85% of children, and 15%, presented disorders of all 3 phases (pre-oral, oral and pharyngeal). Medical treatment for GERD, oromotor and behavioral therapy were done since the diagnosis. After 3m, clinical improvement was found in 74% of all patients. Conclusions: Dysfunction of pharyngeal phase leads to dysfunction of pharyngeal and oral phases. GERD patients, present more often pharyngeal dysfunction. Food refusal, selectivity, irritation and pain lead to food avoidance and delay in solid food incorporation. When necessary, studies to confirm diagnosis are made: pH-probe/Impedance-pH for gastroesophageal reflux, videofluoroscopy for swallowing disorders. FD in healthy children are due to a variety of causes, ranging from environmental disruption, parental incompetence, children temperament and psychological factors. We may classify FD in organic, functional or behavioral. Results: 153 children were studied, (71 HB y 82 CHPR) from 0-5 years. Etiology: 1) HB: (N: 71)- behavioral 47%, functional 30%, organic 23%. 2) CHPR: (N: 82)- 25% behavioral, functional 35%, organic 40%. Clinical findings: 1) HB: vomit 36%, refusal to eat 31%, pneumonia and asthma 29%, otitis 26%, cough/gagging during meals16-18%. 2) CHPR: vomit 42%, refusal to eat 3%, cough/gagging 44-44%, pneumonia 26%, asthma 40%, laryngitis 10%. Associated pathologies: GER 62%, asthma 53%, neurologic 50%, genetic 10%, esophagus atresia 4%. Nutritional status: 1) HB Malnutrition (MNT) 34.3%, normal 56%, obese 10%. 2) CHPR: MNT 71%, normal 28%, obese 1%. Conclusion: We appreciate a clear difference in both populations regarding the basic pathologies. This difference may be attribute to the socioeconomic and cultural levels of the children assisted in each institution. Neurological cases predominate in the lower socioeconomic levels and behavioral problems predominate in private institutions. A clear difference between the predominant symptoms can be observed comparing both types of institutions. At the CHPR level, as could be foreseen, respiratory symptoms associated with aspiration/swallowing disorders linked to neurologic factors are predominant. At the HB instead, RGE related symptoms are predominant, such as refusal to eat and vomit, aside from the respiratory symptoms. When we analyze the nutritional situation we observe a high incidence of MNT in CHPR, although it is also important in the HB if we consider that the most frequent pathologies are functional and behavioral. FD are frequent and still under diagnosed. The patients being assisted in public hospitals are predominantly neurological while those assisted in private institutions are of the behavioral or functional causes. A comprehensive assessment by an interdisciplinary team provides the most complete method for a correct diagnosis, treatment and elaboration of rehabilitative plans.

---

**P0153**

**Title:** STRIKING REGIONAL VARIATION IN THE INCIDENCE OF INFLAMMATORY BOWEL DISEASE WITHIN SOUTH AUSTRALIA.

David Moore 1, Rammy Abu-Assi 1, Craig Hirte 1, Geoffrey Davidson 1, Paul Hammond 1, Richard Couper 1
1) Women's and Children's Hospital, Adelaide, Australia

**Summary:**
The incidence of inflammatory bowel disease (IBD) in the paediatric and adolescent age group has shown marked variation over time with a general trend to increasing incidence of IBD and particularly Crohn's disease over the past two decades. Regional variation within countries and...
continents is of potential importance as it points to potential environmental factors that may influence susceptibility to IBD. METHOD: Paediatric and adolescent IBD data (0-18 years of age) at time of diagnosis has been collected prospectively in Australia from 1996 at time of diagnosis and entered prospectively into the Australian Paediatric and adolescent IBD database. The Australian IBD database contains data on 1,900 subjects under 18 yr with IBD. The data has been entered by the Australian Paediatric and Adolescent IBD Study Group. The incidence of IBD in South Australia (SA) over a 10 year period to 2006 has been analysed, examining the incidence of Crohn’s disease, ulcerative colitis and indeterminate colitis. SA has a population of just over 1.5 million people. The analysis has been refined to examine regional variation in incidence within Statistical Divisions (SD) in SA. This analysis enables comparison of markedly different regional areas from dense urban living to sparsely populated, arid, rural areas within SA. Population data from the Australian Bureau of Statistics census 2001 has been used for population density. Statistical comparison of regional incidence made using Chi squared and Poisson distribution. RESULTS: TABLE: Incidence of IBD between 1996 to 2006 in each Statistical Division. A significantly higher incidence of IBD and CD (*p < 0.002) noted for the Outer Adelaide SD compared to urban SD of Adelaide. CONCLUSION: There is marked regional variation in incidence in the 0-16yr age group of total IBD and in particular CD in South Australia. The Outer Adelaide SD is an area of high agricultural activity and relatively high rural population density. This has epidemiological significance with regard to environmental influence on the onset of IBD and CD in particular.

<table>
<thead>
<tr>
<th>Statistical Division</th>
<th>CD (Per 100,000 person years)</th>
<th>UC (per 100,000 person years)</th>
<th>IC (per 100,000 person years)</th>
<th>IBD (per 100,000 person years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adelaide</td>
<td>3.6</td>
<td>2.5</td>
<td>0.6</td>
<td>6.7</td>
</tr>
<tr>
<td>Outer Adelaide</td>
<td>7.5*</td>
<td>4.3</td>
<td>0.7</td>
<td>12.6*</td>
</tr>
<tr>
<td>Yorke and Lower North</td>
<td>4.3</td>
<td>2.1</td>
<td>1.1</td>
<td>7.5</td>
</tr>
<tr>
<td>Murray Lands</td>
<td>5.1</td>
<td>1.9</td>
<td>0.7</td>
<td>7.1</td>
</tr>
</tbody>
</table>

P0154

Title: Alpha-Gliadin synthetic peptide library, consisting of 26 overlapping 20-mer peptides, harbors two CXCR3-binding peptides that selectively induce increased intestinal permeability

Karen M Lammers 1, Riulang Lu 1, Amir Tamiz 2, Sefik Alkan 2, Stefanie N Vogel 3, Terez Shea-Donohue 1, Alessio Fasano 1
1) Mucosal Biology Research Center, University of Maryland School of Medicine, Baltimore, USA 2) Alba Therapeutics Corporation, Baltimore, USA 3) Department of Microbiology and Immunology, University of Maryland School of Medicine, Baltimore, USA

Summary: Background: Celiac disease is an immune-mediated enteropathy triggered by gliadin, a component of the grain protein, gluten. Our recent data show that PF-gliadin binds to the chemokine receptor CXCR3, leading to a MyD88-dependent zonulin release and increased intestinal permeability. Aim: to create an alpha-gliadin synthetic peptide library to establish which domain(s) of alpha-gliadin binds to CXCR3. Methods: Overlapping twenty-mer peptides were designed based on the amino acid sequence of alpha-gliadin and synthesized using solid phase synthesis, resulting in a 26 peptides library. To establish the binding affinity of the synthetic gliadin peptides to CXCR3, FITC-labeled peptides were incubated with CXCR3-transfected HEK293T cells in vitro and the binding kinetic evaluated by flow cytometry analysis. Ex vivo experiments were performed using C57BL/6 wild-type mouse small intestines to measure intestinal permeability by monitoring changes in transepithelial electrical resistance (TEER) in response to gliadin synthetic peptides. Results: Out of 26 peptides, 2 alpha-gliadin twenty-mer synthetic peptides are involved in CXCR3 binding. The specificity of this binding was evaluated by kinetic experiments on CXCR3-transfected HEK293T and showed a Kd of 32 uM. The two CXCR3-binding gliadin peptides (4022 and 4026) induced increased intestinal permeability in C57BL/6 wild-type mouse small intestines, while two non-binding peptides (4018 and 4030) failed to do so. Conclusions: Two peptides of the alpha-gliadin twenty-mer synthetic peptide library bind to CXCR3. These two CXCR3-binding peptides, peptide A (4026) and B (4022) induced a significant decrease in TEER, while the non-binding peptides C (4018) and D (4030) did not alter intestinal permeability.

P0155

Title: Possible link between Schizophrenia and celiac disease / gluten-sensitivity.

Debby Kryszak 1, William W. Eaton 3, Nicola Cascella 2, Bushra Bhatti 1, Alessio Fasano 1
1) Center for Celiac Research, University of Maryland School of Medicine, Baltimore, USA 2) Department of Psychiatry, Johns Hopkins School of Medicine, Baltimore, USA 3) Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, USA

Summary:
Background: Celiac disease is an immune-mediated reaction to gluten, presenting with diarrhea, weight loss, abdominal complaints and a range of less common associated neurologic and psychiatric symptoms. Evidence of a link between schizophrenia and celiac disease dates back as far as 1961. A theory for this association presented by Dohan was that gluten serves as an environmental trigger in individuals predisposed to schizophrenia. This theory was supported by two series of ecologic data: the first showing that the prevalence of schizophrenia was decreased in time periods of low grain consumption and the second comparative study showing that the prevalence of schizophrenia was lower in geographic areas of low grain consumption. Recent data from Denmark show elevated prevalence of celiac disease in cases of schizophrenia and in their relatives. Aims: To evaluate the prevalence of celiac disease and gluten-sensitivity in subjects with schizophrenia. Methods: A series of 1419 blood samples of subjects with schizophrenia from The National Institute of Mental Health Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) Project were studied. All samples were screened with: TTG-IgA and AGA-IgA, AGA-IgG. All positive TTG-IgA samples were confirmed with EMA. Results: The serological test combination used to detect celiac disease (EMA positive and/or TTG-IgA and AGA IgA positive) identified 24 positive subjects, suggesting that the prevalence of celiac disease among schizophrenic patients is double (1:59) when compared to that reported in healthy individuals (1:133). Our screening revealed an extremely elevated number of AGA IgA-positive subjects (280) and an unusually low AGA IgG positive subjects (6). The number of subjects exclusively positive for AGA IgA, a potential marker of gluten sensitivity, suggests a high prevalence of this condition (1:5) among the CATIE cohort. Conclusions: These preliminary observations suggest that within the CATIE subjects with schizophrenia there is a mixture of two populations: celiac patients (1:59) and gluten-sensitive patients (1:5). Since changes in behavior have been described both in celiac disease and gluten sensitivity, we conclude that 1 out of 5 schizophrenic patients in this cohort could potentially benefit from a gluten free diet.

<table>
<thead>
<tr>
<th>Assay Combinations</th>
<th>N</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celiac Disease (TTG-IgA+EMA) and/or (TTG-IgA+AGA-IgA)</td>
<td>24</td>
<td>1:59</td>
</tr>
<tr>
<td>Glutensensitivity (AGA-IgA)</td>
<td>280</td>
<td>1:5</td>
</tr>
</tbody>
</table>

P0156

Title: 13C-Methionine Breath Test to Assess Liver Function in Children with Short Bowel Syndrome

Debora Duro 1, Clarissa Valim 2, Shimae Fitzgibbons 3, Tom Jaksic 3, Yong-Ming Yu 4, Christopher Duggan 1
1) Children Hospital Boston, Harvard Medical School, Division of Gastroenterology and Nutrition, Boston, MA, USA 2) Children Hospital Boston, Harvard Medical School, Clinical Research Program, Boston, MA, USA 3) Children Hospital Boston, Harvard Medical School, Department of Surgery, Boston, MA, USA 4) Shriners Burns Hospital for Children and Massachusetts General Hospital, Boston, MA, USA

Summary: Children with short bowel syndrome (SBS) frequently suffer from parenteral nutrition associated liver disease (PNALD), continuous monitoring of liver function could be difficult to perform. L-[1-13C]methylatine (13C-Met) is a stable (non-radioactive) isotope which is exclusively metabolized in liver mitochondria, a process that can be quantified by measuring 13CO2 in expired breath. We hypothesized that the 13C-methionine breath test (13C-MBT) would be a feasible, non-invasive measure of hepatic function in children with SBS to assess the progression of PNALD. Methods: After IRB approval and informed consent, thirteen patients with SBS were studied. Six patients underwent liver biopsy, and among those four children underwent repeat studies after clinically suspected changes in liver function. After collection of baseline breath samples, 2 mg/kg of sterile and pyrogen-free 13C-Met were given intravenously (IV) followed by paired breath samples obtained at 20 minute intervals for 120 minutes. Samples were then analyzed for 13CO2 enrichment using isotope ratio mass spectrometry. Serial biochemical liver tests and PELD modified scores were also recorded. Total 13C2O2 production was measured by indirect calorimetry. The cumulative % recovery of the administered 13C2O2 in expired breath. Results: All 13 patients (median age = 3.1 months, IQR = 1.3-1.7 months) tolerated the 13C-MBT well without any adverse events. Among 6 patients who had liver biopsies 2 had cirrhosis and 4 had cholestasis with mild fibrosis. The mean % Recovery of patients with and without cirrhosis was 7 and 3.5 % respectively and the AUC of patients with and without cirrhosis was 408 and 199 respectively. Among the 4 patients who had repeated measurements, 3 showed increased 13C-MBT excretion with concomitant decreases of their PELD scores (Figure 1). Conclusion: Intravenous administration of the stable isotope 13C-Met and serial breath collection is a feasible, safe and potentially clinically relevant approach for evaluation of hepatic function in children with SBS and PNALD. The 13C-MBT may be a reliable measure to quantify the progression or improvement of PNALD in patients with SBS.

P0157

Title: Improved Recovery From Cow Milk Allergy Colitis With Lactobacillus GG Compared To Extensively Hydrolyzed Formula Alone
Factors influencing changes in mean corpuscular volume and white blood cell indices in paediatric inflammatory bowel disease treated with azathioprine.

Dhandapani Ashok 1, Sherman Soman 1, Sam J Cordell 2, Mike Thomson 1, Chris J Taylor 1, David I Campbell 1
1) Sheffield Children’s Hospital, Sheffield, United Kingdom 2) University of Warwick, Coventry, United Kingdom

Summary:
Aims: (1) To describe the relationship between mean corpuscular volume (MCV) and white blood cell indices (WBC) in children with inflammatory bowel disease (IBD) treated with azathioprine. (2) To determine the effect of age, gender, diagnosis, azathioprine dose, thiopurine methyltransferase (TPMT), plasma protein level and additional therapy on this relationship. Methods: The Hospital pharmacy database identified all children from 1) Dip Ginec Ost e Neonat, U O Neonat e TIN, Bari, Italy 2) Dip Med Int e Pub, Sez Diagn Imag, Bari, Italy 3) Mead Johnson Nutritionals, Evansville, USA

Summary:
INTRODUCTION: Cow milk allergy (CMA) is a common cause of hematochezia in infants. Feeding an extensively hydrolyzed formula (EHF) usually resolves the symptoms. Fecal calprotectin (FC), a neutrophil derived protein and marker of intestinal inflammation, has not been evaluated in infants with CMA colitis. Lactobacillus GG (LGG) has been shown to improve symptoms of atopic dermatitis caused by CMA. OBJECTIVES: 1) compare FC in infants with allergic colitis at diagnosis with that of age-matched controls and changes after 4 wk of dietary allergen elimination and 2) determine the effects of the addition of LGG to an EHF, Nutramigen® LGG vs. Nutramigen® alone on FC and hematochezia. METHODS: Twenty-six formula-fed infants with hematochezia (Group A) (age, Mean ± SD 4.1 ± 2.2 mo) were randomly assigned in a double-blind manner to Nutramigen LGG (12 infants) or Nutramigen without LGG (14 infants). Group B: age-matched, formula-fed healthy controls. RESULTS: At diagnosis FC in group A was significantly higher than in B (Mean ± SD 328 ± 150 vs.132 ± 37 μg/g, p<0.001). At 4 wk, FC in group A had decreased to one half the values but was still significantly higher than in group B (159 ± 151 vs. 94 ± 37, p<0.03). At 4 wk, none of the infants in the Nutramigen LGG group had occult blood in stools, while 5/14 on the Nutramigen group did (p=0.002). Mean FC in the Nutramigen LGG (68.17 ± 69.80) was significantly lower than in the Nutramigen group (285.77 ± 161.76) (p=0.0008). CONCLUSION: In CMA colitis: 1) FC seems to be a good marker of intestinal inflammation; 2) Addition of LGG to an extensively hydrolyzed formula resulted in a significant reduction of hematochezia and marker of intestinal inflammation compared to the extensively hydrolyzed formula alone.
April 2002 to April 2007 treated with azathioprine for IBD. Patient demographics, haematological indices, azathioprine dose and additional treatment modalities were documented following review of case notes. Baseline data was defined as values occurring within the preceding six months of commencing azathioprine. Data was further collected at time intervals 2-3 months, 5-6 months, 11-12 months and 23-24 months post initiation of azathioprine therapy. Results: The population sample included 97 children with IBD (Crohn’s n=52, ulcerative colitis n=14 and indeterminate colitis n=31). Total WBC and neutrophil count fell steadily within the first six months with a plateau between 6-24 months. Conversely, MCV increased steadily within the first six months of treatment with a plateau between 12 to 24 months. This occurred despite a steady increase in dose per kg of azathioprine from baseline to 24 months (1.75mg/kg(0.75) vs 2.44mg/kg(0.77) respectively). Patients with an elevated MCV at 24 months also had a corresponding elevated MCV value at baseline (p=0.006). TPMT was a poor predictor of MCV and WBC variability (p<0.05, r²=15%). The relationship between MCV and WBC values (ΔMCV and ΔWBC) was not influenced by age, gender, azathioprine dose /kg, infliximab, elemental diet or steroids. The association between MCV and WBC significantly strengthened by including a diagnosis of Crohn’s (p<0.05, r² =17%) and mean plasma protein levels at baseline (p=0.008, r²=58%). Twelve patients had azathioprine discontinued for hyperamylasaemia, lymphopenia and TPMT status. Conclusion: Factors yet unrecognised, other than TPMT level and dose per kg, may influence children’s response to azathioprine. The role of plasma proteins needs to be further investigated. There needs to be a consensus on dosage adjustment of azathioprine when faced with potential adverse reactions.

P0161

Title: Pattern of Infliximab Use and Clinical Response in Inflammatory Bowel Disease – single centre experience

Dinesh Rawat 1, Christine Spray 1
1) Department of Paediatric gastroenterology, Bristol Royal Hospital for Children, Bristol, United Kingdom

Summary:
Objective: Infliximab is an increasingly used treatment in children with Crohn’s disease (CD). However, the optimum regimen for treatment & indication for discontinuing treatment is not clear. We sought to review our experience of Infliximab use, clinical response, outcome and side effects in our patients. Methods: Data was collected retrospectively for all patients with inflammatory bowel disease who had received infliximab from 2002-2007. Data was collected for disease distribution, indications for infliximab, dose/schedule of infliximab, clinical response, outcome and side effects. Primary outcome measures were clinical response, duration of response and outcome. Patients were categorised as having received episodic or maintenance treatment. Results: 15 patients (10 girls; age range 6-16 yrs) were treated with infliximab, all of whom had Crohn’s disease. All were receiving concomitant immunosuppression (Azathioprine-13, Methotrexate-2). Indications for infliximab use were steroid refractory disease (n=7; luminal-5, perianal-2); steroid dependence (n=7), fistulising CD (n=1). Mean follow up was 31 months. All received 5 mg /Kg per dose as initial regime. 2/3 children with perianal / fistulising disease who received induction at 0,2,6 weeks remain Infliximab dependent while 1 became resistant & underwent defunctioning colostomy. 5/9 children with luminal CD induced at 0,2,6 weeks responded initially but later restarted infliximab because of relapse. 4/9 with luminal CD received maintenance treatment for 1 year and 3 have been in remission since stopping infliximab for at least 1 year. All patients showed clinical response to infliximab. Secondary non response was seen in 2 patients who received episodic treatment. Infliximab induced remission in 10/15 (66%) patients by week 10 and long term remission in 7/15(46%). 8/15 only had partial response or became dependent. 3/8 of these patients required surgery. Importantly, 5/7 who are in remission had disease duration less than a year at the time of starting infliximab treatment. Conclusion: Infliximab induced long term remission in half of our patients. Patients with luminal CD who received maintenance infliximab treatment as well as patients with shorter disease duration had a more sustained remission after discontinuing infliximab. Maintenance treatment is better in sustaining response as well as long term remission especially in luminal Crohn’s disease.

P0162

Title: Prevalence of Small Bowel Bacterial Overgrowth in pediatric patients

María E Girón 1, Edward E Romero 1, Daniela Hernández 1, María T Arriechi 1, María T Olza 1, Domingo Jaen 1
1) West General Hospital, Caracas, Venezuela

Summary:
Small bowel bacterial overgrowth (SBBO) is the abnormal colonization of the upper small intestine by gram-negative and anaerobic organisms that are usually found in the colonic flora or in the environment (ingestion of large load of bacteria). Poor hygienic conditions and food contamination are due to depressed socioeconomic conditions that usually affect poor people in developing countries. The measurement of hydrogen levels in samples of expired air is a non invasive test that is an excellent alternative in pediatric patients. Objective: To evaluate the prevalence of small bowel bacterial overgrowth in all patients referred to carry out lactulose breath test in our unit. Methods: Retrospective study in a six years period (January 2002 to December 2007). All pediatric patients that underwent lactulose breath test were included. The 6 years period was divided in two
Trienniums and results were analyzed and compared. The test was considered positive if hydrogen was ≥ 20 ppm above baseline within the first 60 minutes. When breath hydrogen was ≤ 20 ppm within 150 min patients were considered Non hydrogen producers (NHP). Results: from January 2002 to December 2007, 862 patients underwent lactulose breath test (48.2% were female, age range 6 months to 12 years). 518 (60.1%) patients were positive, 26 (3%) were NHP and 318 (36.9%) were negative. When divided in two trienniums (2002 to 2004 and 2005 to 2007), there was significant statistical differences between them (p<0.01). The first one included 342 patients (50.6% female), 22.8% were negative, 76% positive and 1.2% NHP. In the second triennium 520 patients (46.7% female), 46.3% were negative, 49.7% positive and 4.3% NHP. Conclusion: The prevalence of SBBO in the six year period was 60.1%, which represents up to twice the reported cases in developed countries (p<0.05). Disclosure: The authors report no conflicts of interest.

<table>
<thead>
<tr>
<th>Triennium</th>
<th>Patients</th>
<th>SBBO Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002 - 2004</td>
<td>342</td>
<td>76.0</td>
</tr>
<tr>
<td>2005 - 2007</td>
<td>520</td>
<td>49.7</td>
</tr>
</tbody>
</table>

P0163

Title: Gene polymorphisms, cytokine gastric concentrations and duodenal ulcer (DU) in adults and children with Helicobacter pylori (HP) infection

Paulo Fernando Souto Bittencourt, Andreia Maria Camargos Rocha, Fabricio Freire de Melo, Juliana Becattini Guerra, Gilfone Aguiar Rocha, Dulciene Maria de Magalhães Queiroz

1) Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Summary:
HP is indubitably associated with DU, but host genetics have been also postulated as important factor in the development of the disease. Recently we have demonstrated that polymorphic alleles of IL1RN were independently associated with DU in children, but not in adults. Furthermore, polymorphisms in genes that code for other inflammatory cytokines were not associated with DU in our population. We evaluated the gastric cytokine levels in adults and children HP-negative (n=36 and n=60, respectively) and HP-positive with (n=50 and n=12, respectively) and without (n=100 and n=60, respectively) DU, correlating the results with the polymorphic pattern of genes linked to the innate and adaptative immune response. Cytokine polymorphisms were genotyped by molecular methods, cagA status by PCR. Gastric cytokine levels were assessed by ELISA and the results expressed in pg/mg of protein. The levels of IL1α (300.8 vs. 113.0, p=0.000), TNFα (402.8 vs 216.6, p=0.00) and TGFβ (1,474.7 vs. 762.1, p=0.000) were twice > in DU than in gastritis adults, but IL1α level was lower in DU group (244.0 vs. 293.3, p=0.07). These differences were not found in children with and without DU (p>0.4); but IL8 was increased in DU (3,373.2 vs. 1131.5, p=0.000). The levels of all cytokines were 2 to 3x higher in HP-positive than in negative patients (p<0.000), except IL1α levels in gastritis adults (p=0.7). cagA status associated only with IL8 levels in both adults, and children irrespective of DU presence (p=0.000). Concerning, the gene polymorphism, > levels of IL1α was observed in carriers of IL1RN polymorphic alleles in the HP-positive group (291.7 vs. 222.4, p=0.008), but not HP-negative (p=0.5) patients. When they were stratified by disease, association remained only in gastritis group (308.4 vs. 225.1, p=0.01). No association was observed between IL1B and TNFα polymorphism and IL1α and TNFα gastric levels in both adults and children (p>0.4). These results are in agreement with our previous studies demonstrating that IL1B and TNFA polymorphisms are not associated with gastric carcinoma (GC) in our population. Otherwise, ILRN polymorphism is associated to GC in adults and DU in children and this polymorphism was the only one associated to increased IL1α expression in the gastric mucosa. Conclusion: a) High levels of cytokines in the gastric mucosa of adults with DU do not rely on gene polymorphism; b) The gastric immune response differs between children and adults with DU.

P0164

Title: Absence of farnesoid X receptor improves fat absorption in essential fatty acid (EFA)-deficient mice
Summary: Cholestatic liver diseases are frequently accompanied by accumulation of bile salts, dietary fat malabsorption, essential fatty acid (EFA) deficiency and in children, by failure to thrive. Bile salts can activate the nuclear farnesoid X receptor (FXR). It has remained unclear whether an interaction exists between FXR and fat absorption, for example during EFA deficiency. The aim of this study is to determine the role of Fxr on dietary fat absorption and on the enterohepatic circulation of bile salts during EFA deficiency in mice. Methods: Fxr-/- mice and control (Fxr+/+) littermates were fed a high-fat, EFA-deficient diet for 8 weeks. To assess EFA-deficiency, we determined triene/tetraene ratio (T/T ratio) in erythrocytes, and the dietary fat absorption by a 72h-fat balance. After 8 weeks of dietary treatment, we quantified relevant parameters of the enterohepatic circulation of cholate, the major bile salt species in mice, using in vivo stable isotope methodology. By gas chromatography we determined the bile salt composition in bile, which was used to calculate the hydrophobicity of the pool by the Heuman index (JLR 30:719; 1989). Results: The EFA-deficient diet induced EFA deficiency of similar severity in Fxr-/- mice and control littermates (T/T ratio, 0.15±0.07 vs. 0.17±0.08, resp., NS). EFA-deficient Fxr-/- mice had a higher fat absorption than control mice (78±4% vs. 70±4% of ingested amount, resp., p<0.05) and gained more body weight over 8 weeks (15±5% vs. 7±5%, resp. p<0.05). The bile flow was similar in both groups. The biliary secretion rate of the primary, hydrophobic bile salt cholate was not significantly different in EFA-deficient Fxr-/- and control mice (207±78 vs. 134±80 µmol/100g/d, resp.). However, EFA-deficient Fxr-/- mice had a twofold higher synthesis rate of cholate (17±4 vs. 8±1 µmol/100g/d in controls, p<0.05). EFA-deficient Fxr-/- mice tended to have a larger bile salt pool (+65%, p=0.09) and a more hydrophobic bile salt composition (Heuman index, -0.17 vs. -0.33 in controls, p=0.07), compatible with a higher capacity to solubilize intestinal fats. Conclusion: Our data show that Fxr inactivation improves fat absorption in EFA-deficient mice. The mechanism may involve the induced synthesis of more hydrophobic bile salts. Present results indicate that FXR could be a therapeutic target for improving fat absorption during EFA deficiency. This research was funded by the Dutch Digestive Foundation (MWO 04-38).

P0165

Title:
Essential fatty acid deficiency in mice impairs lactose digestion

S. Lukovac 1, E.L. Los 1, F. Stellaard 1, E.H.H.M. Rings 1, H.J. Verkade 1
1) UMCG, Groningen, The Netherlands

Summary: Objective: Essential fatty acid (EFA) deficiency in mice induces fat malabsorption. We previously reported indications that the underlying mechanism is located at the level of the intestinal mucosa. The aim of this study is to characterize the effects of EFA deficiency on small intestinal morphology and function. Methods: Mice were fed an EFA-deficient or control diet for 8 weeks. A 72 h fat balance, the EFA status, and small intestinal histology were determined. Carbohydrate absorptive and digestive capacities were assessed by stable isotope methodology after administration of U-13C-glucose and 1-13C-lactose. Concentrations of the EFA linoleic acid (LA), and the enzyme activity and mRNA expression of lactase, were measured in small intestinal mucosa. Results: Mice fed the EFA-deficient diet were markedly EFA-deficient with a profound fat malabsorption. EFA deficiency did not affect the histology or proliferative capacity of the small intestine. Blood 13C6-glucose appearance and disappearance were similar in both groups, indicating unaffected monosaccharide absorption. In contrast, blood appearance of 13C-glucose, originating from 13C-lactose, was measured in small intestinal mucosa. Results: Mice fed the EFA-deficient diet were markedly EFA-deficient with a profound fat malabsorption. EFA deficiency did not affect the histology or proliferative capacity of the small intestine. Blood 13C6-glucose appearance and disappearance were similar in both groups, indicating unaffected monosaccharide absorption. In contrast, blood appearance of 13C-glucose, originating from 13C-lactose, was delayed in EFA-deficient mice. EFA deficiency profoundly reduced lactase activity (-58%, p<0.01) and mRNA expression (-55%, p<0.01) in mid small intestine. Both lactase activity and its mRNA expression strongly correlated with mucosal LA concentrations (r=0.89 and 0.79, resp., p=0.01). Conclusions: EFA deficiency in mice inhibits the capacity to digest lactose, but does not affect small intestinal histology. These data underscore the observation that EFA deficiency functionally impairs the small intestine, possibly mediated by low LA levels in the enterocytes. This research was funded by the Dutch Digestive Foundation (MWO 04-38).

P0166

Title:
Density of the overall population of myenteric neurons of the duodenum of diabetic rats (Rattus norvegicus) supplemented with vitamin E for 120 days of experimental treatment.

Marli Aparecida dos Santos Pereira 1, Eduardo Henrique Bution Perin 1, João Emanuel Granato 1, Carlos Felipe Pasquini de Paule 1, Jacqueline Neliis Zanoni 1
1) Universidade Estadual de Maringá, Maringá, Brasil

Summary:
The diabetes mellitus (DM) results in severe metabolic unbalance and pathological alteration in many tissues. Due to DM were observed reductions in the number and alterations in the neurotransmitters of the myenteric neurons. Among the responsible factors for the establishment of those degenerative alterations is present the lesion of the peripheral nerves, the elevation of the level of the sorbitol and the production of the free radicals, that it is intensified in DM. The alfa-tocopherol is the form of the vitamin E that it presents larger biological activity, being very effective in the neuronprotection, because due to its character lipid-soluble it is present in high concentration in the cellular membranes that they are suffering the action of the free radicals. The alfa-tocopherol is a potent inhibitor of the lipid peroxidation. The vitamin E reduces the oxidative stress and it can have a relevant function in the treatment of the neurological complications of the diabetes. The objective was to analyze the density of the overall population of the myenteric neurons of the duodenum of diabetic rats, induced by the streptozotocin drug, supplemented with vitamin E. Fifteen rats were divided in the groups: control (C), diabetics (D) and diabetics treated with vitamin E (DE). After 120 days, the duodenum was collected and dissected under stereomicroscopy to obtain whole-mount, after that, it was stained for the technique of Giemsa (BARBOSA, 1978). The cellular bodies of the neurons, evidenced in an area of 10.99 mm², were counted. Our results revealed that the density of the neurons in the group (C) was of $1735 \pm 108.6$ and in the groups (D) and (DE) was of $13187 \pm 9.7$ and $1647 \pm 83.28$ respectively. In the group (D) the density neuronal was significantly reduced when compared to the group (C). There was an increase of 25% ($p<0.05$) in the density neuronal of the group (DE), in relation to the group (D). These data allows us to conclude that the diabetic rats had a loss in the density neuronal and the supplementation with vitamin E, in the dosage (1g/kg) and in the period of 120 days, they didn’t present a protecting effect on the density of the myenteric neurons of the group (DE) in relation to the group (D). Key-words: myenteric neurons, duodenum, vitamin E.

P0167

Title:

*Bifidobacterium Bifidum Improves Intestinal Barrier Function in Experimental Necrotizing Enterocolitis*

Ludmila Khailova 1, Katerina Dvorak 1, Melissa D. Halpern 1, Toshi Kinouchi 2, Masako Yajima 2, Bohuslav Dvorak 1

1) University of Arizona, Department of Pediatrics, Tucson, USA
2) Meiji Dairies Corporation, Food Science Institute, Odawara, Japan

Summary:

Background: Neonatal necrotizing enterocolitis (NEC) is a major cause of morbidity and mortality in premature infants. Intestinal barrier integrity is regulated by a number of factors, including mucus secretion and tight junction structure. Previously, we have shown that neonatal rats with NEC have increased intestinal paracellular permeability, decreased ileal goblet cell density, reduced ileal mucin production, and disturbed tight junctions structure compared to healthy controls. Oral administration of probiotics has been suggested as a promising strategy for prevention of NEC. However, little is known about the mechanism(s) of probiotic-mediated protection against NEC. Objective: The aim of this study was to evaluate the effect of bifidobacterium treatment on intestinal integrity and barrier function in a rat model of NEC. Methods: Premature rats were divided into three groups: dam fed (DF), hand-fed with formula (NEC), or hand-fed with formula supplemented with $5 \times 10^6$ CFU Bifidobacterium bifidum OLB6378 per day (BB). All groups were exposed to asphyxia/cold stress to develop NEC. Morphological changes, goblet cell numbers, and composition of tight junction (TJ) proteins were evaluated in the site of injury – the terminal ileum. Results: The incidence of NEC was significantly reduced in the BB group. In the NEC group, dramatic changes in villous morphology and structure, such as disturbed villous surface and reduction of goblet cells were observed. In contrast, the ileal epithelial surface in the DF and BB groups was well preserved; goblet cells appeared to be open with visible droplets of mucin present on the epithelial surface. In the ileum of NEC rats, protein levels of occludin and claudin-3 were markedly increased and both proteins were localized predominantly in the cytoplasm of ileal enterocytes. Oral administration of B. bifidum reduced occludin and claudin-3 protein levels. Conclusions: Normalization of the appearance of goblet cells and TJ proteins in the BB group to the level seen in healthy controls suggest protection against NEC is mediated via improvement of intestinal barrier integrity. Supported by the NIH Grant HD-39657 (to B.D.)

P0168

Title:

LEPTIN LEVELS CORRELATED SIGNIFICANTLY WITH TOTAL FAT INDEPENDENTLY OF DISEASE SEVERITY IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

E. Roma 1, M. Krini 1, M. Vounatsou 2, G. Douskas 3, R. Liakou 1, I. Panayiotou 1

1) First Department of Pediatrics, Athens University Medical School, Athens, Greece
2) Department of Clinical Biochemistry, “Aghia Sophia” Children’s Hospital, Athens, Greece
3) “Hygeias Melathron”, General Hospital, Athens, Greece

Summary:

Introduction: Leptin is an adipocyte-derived hormone/cytokine that links nutritional status with neuroendocrine and immune functions. As a hormone, leptin regulates food intake and basal metabolism, and is sexually dimorphic that is, its serum concentration is higher in females than in males with a similar body fat mass. As a cytokine, leptin can affect thymic homeostasis and the secretion of acute-phase reactants such as interleukin-1 and tumour-necrosis factor. Similar to other pro-inflammatory cytokines, leptin promotes T helper 1 (TH1)-cell differentiation and can modulate the onset and progression of autoimmune responses in several animal models. Many studies in animals have demonstrated that leptin...
levels increase acutely during infection and inflammation. Subjects and Methods: In this context we studied the leptin levels in 54 children with inflammatory bowel disease along with markers of inflammation such as Serum Amyloid A protein (SAA), C-reactive protein (CRP) and total fat and fat distribution. The concentrations of SAA and CRP in serum were measured by particle-enhanced immunonephelometric assays (BN ProSpec Dade Behring), while leptin levels were measured by an enzymatically amplified "two-step" sandwich-type immunoassay (Diagnostic Systems Laboratories). Total fat and fat distribution assessment, was performed by Dual-Energy X-Ray Absorptiometry. Results: The main results of the study showed that: a) leptin levels correlated positively both in male and female with BMI (p<0.01 and p<0.001, respectively); b) leptin correlated positively with total fat and c) no significant correlations were found between leptin levels and markers of inflammation (p>0.750). Conclusions: The findings of this study demonstrate clearly that despite the chronic inflammation observed in patients with IBD, leptin secretion acts as mediator of food intake and metabolism rather than an acute or chronic inflammatory marker.

P0169

Title:
Accuracy of a Monoclonal Stool Antigen Test for Helicobacter pylori in Infants and Preschool children

Daniele Raguzza 1, Rodrigo S. Machado 1, Silvio K. Ogata 1, Franc R. S. Patricio 1, Celso Granato 1, Elisabete Kawakami 1
1) UNIFESP, São Paulo, BRAZIL.

Summary:
Objective: To determine the accuracy of the monoclonal stool antigen test for diagnosing H. pylori infection in children up to 6.9 years old. Methods: A total of 280 patients (53.6% girls; 0.35 to 6.99 years old; mean age 3.6 ± 1.77 years) were evaluated from 2 pediatric hospitals; 276/280 (98.2%) were included; 4/280 were excluded (inconclusive results according the gold standard). The gold standard was a positive culture and a positive rapid urease test. The Hp StAR test (Amplified IDEIA Hp STAR, DakoCytomation Ltda, Germany) was done according to the manufacturer’s instructions; except for the number of automated washing. Samples were analyzed twice and results are expressed as optical density (OD) determined spectrophotometrically at 450 nm. The cutoff was determined by ROC curve analysis (the manufacturer’s recommendations cutoff is 0.190). Results: The H. pylori infection was detected in 18.1% (50/276), but no patient <1 year was infected; gender: 52.0% (26/50) male (p=1). The Hp StAR showed a 100% sensitivity (95% CI: 92.7-100) and a 76.2% specificity (95% CI: 70.1-81.4) according to the manufacturer’s cutoff; the best cut according to the ROC curve analysis was 0.400: the sensitivity was 96.6% (95% IC: 94.7-98), the specificity 97.6% (95% CI: 94.7-99.9). At age group of < 2 years (1/31 infected), the sensitivity was 100% (95% CI: 43.8-100) and specificity was 100% (95% CI: 92.4-100), at ages 2 to 4 years (17/133 infected) the sensitivity was 100% (95% IC: 80.6-100) and the specificity was 97.6% (95% IC: 96.9-99.2); at ages 4 to 6 years (30/122 infected ) the sensitivity was 100% (95% IC: 88.6-100) and specificity was 96.6% (95% IC: 94.7-98).Conclusion: The Hp StAR test is accurate in diagnosing H. pylori in infants and preschool children, however the ideal cutoff has to be locally determined. There is a need for further studies with a greater number of infected infants up to 2 years old for better evaluation of the accuracy of this test in this age group.

P0170

Title:
Helicobacter pylori colonization in the corpus gastric mucosa is related to the optical density (OD) values of monoclonal stool antigen test in infants and preschool children

Elisabete Kawakami 1, Daniele Raguzza 1, Rodrigo S. Machado 1, Silvio K. Ogata 1, Renata Vigliar 1, Franc R. S. Patricio 1
1) UNIFESP, São Paulo, Brazil

Summary:
Objectives: to evaluate the correlation between the degree of H. pylori colonization in gastric mucosa and the optical density values in infected patients. Methods: 42 patients (20F, age ranged from 1.42 yr to 6.99 yr, mean age 4.43 ± 1.45 yr) with H. pylori infection defined by positive antral histology were included. The monoclonal stool antigen test (Hp StAR) was done according to the manufacturer’s instructions; except for the number of automated washing. The Hp StAR was considered positive at OD >0.400 and negative at OD <0.400, this cutoff was obtained by the ROC (receiver operating characteristic) analysis as the best cut of absorbance at 450 nm. Gastric mucosa was analyzed according to the updated Sydney system; considering moderate or intense histology and a positive rapid urease test. The Hp StAR (Amplified IDEIA Hp STAR, DakoCytomation Ltda, Germany) was done according to the manufacturer’s instructions; except for the number of automated washing. Results: Optical density ranged from 0.483 to 6 (mean 3.21 SD 1.55). The neutrophilic infiltrate grade in the gastric antrum and in the gastric corpus was respectively absent in 1/42 (2.3%) and 1/34 (3%); mild in 29/42 (69%) and 28/34 (82%); moderate in 12/42 (28.6%) and 5/34 (15%); and intense in 0/42 (0%) and 0/34 (0%); the lymphomononuclear infiltrate grade was mild in 19/42 (45%) and 19/34 (56%), moderate in 23/42 (55%) e 15/42 (44%); and intense in 0/42 (0%) and 0/34 (0%); the intensity of colonization was mild in 11/42 (26.2%) and 15/34 (44%) patients; moderate in 24/42 (57.1%) and 15/34 (44%); and intense in 7/42 (16.7%) and 4/34 (12%). There was no relationship between OD and the hystological parameters (neutrophil cells, lymphomononuclear cells and H. pylori density) in the gastric antral mucosa. There was a significant correlation between OD and bacterial density grade in the corpus mucosa (ANOVA F = 7.45; p = 0.002). The post-hoc test revealed that the OD of patients with mild grade of colo-
nization in the corpus mucosa was significantly lower than the OD of patients with moderate and intense degree of colonization. Conclusion: There was a significant correlation between the bacterial colonization grade in the gastric corpus mucosa and the OD values of Hp STAR test, but the correlation was not found in the antrum mucosa.

P0171

Title: Helicobacter pylori infection and intestinal parasites in indigenous children communities along the Xingu River in Mato Grosso state, Brazil.

Elisabete Kawakami 1, Mario Luis Escobar 1, Anita P. O. Godoy 1, Ulysses Fagundes Neto 1, Ricardo O Palmero 1, Douglas Rodrigues 1
1) UNIFESP, São Paulo, São Paulo

Summary:
Objectives: To evaluate the association between intestinal parasites and Helicobacter pylori infection in a primitive community. Methods: 198 indigenous children from 2 to 9 years (Median = 5 years), from 6 tribes living along the Rio Xingu, in the medium and lower part of Xingu River: Pavuru, Moygu, Tiararé, Diabarun, Capivara, Ngojwere. Stool samples for intestinal parasites and 13C urea breath test for H. pylori were collected from each of 198 included children. The stool samples were collected and stored in a commercial solution (Paratest, Diagnostek). Two air samples were collected, before and 30 minutes after ingestion of 50mg de urea-13C added to 100 mL of passion fruit juice plus sugar. The samples were collected simultaneously in groups of 10 children. No one child rejected the solution. The air samples were sent by airplane to our laboratory and analyzed with an infrared spectrophotometer (Infrared Isotope Analyzer, Wagner Analysen Technik, Bremen, Germany). A DOB value exceeding 4 ‰ was considered positive, according the cutoff established. Results. The overall H. pylori infection prevalence was 73.5%, similar in boys and girls (M/F: 97/83 (74.6%/ 72.2%) p=0.66). The prevalence was: from 2 to 3a (61.5%); from 4 to 5 years (77.4%); from 6 to 7 years (80%); from 8 to 9 years (85.7%) (p=0.011). Parasites were detected in 194/198 (98%) children, being protozoa in 175 (90%), (55/175, 27% Giardia) and 63 (32%) for helminthes. There was similar prevalence of overall parasites among the 6 tribes (p = 0.115), protozoa (p = 0.113) and helminthes (p = 0.385). There was no association between overall parasites according to age except for helminthes (p=0.015), being more frequent in 2-3 years aged children (17/67, 25%) than 8-9 years (13/27, 48%). There was no association between the H. pylori infection and parasites (p = 0.866), protozoa (p = 0.761), helminthes (p = 0.771) and giardia (p = 0.179). Conclusion: The intestinal parasites and of H. pylori are highly prevalent in this community, and both are linked with increasing age.

P0172

Title: Nutritional status and different consistency of diet in children and adolescents with dysphagia due to esophageal stenosis.

Renata Marciano 1, Patrícia G. L. Speridião 1, Elisabete Kawakami 1
1) UNIFESP, São Paulo, Brazil

Summary:
Objective: To assess the nutritional status and to compare the dietary intake from a liquid, soft and solid diet by patients with dysphagia due to esophageal stenosis. Methods: Thirty-one patients with esophageal stenosis were included in a cross-sectional study. The etiology was caustic (18), post-surgery (7), peptic (3) and without clear etiology (3). The 24-hour recall was used for dietary assessment. The Z-scores below of < 2.0 was considered nutritional deficit. The patients were classified into 3 groups, according to intensity of dysphagia: solid diet group (n=9), soft diet group (n=12), and liquid diet group (n=10). Results: Age ranged between 15 and 176 months (median, 56), 28 children and 3 adolescents, 18 boys. Nutritional deficit occurred in 21.4% (6/28) of children. In the liquid consistency diet group the median of energy, carbohydrates, proteins and lipids intake was significantly decreased than the soft and solid consistency diet group. The median energy density of the liquid, soft and solid diet was 0.8 kcal/mL, 1.3 kcal/g and 1.3 kcal/g (p=0.001), respectively. The iron, folate, thiamin, niacin, vitamin B6 and vitamin E intake was significantly decreased in liquid diet group. Conclusions: The nutritional treatment of esophageal stenosis patients is extremely important, considering the occurrence of nutritional deficit, and particularly in the patients with severe dysphagia, the oral and/or enteral nutrition complementation must be precociously instituted, in order to increase the energy density of the liquid diet, mainly carbohydrate and iron intakes.

P0173

Title: Prevalence of Helicobacter pylori infection in indigenous children aged 2 to 9 years in communities living along the Xingu River in Mato Grosso state, Brazil.
Mario Luis Escobar 1, Anita P. O. Godoy 1, Douglas Rodrigues 1, Renata Vigliar 1, Ulysses Fagundes Neto 1, Elisabete Kawakami 1
1) UNIFESP, São Paulo, Brazil

Summary:
Aim: To evaluate the prevalence and risk factors of Helicobacter pylori infection in children of an indigenous community. Methods: 245 children (mean +/- SD= 4.83 +/-2.18 years; Median=5 years, gender M/F: 129/115) were selected from 6 different tribes of Indigenous Park of Xingu, a Federal Indigenous Reserve. These native communities (Pavuru, Moygu, Tuiararé, Diabarun, Capivara, Ngojwere) live along the middle and low Xingu River basin, in the central Mato Grosso state, a western state of Brazil. The H. pylori infection was detected by the 13C-urea Breath test. Two air samples were collected, before and 30 minutes after ingestion of 50mg de uréia-13C added to 100 mL of passion fruit juice plus sugar. The samples were collected simultaneously in groups of 10 children. No one children rejected the solution. The air samples were sent by airplane to our laboratory. The analysis was done with an infrared spectrofotometer (Infrared Isotope Analyzer, Wagner Analysen Technik, Bremen, Germany). H. pylori positive was considered when DOB (delta over baseline) > 40/00. Results. The mean age was similar among the children of 6 tribes (p=0.899). The overall H. pylori infection prevalence was 73.5%, similar in boys and girls (M/F: 97/83 (74.6%/ 72.2%) p=0.66). Almost two thirds children were already infected by 3 years old. The prevalence was: from 2 to 3a (61.5%); from 4 to 5 years (77.4%); from 6 to 7 years (80%); from 8 to 9 years (85.7%) (p= 0.011). The prevalence of H. pylori was different according to tribes: Pavuru (61.5%); Moygu (55.7%), Tuiararé (89.1%), Diabarun (70.0%), Capivara (85.7%), Ngojwere (83.8%) p <0.001. The ethnic group was significantly associated to the infection, being the Kaiabi e Suya the most infected (84.5%, 82.1%, respectively). Age and village were independents variables associated to H. pylori infection. The risk of H. pylori infection among the tribes was (reference = Moygu): Pavuru (OR 1.27), Tuiararé (OR 6.51), Capivara (OR 4.76) and Ngojhwe (OR 4.10). Conclusions: 1. The high prevalence of the H. pylori infection observed was the expected for a primitive community, most of them infected during infancy. 2. The risk of H. pylori infection among these indigenous tribes living in similar environment was not similar; so host immunity could be considered in the epidemiology of H. pylori infection.

P0174
Title: Diagnosis of pancreatic insufficiency (PI) in cystic fibrosis (CF) patients: A comparison between clinical criteria, fecal elastase 1, 72 h fecal fat and steatocrit
Elizabet V Guimarães 1, Paulo A M Camargos 1, Amanda C S Tardelli 1, Pauliane F B Sarkis 1, Gustavo C Faria 1, Francisco J Penna 1
1) Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Summary:
Main: To compare a clinical criterion (weight gain) and fecal elastase 1 test in the diagnosis of PI and to evaluate the concordance between a quantitative method (72h fecal fat) and a semi-quantitative method (steatocrit) in the diagnosis of malabsorption, as well as, the concordance among these methods and elastase fecal 1. Methods: All patients (n=18) with CF screened by neotanal program in Minas Gerais state (Brazil) along 10 months in 2007 were studied about weight gain, 72h fecal fat (Van de Kamer), steatocrit and fecal elastase 1 levels. All samples were collected in the same time during the three first months. The Kappa concordance test was used to compare the data. Results: The prevalence of low weight gain, low fecal elastase 1 level, high 24h fecal fat and high steatocrit were respectively: 74%, 88%, 64% e 94%. The Kappa concordance between low weight gain and low fecal elastase 1, low fecal elastase 1 and high 72 h fecal fat, low fecal elastase 1 and high steatocrit were respectively: 74%, 88%, 64% e 94%. The Kappa concordance between low weight gain and low fecal elastase 1, low fecal elastase 1 and high 72 h fecal fat, low fecal elastase 1 and high steatocrit were respectively: 0.33 (p=0.08); 0.48 (p=0.02); 0.63 (p=0.005). The steatocrit and 72h fecal fat was not concordant (Kappa 0.243; p=0.164). Conclusion: The steatocrit test is easy to be done, cheap and feasible to everyone. Futhermore, the concordance with fecal elastase 1 is satisfactory. In the other hand, the collection of samples for 72h fecal fat is difficult to be done in infants, which makes this method little reliable. We conclude that the PI diagnosis in cystic fibrosis during neonatal period should be made by laboratorial methods instead of clinical criteron and the steatocrit should be used.

P0175
Title: Dietary aspects in functional intestinal constipation children who presents a good response to laxative therapy
Angela Sezini 1, Elizabet V Guimarães 1
1) Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Summary:
Objective: Investigate the associations between nutritional aspects (specially dietary fiber) and drug therapy of children with chronic functional intestinal constipation that present good results to the treatment. Methods: 35 children of both genders between 4 and 14 years of age took part in the study, with clinical and/or laboratorial diagnoses of chronic functional intestinal constipation. A questionnaire was given to gather informa-
tion including the time of treatment, intestinal habits and used drugs. In order to assess the nutritional intake, a nutritional record technique of 72 hours was used. William et al's (1995) daily recommendation of fiber intake was used to assess the suitability of dietary fiber intake. Results: 51.4% of the children were male. The age median was 95 months. Only 31.4% of the children presented suitable energetic consumption. Seventy percent of the children had a fiber intake higher than the lower intake recommendation. No significant association was found between nutritional aspects and the dose and time of use of the laxative in order to achieve a good result in the treatment. Conclusions: Dietary aspects aren't associated with the drug therapy in patients with good response in the treatment. There aren't associations between nutritional aspects and dose of laxative and time to get a good response with drug therapy in children with The children evaluated didn’t present nutritional fiber intake lower than recommended. Seventy percent of the children had a fiber intake higher than the minimal recommended. No association was shown between the dosage and time of use of the laxative with nutritional aspects studied.

P0176

Title: High prevalence of pancreatic insufficiency (PI) in patients from neonatal screening for cystic fibrosis (CF) in Minas Gerais State, Brazil.

Elizabet V Guimarães 1, Paulo A M Camargos 1, Cátila R Domingos 1, Danielle F Machado 1, Isabela R Silva 1, Francisco J Penna 1
1) Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Summary: Main: To study the prevalence of PI during the first three months of life in patients with cystic fibrosis diagnosed by neonatal screening. Methods: We studied 18 patients diagnosed by neonatal screening using immunoreactive trypsin (IRT)/IRT/sweat test strategy in 10 consecutives months during 2007. We studied the fecal elastase and the DF508 mutation. Results: the prevalence of IP was 88%. The DF508 mutation was found in 70% of the patients, being 40% homozygous. We did not find any difference in the PI prevalence among patients with DF 508 homozygous and patients heterozygous or with other mutations (p=0.56). Conclusion: Despite the low prevalence of DF 508 homozygous in this population, the PI prevalence was higher than the reported in the literature during the first three months of life.

P0177

Title: Invasive nutritional support value in cystic fibrosis patients

Elizabet V Guimarães 1, Renata S Vieira 1, Carlos Rafael A Felipe 1, Alice D Carvalho 1, Francisco J Penna 1
1) Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Summary: Main: To study the value of nocturnal dietary supplementation by gastrostomy in severe undernourished cystic fibrosis children and adolescents. Methods: We studied all 12 patients with severe nutritional deficit that a gastrostomy was proposed to offer dietary supplementation in a reference Brazilian center. The procedure was actually performed in five patients (intervention group) and these were compared with the other seven who did not accept the intervention (control group). Anthropometric and dietetic data of both groups were compared during 12 months. Results: At the moment of the intervention the means of oral caloric intake, the lipase dose, weight/age (w/a) percentile, height/age (h/a) percentile for the intervention and control group were 2405 and 2276 kcal, 12880 and 8437 U/Kg/day, 0.8 and 2.67 and 5.0 and 6.8 respectively. After 12 months, the control group did not showed any significant difference in those variables (p=0.6, 0.44, 0.1 and 0.54 respectively). In the other hand, in the intervention group the w/a and h/a percentile increased significantly to 23 and 18 respectively (p=0.029 and p=0.04). Regarding oral caloric intake there was no difference in the intervention group before and after the gastrostomy (p=0.65). The weight gain was higher in the intervention group compared to the control (p=0.04). Conclusion: The nocturnal dietary supplementation by gastrostomy increased the anthropometric variables of patients with cystic fibrosis. The height gain may be related with a better visceral nutrition after the gastrostomy.

P0178

Title: Prevalence of intestinal constipation during the first year of life

Caroline F Silva 1, Elizabet V Guimarães 1
1) Universidade Federal de Minas Gerais, Belo Horizonte, Brazil

Summary: Main: To study prospectively the prevalence of the intestinal constipation during the first year of life in its both acute and chronic forms. Method:
Title: Clinical and endoscopic outcome after Nissen fundoplication for gastroesophageal reflux disease

Alessandra Maria Borges Vicente 1, Joaquim Murray Bustorff-Silva 1, Luciana de Meirelles 1, Elizete Aparecida Lomazi da Costa Pinto 1
1) UNIVERSIDADE ESTADUAL DE CAMPINAS, CAMPINAS, BRAZIL

Summary: Objective - The surgical treatment of gastroesophageal reflux disease is indicated in patients with a chronic condition, with or without complications. Anti-reflux surgery is recommended in patients unresponsive to proton pump inhibitors, with partial improvement, or those with recurrent symptoms when medical therapy is discontinued. Failure of the fundoplication surgery has been detected in the postoperative period. This occurrence highlights the need for monitoring of the fundoplication. Clinical symptoms are not sensitive enough to correlate with patency of the fundoplication. This study objective were to identify the frequency of a disrupted wrap in the postoperative period and to evaluate esophageal complications related with gastroesophageal reflux recurrence in children. Methods - The study was cross sectional, prospective and descriptive, including 45 patients (16months – 16.9 years) who had undergone Nissen fundoplication in a Teaching Hospital, Thirty six patients (57.8%) were neurologically impaired. Upper gastrointestinal endoscopy was performed 10 to 12 months after surgery, to determine esophageal endoscopic and histopathologic appearance and to examine fundoplication integrity. Results - An intact wrap was identified in 41 patients (91.1%). Recurrent peptic esophagitis was found in 6 of 45 patients, two of which required a redo fundoplication. Endoscopic peptic esophagitis was associated a with defective wrap (p=0.005). Two patients with Barrett esophagus were identified. Conclusions - Fundoplication appeared effective for treating esophagitis, even in patients with previous esophageal stenosis. Endoscopic follow up may be useful for patients who underwent anti-reflux surgery. Endoscopy allows the diagnosis of possible complications, even in assintomatic patients.

Title: Effects of bottle or cup feeding as transitional methods on breastfeeding

CINTHIA TIAGO PAES DE ALMEIDA PEDRAS 1, ELIZETE APARECIDA LOMAZI DA COSTA PINTO 1, MARIA APARECIDA MARQUES DOS SANTOS MEZ-ZACAPPA 1
1) UNIVERSIDADE ESTADUAL DE CAMPINAS, CAMPINAS, BRAZIL

Summary: Objectives: To compare the effects of bottle or cup as transitional feeding methods on rates of breastfeeding duration in very low birth weight preterm. To assess risk factors for breastfeeding discontinuation and weaning among children less than one year old. Methods: A retrospective cohort study was conducted by reviewing charts of 88 preterm neonates who had been fed with bottle as transitional feeding technique (bottle feeding group) and of 77 fed with cup (cup feeding group). The outcomes assessed were neonate feeding type at discharge and breastfeeding duration. Kaplan-Meier survival analysis and uni or multivariate Cox regression analysis were used. Relative risks (RR) with 95% confidence intervals (CI95) of breastfeeding discontinuation and weaning were calculated. Results: Rates of breastfeeding at discharge were 98.7% and 80.7%, respectively, to cup and bottle feeding groups. Total breastfeeding rate was similar between groups at discharge and was higher in cup feeding group during first year of life, respectively, 77.9% and 47.7%. Breastfeeding duration was similar between groups. Transitional technique was not related with weaning (RR=1.41; CI=0.94-2.11). Following variables were related to breastfeeding duration: broncho dysplasia (RR=1.59; CI=1.04-2.42), mothers milk volume drawn during 5 days before suckling (RR=0.99; CI=0.99-0.99); breastfeeding at discharge (RR=1.37; CI=7.58-24.88) and total breastfeeding at discharge. Total breastfeeding at discharge was the weaning predictor according to multivariate analysis. Conclusion: Breastfeeding duration was not related to transitional technique. Total breastfeeding at discharge was the weaning predictor. To maintain milk production could protect very low birth weight infants against weaning. Broncho dysplasia is a condition that needs special strategies in order to increase breastfeeding rates in VLBW.
Title: Social conditions in family of children with chronic constipation

ELIZETE APARECIDA LOMAZI DA COSTA PINTO, MARLI ELISA NASCIMENTO FERNANDES
1) UNIVERSIDADE ESTADUAL DE CAMPINAS, CAMPINAS, BRAZIL

Summary:
INTRODUCTION: In chronic constipation, as in other chronic disease, compliance to therapy is a challenge to doctors. Brazilian children followed in a tertiary health care service present worse compliance and a longer time for recovering when compared to children seen in international tertiary health services. The objective of this study was to identify social and economical characteristics in families of constipated children see in a tertiary hospital. METHODS: In a cross-sectional, prospective and comparative study, parents of children with constipation were interviewed as well as the same number of parents of children without constipation, matched for age and sex (comparison group). Interviews were applied during admission in an universitary hospital, from 2004 to 2007, 102 families of 51 constipated children and 51 non-constipated children admitted for other diseases and with regular bowel movements (comparison group). Variables related with social, economical and cultural aspects were investigated. RESULTS: There was no difference between groups related to familiar composition (p > 0.05). Illiterate mothers were identified in 59% of families of constipated children. Low income was observed in most of constipated children families (p = 0.42). Most of constipated children lived in a rented or donated house (p=0.08) with greater number of members (p=0.06). CONCLUSION: Social condition of constipated children families has characteristics that should be considered in their therapy.

Title: Gastroesophageal Reflux and Apparent Life Threatening Events - Is there Symptom Correlation?

Judith Cohen Sabban, Marina Orsi, Gabriela Donato, Julieta Gallo, Daniel D Agostino
1) Hospital Italiano, Buenos Aires, Argentina

Summary:
Aim: To determine the temporal correlation of symptoms in infants with gastroesophageal reflux (GER) and apparent life-threatening events. Materials and methods: Since March 2005 to March 2008, we evaluated all infants from birth to 6 months of age who presented an apparent life-threatening event (ALTE) without complicating factors as: arterial support, treatment with caffeine, permanent nasogastric tube who were admitted to the Hospital Italiano in Buenos Aires. All of them a 24 hour Multichannel Intraluminal Impedance-pH study (MII-pH) was performed with a Sandhill Monitoring Recorder using catheters (ZIN S61CO1E) with 7 impedance sensors and one pH probe at the distal end. We evaluated the temporal correlation (5 minutes: before and after) of three symptoms: apnoea, fuzziness and vomiting with a gastroesophageal episode. Results: Thirty three infants were evaluated (21 girls), with a median age of 2 months (r1-6 months). In this study, a total of 1865 (X:49.07, r13-114) reflux events were observed: 1167 (62.5%) nonacid (X:30.7, r 5-105) and 698 acid reflux (X:18.3, r 5-43). According to the symptom index (SI): 18 patients were positive. Total of symptoms seen in relation to GER were: 26 apnoeas, 26 vomiting and 14 fuzziness. The percentage of apnoeas seen before a reflux episode was 53.8% (57.1% nonacid), during GER 30.7% (62.5% nonacid) and after GER 15.3% (25% nonacid). Fuzziness occurred usually 10/14 after reflux events and with no difference between acid or nonacid. Instead vomiting occurred during GER, and was usually nonacid (65.3%). Conclusion: In this study, in those patients in which temporal symptom correlation was observed, GER occurred before or during apnoea events and was mostly nonacid. Fuzziness was not related to the quality of the reflux material but to the episode itself.

Title: The role of Non Acid Reflux on Esophageal Mucosa evaluated with the 24 hr pH-Multichannel Intraluminal Impedance and Endoscopy.

Judith Cohen Sabban, Marina Orsi, Gabriela Donato, Camila Sanchez, Daniel D Agostino
1) Hospital Italiano, Buenos Aires, Argentina

Summary:
Aim: To determine the number of acid (A) and nonacid (NA) episodes in relation to esophageal damage in children with gastroesophageal reflux. (GER) Materials and Methods: Since May 2005 to February 2008, a prospective study was conducted in forty children (27 boys/13 girls) with 9.5 years median age (r1-18yrs) suspected of GER in the Gastroenterology Unit of Hospital Italiano - Buenos Aires. In all of them an upper endoscopy...
with biopsies was performed and subsequently a 24 hr MII-pH study with a Sleuth Monitoring Recorder using catheters (ZIN or ZPN S61CO1E) with 7 impedance sensors and one pH probe at the distal end. The biopsies were informed by two different pathologists in a blinded manner. Patients with congenital anomalies, mental retardation, or on medications were excluded. Results In this study, the number of NA or association of A and NA reflux, and full column episodes will be more related with esophageal damage (p<0.0001). We not found difference in bolus clearance between patients with esophageal damage and normal mucosa. Conclusions: The MII-pH is actually, the best method to evaluate nonacid reflux and full column episodes which are important risk factors in relation to esophageal damage and conventional pHmetry is unable to detect.

<table>
<thead>
<tr>
<th>Esophageal Damage</th>
<th>Normal Mucosa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Nonacid Episodes</td>
<td>548</td>
</tr>
<tr>
<td>Number Acid Episodes</td>
<td>844</td>
</tr>
</tbody>
</table>

P0184

**Title:**
INTESTINAL PARASITOSIS IN CHILDREN FROM A COMMUNITY OF THE METROPOLITAN REGION OF SALVADOR, BAHIA, BRAZIL

Emilia Nunes de Melo 1, Ivan de Carvalho V. Barbosa 1, Marcela Embriruçu Carvalho 1, Thaís Barreto Mota 1, Maria Clotildes Nunes Melo 1, Suzy Santana Cavalcante 1

1) Hospital Professor Edgar Santos - UFBA, SALVADOR, BRAZIL

**Summary:**
The intestinal parasitic diseases are still a serious problem of public health in communities of undeveloped countries. There are a lot of risk factors that contribute to high levels of children and adolescents infestation; some of them are low family income, low school rates of parents or care-takers, bad sanitary conditions and inefficient amount and bad quality of water. The development of projects that promote academy and community interaction through educational health activities may represent a good strategy to change this overview. Objective: Identify the prevalence of intestinal parasitic diseases and possible risk factors among children and adolescents of a community; expose the epidemiological and clinical features of the population in the study; describe the experience of exchange between academy and community through educational works in health at the community where the study took place. Methods: An observational cross-sectional study included children aged less than 15 years old, living in a community at the Metropolitan Region of Salvador, Bahia, Brasil, after the adults responsible for the children signed a statement giving their free and informed consent for the child's participation. All the community families were registered. First, took place a door to door visitation in order to complete the questionnaires and observe cultural aspects. Second, families underwent interventions characterized by education activities in health followed by knowledge evaluations. Results: The results shown are those from the first step of the study that is on the run. The entrance of the researchers in the community followed the known steps of adaptation, acceptance and establishment therefore the relationship of trust happened with success. There were 110 houses in the community; 144 individuals were identified aged less than 15 years old in 73 houses. Girls accounted for 50.0% of the sample and 26.4% were five years of age or less. The prevalence of intestinal parasitic diseases was 80.0 per 100 individuals that had laboratorial results – more than one parasit was found in 30% of them. Malnutrition was diagnosed in 46.7% (43/92); around 60.0% of the mothers had no education or elementary school incomplete. Conclusion: A high prevalence rate of intestinal parasitosis and malnutrition was found in the studied community; the study brought out the very bad living condition of the people that associates with these morbidities. Key Words: Education, Health

P0185

**Title:**
NOSOCOMIAL GASTROENTERITIS IN A PEDIATRIC HOSPITAL IN SALVADOR, BAHIA, BRAZIL

Suzy Santana Cavalcante 1, Eduardo Mota 1, Luciana R. Silva 1, Diogo R. Santana 1, Juliana R. C. Oliveira 1, Emília N. Melo 1

1) FACULDADE DE MEDICINA-UFBA, SALVADOR, BRAZIL

**Summary:**
Nosocomial gastroenteritis (NG) is an important cause of morbidity among hospitalized children. It is responsible for increased costs and prolonged hospital stay. The persistently high incidence among children and the peculiarities of the epidemiologic factors that may be involved indicate that there is a need to broaden the knowledge on topic. Objective: This study aimed to describe the main risk factors and epidemiologic characteristics of NG among children, in order to provide clues for more effective control measures. Methods: A prospective study was conducted in a tertiary-level teaching pediatric hospital in Salvador, Bahia, Brazil, from March 2005 to February 2006. CDC's standard definitions were adopted. Following
admission, all patients were visited daily and a form was filled out to obtain data on clinical signs and symptoms of acute diarrhea among others, comprising a strategy to achieve precise diagnosis and detailed information on risk factors. The follow-up extended beyond the hospital stay to ascertain cases of gastroenteritis that may manifest after the discharge date. Stratified analysis was performed to date. Results: Some 803 patients were included; boys accounted for 56.8% of total. The mean age was 5.5 years (standard deviation/SD=4.1 years), ranging from 1 month to 14 years. There were 187 episodes of nosocomial infection in 124 patients (18.8%) – gastrointestinal infections in 36.4% of them. Acute diarrhea was associated to outbreaks of Rotavirus infections in the ward in 8.6%. The overall incidence of NC was 5.0 episodes per 1,000 patient-days, with higher rates (incidence density ratio: 2.82; 95%CI: 1.59-5.00) among children aged less than one year (P<0.001). The factors most closely associated with higher incidence of NC were nonsurgical clinical disease (17.0; 8.14-33.59) and use of antimicrobial agents (14.0; 5.64-34.83). The lengths of hospital stay for patients with and without nosocomial gastroenteritis were, respectively, 16.4 and 7.8 days (P<0.001). Conclusion: The results may provide support to review methods and practices of epidemiologic surveillance of nosocomial gastroenteritis that are applied in children's hospitals and pediatric services. KEY WORDS: Gastroenteritis, nosocomial infection, pediatrics, risk factors.

P0186

Title:
Budesonide for maintenance of remission in Crohn’s disease – a systematic review and meta-analysis for the Cochrane Collaboration.

Eric I Benchimol 1, Cynthia H Seow 2, Anthony R Otley 3, A Hillary Steinhart 2
1) The Hospital for Sick Children, Toronto, Canada 2) Mount Sinai Hospital, Toronto, Canada 3) IWK Health Centre, Toronto, Canada

Summary:
BACKGROUND: Budesonide is an enteral glucocorticoid with limited systemic availability which is effective at inducing remission in Crohn’s disease (CD). A previous meta-analysis (of three trials) found no benefit of budesonide for maintenance of CD remission. OBJECTIVE: To systematically evaluate the latest evidence of the efficacy and safety of budesonide for maintaining remission in CD. METHODS: Controlled trials of budesonide for the maintenance of remission were reviewed. Remission was defined as a CDAI≤150 or PCDAI≤10. Electronic databases (MEDLINE, EMBASE, Cochrane Trial Registers, and ClinicalTrials.gov) and recent proceedings from major meetings were searched. Two independent investigators assessed study eligibility, extracted data and assessed study quality using Jadad’s criteria. Random or fixed effect models were chosen based on heterogeneity. Studies were weighted using the DerSimonian-Laird or Mantel-Haenszel method. RESULTS: Ten studies met criteria for inclusion. Budesonide 6mg daily was more effective at maintaining remission in studies that measured remission rates at 3 months (RR 1.45, 95%CI 1.11-1.91, P=0.007), but not in studies which measured remission rates at 6 months (RR 1.21, 95%CI 0.88-1.66, P=0.25) or 12 months (RR 1.21, 95%CI 0.92-1.58, P=0.17). Subgroup analyses found that neither controlled-ileal release budesonide (RR 1.37, 95%CI 0.82-2.29, P=0.24) nor pH-modified oral budesonide (RR 1.32, 95%CI 0.71-1.95, P=0.52) were more effective at maintaining remission at 12 months compared with placebo. Budesonide 6mg was not associated with a higher proportion of patients with adverse events (RR 1.30, 95%CI 0.86-1.97, P=0.22) or study withdrawals due to adverse events (RR 1.06, 95%CI 0.60-1.88, P=0.83). However, budesonide was associated with a higher likelihood of abnormal ACTH-stimulation test than placebo (RR 2.88, 95%CI 1.72-4.82, P=0.0001). CONCLUSIONS: There is no evidence that budesonide is effective at maintaining clinical remission in CD. The significant benefit observed at 3 months was likely the result of residual effect of the medications or surgery used to induce remission prior to study enrollment. Although budesonide was not likely to induce adverse events in patients than placebo, cortisol response was more likely abnormal, indicating some systemic absorption. This adrenocortical suppression could affect the growth and bones of children with CD. Therefore, maintenance of remission with budesonide is not indicated.

P0187

Title:
What do adolescents know about their IBD? Utilizing a novel transition tool for the assessment of knowledge of disease characteristics, medications and health services resources.

Eric I Benchimol 1, Thomas D Walters 1, Miriam E Kaufman 2, Karen Frost 1, Zenaida Chinea 1, Mary Zachos 1
1) Division of Gastroenterology, Hepatology & Nutrition, The Hospital for Sick Children, Toronto, Canada 2) Division of Adolescent Medicine, The Hospital for Sick Children, Toronto, Canada

Summary:
BACKGROUND: The transition from pediatric to adult care is characterized by increasing independence from parents, and an expectation by physicians that a patient will help care for their illness. An area of deficit identified by adult gastroenterologists who care for newly transferred patients with inflammatory bowel disease (IBD) is the adolescents’ knowledge of disease characteristics, medications and health services resources. OBJECTIVE: To evaluate the knowledge of transitioning adolescents with IBD regarding three major domains: disease phenotype, medications and health services resources. METHODS: Patients aged 15-18 years with IBD diagnosed >6 months prior were approached to independently fill the MyHealth...
Passport (IBD version, www.sickkids.on.ca/myhealthpassport). Their parents were asked to fill the same questionnaire. Their responses were evaluated by a physician or IBD nurse to evaluate accuracy. Patient vs parent consistency was assessed using kappa statistics and McNemar’s test for paired data. RESULTS: 33 patients participated (42% female, age 16.0±1.2 yrs, disease duration 3.0±2.3yrs), as did 25 parents. 22 patients had Crohn disease (CD)(3 with ileal, 10 with ileocolonic, 8 with colonic and 1 with isolated upper GI disease), 9 had UC (7 with pancolitis), and 2 had IBD-U. Overall, 91% of patients and 80% of parents were able to accurately name their diagnosis (CD/UC/IBD-U) (Kappa 0.12±0.22, McNemar p=0.69). In patients with CD, 27% were able to accurately identify disease location, compared to 22% of UC patients. 75% of patients accurately identified their medications, compared with 96% of parents (Kappa -0.7±0.06, McNemar p=0.22). Only 27% of patients could name their medication funding source, compared with 96% of parents (Kappa -0.09±0.09, McNemar p<0.001). 51% of patients were able to name their pharmacy and location, compared with 96% of parents (Kappa -0.08±0.08, McNemar p<0.001). CONCLUSIONS: The knowledge of adolescents with IBD is similar to that of their parents, with the exception of health services resources. Most patients accurately identified their diagnosis, medications and medical history, but neither patients nor parents were able to accurately identify disease location. Further educational interventions could be developed to target areas of weakness in adolescent knowledge. The MyHealth Passport for IBD is an important resource in educating and instilling independence in adolescents transitioning to adult care.

P0188
Title: Eosinophilic Esophagitis case series in pediatric patients in an Endoscopy Reference Center.
Cristina P Barros 1, Erica R M A Rezende 1, Luciana C Gonçalves 1, Mariza R Faria 1, Gesmar R S Segundo 1
1) Universidade Federal de Uberlandia, Uberlandia, Brazil
Summary: Objective: The aim of this project is to present a case series of Eosinophilic Esophagitis (EoE) diagnoses in a Reference Center of Pediatric Endoscopic Group in a city of southeastern Brazil. Methods: This is a descriptive study based on retrospective analyses of medical records of patients with diagnosis of EoE that present 20 or more eosinophils per high power field (hpf) in mucosa of esophagus, in the period range from February 2004 to February 2008. A questionnaire based in medical prontuary concerning to age, sex, eosinophilia, total serum IgE, endoscopic findings, histological findings, and evaluation to food allergy was filled to data. Results: From 1,666 endoscopies accomplished in the Unit, 32 (1.92%) showed criteria for EoE. The mean age of patients was 69.9 months (4-183 months), and the male sex was predominant (62.5%). The mean levels of total serum IgE was 361.0 UI/ml (14 -1758), with 20 (83.3%) of 24 higher than expected for age, and blood eosinophilia was higher than 4% in 23 (71.8%) of 32. The mean levels of eosinophils per hpf in esophagus mucosa endoscopic was 33.8 (20-200). For food allergy investigation, 19 (82.6%) patients were investigated by specific IgE dosage for at least one food, with 10 (52.6 %) presenting alterations. Conclusion: EoE is an increasingly recognized disease in various parts of the world. Our data showed a concordance with literature related to male sex predominance and alterations associated to allergic background. The investigation of food allergy was not performed satisfactorily. Pediatric patients with clinical symptoms of gastroesophageal reflux with a lack of response to the treatment should be submitted to endoscopy to investigate EoE. Our data suggest the necessity to improve the endoscopic diagnosis, with biopsies even with normal esophagus and the better investigation of food allergies, to enhance the management of patients.

P0189
Title: Requirement for commensal gastrointestinal microbial flora on systemic adaptive immune function
Esi S.N. Lamouse-Smith 1
1) Children’s Hospital Boston, Boston, USA
Summary: Objective: The impact of intestinal flora on the generation of adaptive immune responses to peripheral antigen exposure has not been well characterized. Failure to acquire normal gastrointestinal (GIT) commensal microbial flora at critical time points during growth and development may impact factors required for initiating and sustaining primary adaptive immune responses. Methods: The effect of an altered GIT bacterial flora on the generation of antigen specific responses was analyzed in infant mice exposed to antibiotics that altered GIT flora. Mice at various ages were challenged with pathogens engineered to express ovalbumin. Following challenge, successful immunization and ova specific primary T cell responses were assed via the production of IFN-γ. Results: In contrast to control mice of the same age, 10 day old mice with altered GIT flora demonstrated diminished capacity to mount an ovalbumin specific cellular immune response following infection with Listeria monocytogenes-Ova or Vaccinia-Ova. In addition, 10 day old mice with altered GIT flora demonstrated increased mortality following challenge with Vaccinia-Ova as compared to age matched controls. Conclusion: The results of these experiments support the hypothesis that colonization of the GIT by commensal bacterial flora influences adaptive antigen specific immune responses elicited in the periphery. Thus, alterations or deficiency in the GIT flora may have far reaching consequences for the role that flora may play in disease of immune dysregulation.
P0190

Title: A Retrospective Study of Cryptosporidial Diarrhoea in a Region with a High HIV Prevalence

Etienne Nel 1, Mark F Cotton 1, Jeremy Goodway 1
1) Faculty of Health Sciences, Stellenbosch University, Cape Town, South Africa

Summary:
Introduction: Cryptosporidium has emerged as an important cause of diarrhoeal disease in children. No data are available describing cryptosporidial diarrhoea in the Western Cape Province of South Africa. Aim: The aim of this study was to describe cryptosporidial diarrhoea in children presenting to Tygerberg Children's Hospital, a referral hospital in the Western Cape, South Africa. Methods: A retrospective review was performed of patients presenting to Tygerberg Children's Hospital with diarrhoea and cryptosporidium detected in the stool from June 2004 to April 2005. Demographic details, duration of hospitalisation, mortality, HIV status and long term outcome of HIV infected children were recorded. Results: Cryptosporidium was found in 90 stool specimens of 63 children younger than 18 years. Thirty-nine (62%) were male. The mean age was 18.7 months (sd 17months). Fifty-two (83%) were younger than 2 years. Thirteen children (21%) were HIV positive, 19 (30%) were HIV negative, and the HIV status of 31 (49%) was not determined. Seven (11%) children died. Four were known to be HIV infected (all were also severely malnourished). The median CD4 count of survivors was significantly higher than that of those who died. Two of the remaining 3 children who died were also malnourished. There was no significant difference in the age of presentation between survivors and children who died. Forty-eight children required hospitalisation and 15 were treated as outpatients. The median duration of hospitalisation for HIV infected children was 18 days and 8.5 days (p =0.018) for children not infected with HIV or of unknown status. Records were available for 8 of the 9 surviving HIV infected children. The median follow-up period was 27 months (range 0.4- 39 months). One patient was lost to follow-up shortly after discharge. The remainder had recurrent admissions for conditions such as diarrhoea, pneumonia, chronic lung disease, and tuberculosis. All except one received HAART. No patient developed signs of cholangiopathy or died. Conclusions: The mortality and morbidity of cryptosporidium diarrhoea is high, in particular in HIV-infected and malnourished children. Most children require hospital admission. There was no evidence of cholangiopathy in survivors receiving HAART. Disclosure: Attendance of WCPGHAN 3 supported by Nestle.

P0191

Title: Case reports CAPSULE ENDOSCOPY IN CHILDREN

Eva Jeumpa Sulaeman 1, Budi Purnomo 1
1) Harapan Kita Hospital, Jakarta, Indonesia

Summary:
Case reports CAPSULE ENDOSCOPY IN CHILDREN Eva J. Sulaeman, Budi Purnomo Mother and Children hospital, Harapan Kita, Jakarta Abstract Background Gastrointestinal bleeding in children relatively rare but potentially endanger. In some cases, we can not find any abnormalities from conventional endoscopy technique. Therefore, we need to perform capsule endoscopy to look for the source of bleeding. This technique is a new technique to diagnose bleeding in the intestine. We reported the first two pediatric cases in Indonesia. With this technique, we can find the source of GI bleeding in the intestine. The aim of this study is to report the first two cases of capsule endoscopy in children at Harapan Kita Hospital and In Indonesia who suffered from hematoschezia for finding the source of the bleeding. Case I: DA, female, 2 years old, presented with chief complaint Melena for 2 months.She was already hospitalized twice and received some blood transfusion. There was no abnormality from gastroscopy and colonoscopy. Radionuclear scintigraphy within normal limit. Endoscopy capsule examination showed bleeding at terminal ileum. Laparotomy exploration was done and we did wedge incision. Histopathologic examination revealed angiodysplasia. Bleeding was stop postoperatively Case II: MZ, male, 6 years old. Presented with chief complaint: Bloody stool for a month. The examination of stool, gastroscopy and colonoscopy were normal. Radionuclear scintigraphy showed bleeding from minor curvature of the stomach. Capsule endoscopy was performed and showed bleeding from proximal jejunum and vasculitis. Biopsy result: allergy. We gave steroid for 2 weeks and bleeding was stop. Conclusion: Capsul endoscopy was very useful to look for the source of bleeding from intestine. (Keywords: Endoscopy, capsule endoscopy, children, Hematoschezia)

P0192

Title: HELICOBACTER PYLORI INFECTION IN INFANTS

Eva Jeumpa Sulaeman 1
Summary:

HELIcobacter pylori INFECTION IN INFANTS Eva Jeumpa Sulaeman, ‘Harapan Kita’ Children and Mother Hospital, Jakarta, Indonesia. Helicobacter Pylori (HP) infection affected more than half of population globally especially in developing countries. It can infect very young children. However, there no report about HP infection in infants. We reported some infant patients who get HP infection in very young age. Method: All infants less than one year old with HP positive results from January 1, 2005 to December 31, 2006, were included in this study. Results: During two years period, there were seven infants with HP positive. The average age was 5 months (range 2-8 months). The most common symptom was hematemesis in 5 out of 7 patients (71.4 %) and recurrent vomiting in 2 patients. At the time of presentation, patients already suffered from hematemesis for 3 days to 4 months (average 2 months). Gastroscopy examination revealed esophagogastrroduodenitis in 5 patients (71.4%), Erosive gastritis in one patient and nodules in the duodenum in 2 patients (28.6%). After two weeks therapy with triple drugs, all symptoms were disappearing. No recurrence was reported after one year follow up. Conclusions: 1. HP infections were found in our infant patients and its diagnosis was difficult. 2. The most common symptom was hematemesis. 3. All of our patients had good response to therapy.

Title:

Osteopontin-null mice are protected from Citrobacter rodentium-induced colonic epithelial cell hyperplasia

Eytan Wine 1, Grace Shen-Tu 1, Bo-Yee Ngan 1, Jaro Sodek 2, Ron Zohar 2, Philip M Sherman 1
1) Research Institute, Hospital for Sick Children, University of Toronto, Toronto, Canada 2) University of Toronto, Toronto, Canada

Summary:

Background: Chronic inflammatory bowel diseases (IBD) are associated with abnormal immune responses to intestinal bacteria. Although the inflammatory mediator osteopontin (OPN) is upregulated in IBD, its precise role in disease pathogenesis remains unclear. Objective: To delineate the role of OPN in host responses to the murine enteric pathogen Citrobacter rodentium using mouse-derived OPN+/+ and-/ fibroblasts and infection of either wild-type (WT) or OPN gene knockout mice, as a murine model of IBD. Methods: The role of OPN in microbial adhesion and bacterial-induced rearrangements of the cytoskeleton was determined by infecting fibroblasts isolated from WT and OPN-null mice with C. rodentium. Adult WT and OPN-null mice were orogastrically inoculated with either C. rodentium (10^8 CFU in 0.1ml) or LB broth (as sham control); body weight and diarrhea were then followed for 10 days. Colonic epithelial cell hyperplasia, mucosal inflammation, bacterial translocation, and cytokine release were measured. Results: Lack of OPN did not decrease adhesion of C. rodentium to mouse fibroblasts [54±21 (mean±SEM) vs. 44±15 bacteria/cell, N=3. p>0.05]. By contrast, the formation of rearrangements of the cytoskeleton, as demonstrated by attaching-effacing lesions, was reduced in cells derived from OPN-null mice. Colonic epithelial cell hyperplasia, which is the hallmark of C. rodentium infection, was reduced in OPN-null mice relative to WT (218±13 vs 295±15 micrometer, p=0.01). Colonization of mice with C. rodentium was also reduced in OPN-null mice (3.9X10^4±3.2X10^3 vs 2.8X10^5±8X10^4. p<0.005). By contrast, there was no difference in body weight, disease activity, bacterial translocation or overall histology score between infected WT (N=8) and infected OPN-null (N=15) mice, or in the pro-inflammatory chemokines and cytokines produced by splenocytes isolated from WT and OPN-null infected mice. Conclusion: Lack of OPN results in decreased pedestal formation in response to C. rodentium infection, indicating that OPN mediates signaling events that impact on the pathogenesis of disease through rearrangements of the host cell cytoskeleton. Interruption of this signal transduction process is associated with a reduction in C. rodentium-induced colonic epithelial cell hyperplasia. These findings demonstrate a role for OPN in mediating host responses to injury and inflammation caused by a microbial pathogen, and could thereby explain its role in the pathogenesis of IBD.

Title:

Endoscopic Findings in Pediatric Patients with Suspect Ingestion of Strange Body

Alfredo Floro Cantalice Neto 1, Daltro Luiz Alves Nunes 1, Fausto Pimentel 1, Cintia Steinhaus 1, Maria do Carmo Appel Zim 1, Jose Alexandre Welter 1
1) GASTROENTEROLOGY PEDIATRIC SERVICE OF SANTO ANTONIO CHILD HOSPITAL, PORTO ALEGRE, BRAZIL

Summary:

Objective: To describe the causistic of high digestive endoscopies (HDE) in children and adolescents directed to a pediatric digestive endoscopy service because they were suspect of strange body ingestion. Methodology: Retrospective study of patients with suspect of strange body ingestion submitted to HDE, in April 2001 to April 2007, in Santa Casa Hospital Complex of Porto Alegre, Brazil. The endoscopic procedures were accomplished with videoendoscope Olympus GIFV-100 and the statistic analysis was accomplished through SSPS-13. The level of significance considered was p=0.05. Results: In a total of 1364 HDEs, 44 were indicated by strange body ingestion (3.22%), so as 31 cases were confirmed in an endoscopic way
(2.27%). The male sex prevailed in relation to the female one, in the suspect of ingestion (68.18%/ 31.82%), and in the confirmed cases (67.74%/ 32.26%). There was a greater relation with the first child (61.36%); being the esophagus impact (51.61%), in this upper third part was the place of greater prevalence. The coins were the most found strange body (51.61%). Conclusions: The age group which there was a greater incidence of strange body ingestion cases occurred in children aged less than 5 years old, with prevalence of male sex. The coins were the more often strange body found. The more impact place was the esophagus in its upper third part. These data are in agreement to the literature and it demonstrates the need of greater care and attention to the children and orientations to the relatives and companions of these patients.

P0195

Title: Esophageal Stenosis in Children and Adolescents: Aetiology, Clinical Aspects and Endoscopic Treatment

Alfredo Floro Cantalice Neto 1, Daltro Luiz Alves Nunes 1, Fausto Pimentel 1, Cintia Steinhaus 1, Maria do Carmo Appel Zim 1, Jose Alexandre Welter 1

1) GASTROENTEROLOGY PEDIATRIC SERVICE OF SANTO ANTONIO CHILD HOSPITAL, PORTO ALEGRE, BRAZIL

Summary:

Objective: To describe the experience with esophageal stenosis in children and adolescents directed to a pediatric digestive endoscopy service. Methodology: Retrospective study of patients with esophagus stenosis that were submitted to the high digestive endoscopy, between May 2001 and May 2007, in Santa Casa Hospital Complex of Porto Alegre, Brazil. The endoscopic procedures were accomplished with videoendoscope Olympus GIF-V-100 and the dilations were accomplished with Savary-Gilliard, that varied between 15 (5mm) to 38 French (12.8 mm). The comparison between the ages and between the number of dilations between the stenosis groups were accomplished through Kolmogorov-Smirnov test, calculated in SPSS system. The level of significance considered was p=0.05. Results: During the study period it was found 52 (3.8%) patients with esophagus stenosis between 1364 children and adolescents of 6 months to 15 years. The average age was 5 years, with standard deviation of 4.1 years (median of 3.5 years), being 63.5% of male sex. All the patients presented as main complaint the dysphagia and/or vomit. In relation to the aetiology of intrinsic stenosis (n=50), 23 (44.2%) were peptical; 12 (23%) secondary to the surgery of esophagus atresia; 7 (13.4%) caustic and 5 (9.6%), congenital. Two patients presented important stenosis of extrinsic origin. One hundred forty-two sessions of dilation were accomplished in 48 patients (2.9 dilations/patient). Two patients presented esophagus perforation post-dilatation (1.4% of the total dilations). All the other patients presented satisfactory results after dilations sessions, with improvement of symptoms. Conclusions: The more common esophageal stenosis is the peptical, being that one with caustic aetiology with more elevated morbidity and the need of a greater number of dilation sessions. All the patients with esophagus stenosis presented dysphagia and/or vomit. The endoscopic treatment of esophageal stenosis in children and adolescents presented good results and low index of complications.

P0196

Title: Intramural duodenal hematoma post biopsy: an uncommon complication of endoscopy non-therapeutical in children

Alfredo Floro Cantalice Neto 1, Daltro Luiz Alves Nunes 1, Fausto Pimentel 1, Cintia Steinhaus 1, Maria do Carmo Appel Zim 1, Jose Alexandre Welter 1

1) GASTROENTEROLOGY PEDIATRIC SERVICE OF SANTO ANTONIO CHILD HOSPITAL, PORTO ALEGRE, BRAZIL

Summary:

Objectives: To mention an intramural duodenal hematoma case, that is an infrequent complication in high digestive endoscopies (HDEs) in children. Methodology: patient aged 5 years and 11 months years old (weight lower than percentile 5 and height in percentile 5), with suspect of celiac disease is directed to the Pediatric Endoscopy service of Santa Casa Hospital Complex of Porto Alegre, Brasil. When accomplished the HDE, with the patient under general anesthesia, it was used the Olympus GIF-V-100 videendoscope. It was accomplished aleatory biopsies in duodenum and the procedure occurred without intercurrent. Results: Child returns to the emergency of the same hospital four hours after the procedure, with clinic of abdominal pain and vomits uncoercible. It was accomplished acute abdomen radiograph, it proved distention in gastric tube by probable duodenal hematoma, confirmed after abdomen tomography. It remained unaltered, with the patient without oral diet, with nasogastric probe and using total parenteral nutrition. The child accomplished laboratory exams that show pancreatitis (amylase 458 and lipase 350). After done the control abdomen tomography each 7 days, it demonstrated gradual decrease of hematoma until its completed resolution that occurred after 41 days of hospitalization. Conclusions: The intramural duodenal hematoma is an infrequent complication; however, the endoscopist must be attentive in a subgroup of patients, including those with hemostatic disorders, children with growth retard and Noonan Syndrome. The clinic presentation of this complication is similar to most cases, which includes abdominal pain and vomit, often associated with pancreas inflammation. The prognostic in general is favorable and without sequel, except in sporadic cases of perforation and/or chronic pancreatitis.
Title: Prolonged Esophageal pHmetry in Research of Pathological Gastroesophageal Reflux in Children

Alfredo Floro Cantalice Neto 1, Daltro Luiz Alves Nunes 1, Fausto Pimentel 1, Cintia Steinhaus 1, Maria do Carmo Appel Zim 1, Tatiana Caon Guerra 1

1) GASTROENTEROLOGY PEDIATRIC SERVICE OF SANTO ANTONIO CHILD HOSPITAL (SACH), PORTO ALEGRE, BRAZIL

Summary:
Objective: To describe the experience with Prolonged Esophageal pHmetry (PEP) in children, when indicated by digestive problems or respiratory/otorhinolaryngology (ORL), watching its importance during the clinical practice. Methodology: Retrospective study in pediatric patients, directed to the gastroenterology service of SACH to accomplish PEP, during the period of February 2003 to August 2007. The PEP was accomplished using a probe with antimony electrodes, connected to a digital data collector (SMP 2128 Sigma Instruments). The drawings were analyzed by the EsograpH 3.0 software (Sigma Instruments). During the study period, the patients' parents had a detailed diary of their activities. To children above one year-old, the PEP was considered abnormal when the pH time less or equal to 4 (reflux index) was greater 5% of exam duration and greater than 10% to children aged less than one year-old. The statistical analysis was accomplished with the help of SPSS, accepting a significance level lower than 95% (p<0.05). Results: It were included 112 exams, 62 (55.3%) were normal and 50 (44.7%) altered. The age average was 30 months, with standard deviation of 29.6 months (median of 18 months), being 64.5% of male sex. Forty-eight patients were included in digestive complaints group and 64 in respiratory symptoms/ORL group. The main digestive complaint were vomits/regurgitation (24.1% of accomplished exams- 27 patients), followed abdominal pain (11.6%-13 patients). The main respiratory complaints were sibilance (29.5%- 33 patients) and chronic cough (12.5%- 14 patients). Conclusions: The respiratory and otorhinolaryngological complaints were more often in patients whom accomplished PEP. The main complaint was bronchospasm. In relation to the digestive complaints, the vomits/regurgitations were the more prevalent. About half of respiratory/ORL group patients had correlation between the symptoms in study with the pH inferior to 4. When indicated by respiratory/ORL symptoms the esophageal pHmetry has more likelihood to be altered then when accomplished by digestive problems.

Title: METABOLIC DIFFERENCES BETWEEN MALE AND FEMALE ADOLESCENTS WITH NON-ALCOHOLIC FATTY LIVER DISEASE

Maria Teresa Bechere Fernandes 1, Alexandre Archanjo Ferraro 2, Ramiro Anthero de Azevedo 1, Ulysses Fagundes Neto 1

1) UNIFESP, São Paulo, Brasil 2) USP, São Paulo, Brasil

Summary:
Introduction: Nonalcoholic Fatty Liver Disease (NAFLD) is considered a major cause of chronic liver disease in obese children and adolescents. Age, sex, ethnicity, dietary habits and physical activity are risk factors for NAFLD. Objectives: To identify differences in clinical or laboratory variables between sexes in adolescents with NAFLD. Methodology: Obese adolescents were identified among students at a public school in the city of Embu or referred by pediatric clinics in the cities of Embu and Taboão da Serra. Inclusion criteria for this study were a Body Mass Index above the 95th percentile (NCHS) and an age of 10 to 19. Exclusion criteria for this study were the presence of endocrinological or neurological diseases associated with obesity or hepatitis. NAFLD was detected using ultrasound. The total number of participants was 90 (36 boys and 54 girls). A clinical and laboratory evaluation was conducted for all of the adolescents. Variables that showed a statistically significant association with NAFLD in a univariate logistic regression were studied. Results: It was observed that GGT Index, cholesterol and LDL cholesterol variables interacted with sex, or in other words, there was a significant statistical difference in the values of these variables between male and female adolescents. Female adolescents with NAFLD are 14.28 times more likely to present an altered GGT Index, whereas for boys this chance was 0.8. With regard to cholesterol, the risk is 6.99 times for girls versus 1.2 for boys. And for LDL cholesterol the risk is 8.15 times for girls and 1.25 for boys. LDL cholesterol was also associated with family income; adolescents with NAFLD are 8.97 times more likely to have low family income. Conclusion: Female adolescents with NAFLD showed metabolic behavior unlike that of boys. Future studies should focus on determining the role of different metabolic behaviors between the sexes during the onset of NAFLD.

Title: PREDICTIVE FACTORS FOR NONALCOHOLIC FATTY LIVER DISEASE IN OBESE UNDERPRIVILEGED ADOLESCENTS LIVING ON THE OUTSKIRTS OF THE CITY OF SÃO PAULO

Maria Teresa Bechere Fernandes 1, Alexandre Archanjo Ferraro 2, Ramiro Anthero de Azevedo 1, Ulysses Fagundes Neto 2
Summary:
Introduction: Fatty Liver Disease covers a wide range of clinical conditions that result in the pathological accumulation of triglycerides in the liver (steatosis) and progressive necroinflammatory liver disease (steatohepatitis). Recent studies have shown the particular behavior of this disease in the pediatric age bracket. Objectives: The present study was carried out in the cities of Embu and Taboão da Serra (São Paulo) with the aim of detecting the presence of Nonalcoholic Fatty Liver Disease (NAFLD) and predictive factors of this disease in obese school-aged adolescents. Methodology: Obese adolescents were identified among students at a public school in the city of Embu or referred by pediatric clinics in the cities of Embu and Taboão da Serra. Inclusion criteria for this study were a Body Mass Index above the 95th percentile (NCHS) and an age of 10 to 19. Exclusion criteria for this study were the presence of endocrinological or neurological diseases associated with obesity or hepatitis. NAFLD was detected using ultrasound. The total number of participants was 90 (36 boys and 54 girls). Results: The prevalence of NAFLD was 15.5%. The average age of the group was 13.1 years. We did not detect any significant differences between the group of obese adolescents with or without NAFLD for variables related to history of pregnancy, morbidity, family or behavior. Waist measurement and visceral fat were higher in the group of adolescents with NAFLD than in the group without the disease (95.11cm x 90.33cm p=0.04 and 4.46cm x 3.65cm p=0.01 respectively). Significantly elevated laboratory variables in the NAFLD group were cholesterol (p=0.01), LDL cholesterol (p=0.01), triglycerides (p=0.05), AST/ALT ratio (p=0.04), GGT Index (p=0.03) and ferritin (p=0.03). The variables that, after being submitted to logistic regression analysis and adjusted for age, sex and family income, were shown to be predictive factors for NAFLD and are as follows: formal education of adolescent (OR=4.64 [1.17-18-42]), cholesterol (OR=2.93 [1.23-6.97]), LDL cholesterol (OR=2.79 [1.26-6.18]), visceral fat (OR=1.86 [1.02-3.38]), GGT Index (OR=3.91 [1.01-15.16]). Conclusion: Puberty in obese adolescents with hormonal and glycemic homeostasis changes, associated with genetic factors (family history and race) can predispose them to NAFLD. This disease begins with steatosis and, during this phase, as observed in the present study, may present some inflammatory markers such as oxidative stress and liver damage (AST/ALT ratio, GGT Index, LDL cholesterol and ferritin).

Title:
BILIARY TRACT ATRESIA AND CYTOMEGALOVIRUS INFECTION

Fernando Sarmiento 1, Ricardo Yepez 1, Lina Eugenia Jaramillo 2, Ariel Ivan Ruiz 3
1) Pediatrics Department - Universidad Nacional de Colombia - Hospital de la Misericordia, Bogotá, Colombia 2) Pathology Department - Universidad Nacional de Colombia - Hospital de la Misericordia, Bogotá, Colombia 3) Obstetrics and Gynecology Department - Clinical Research Institute - Universidad Nacional de Colombia, Bogotá, Colombia

Summary:
Objective: To study the possible association between Cytomegalovirus (CMV) infection and biliary tract atresia in order to develop an prospective case-control trial. Materials and methods: Design: This is a retrospective descriptive study. A review is made of cases of biliary atresia treated at the Pediatric University hospital, a national referral center in an eleven-year period started on January 1st 1997, finished on December 31 2007. Infants less than 6 months of age were included with cholestatic jaundice who were taken to laparotomy/laparoscopy with proven atresia either by direct visualization or by intraoperative cholangiography or histopathology. The presence of CMV infection was evaluated with serum IgM. One of the children also had viral load. Results: Along the 11 year observation period, 49 patients were found with a diagnosis of biliary tract atresia, out of which 28 were tested in Serum for IgM CMV: Out of these, 12 (43%) tested positive. The child with viral load tested negative. Three patients positive for IgM against CMV received treatment with gancyclovir for 14 days with clinical improvement of their cholestatic pattern. Conclusions: We have observed with this study a high percentage of CMV infection in patients who proved to have biliary tract atresia, this is a fact which reinforces the suspicion of the existing association and provides the basis to conduct a 5 years case-control prospective study assessing pp-65 antigen, immunoperoxidase and Polymerase chain reaction, to better establish the role played by the virus in the pathogenity of biliary atresia.

Title:
CLINICAL CHARACTERIZATION OF CHILDREN WITH BILIARY TRACT ATRESIA

Fernando Sarmiento 1, Ricardo Yepez 2
1) Universidad Nacional de Colombia - School of Medicine, Bogotá, Colombia 2) Fundación Hospital de la Misericordia, Bogotá, Colombia

Summary:
Objective: To describe the clinical characteristics of a cohort of patients with biliary tract atresia attended at the pediatric University Hospital. Materials and methods: Retrospective cohort study for the clinical characterization of a group of patients attended at the Pediatric University Hospital, a national referral center in Colombia during an 11 year period comprised from January 1st 1997 to December 31st 2007. Clinical records were
Effect of Intragastric Acidity on Double channel pH probe Results.

Seth Septer 2, Cristina Fernandez 2, Aimin Chen 2, Fernando Zapata 1
1) Childrens’ Hospital, Omaha, United States 2) Creighton University, Omaha, United States

Summary:

BACKGROUND: pH probe studies are performed in many children to evaluate gastroesophageal reflux disease. Standard studies are performed with channels above the lower esophageal sphincter (LES) only. Placing an intragastric pH channel is sometimes used to analyze acid control when a patient is using medical therapy. This study examines the relationship between intragastric acidity in patients without medication and gastroesophageal reflux measured by pH channel proximal to the LES. METHODS: A retrospective database analysis of pH probes performed on pediatric patients at Children’s Hospital in Omaha, Nebraska was completed. Data was compiled on the presenting symptoms, percentage of time intragastric pH was < 4, the total time esophageal pH was < 4 and the Boix-Ochoa score. Total time with pH < 4 in the esophagus and Boix-Ochoa scores were analyzed in groups with different levels of intragastric acidity using analysis of variance testing. RESULTS: Eighty-one pH probe studies performed...
in children were evaluated. Patients were split into four groups based on the percentage of time intragastric pH < 4. Mean time of esophageal pH < 4 was greater in those patients with greater stomach acidity (pH < 4 greater than 80% of the time) than in those with lesser duration of stomach acidity (classified as 20% or less of study time with pH < 4) (65 minutes versus 8.8 minutes). Boix Ochoa scores were also significantly different. The decreased intragastric acidity group mean Boix Ochoa = 6.1, and the group with intragastric pH < 4 for greater than 80% of the time had mean Boix Ochoa scores of 24.2 (p values <0.05). CONCLUSIONS: During pH probe studies, decreased time with intragastric pH < 4 correlated with lower Boix-Ochoa scores. Using only a proximal channel above the LES may lead to an elevated rate of false negative studies, as stomach acidity is not known in these cases and may be inadequate to evaluate reflux of acid to the level of a probe above the LES. These patients may still have significant reflux of alkali material causing symptoms. Using a single channel pH probe may be inaccurate for a subset of patients in which the intragastric pH is inadequate (< 20% of the study). These patients may require double channel pH probe studies or impedance studies for accurate diagnosis of gastroesophageal reflux.

P0204
Title: EFFECTIVITY OF PROBIOTICS FOR PREVENTION OF PERSISTENT DIARRHOEA IN CHILDREN PLACEBO-CONTROLLED CLINICAL TRIAL
Adriana Useche 1, Jesús Ardila 1, Fernando Sarmiento 1, Ariel Ivan Ruiz 2
1) Pediatrics Department - Universidad Nacional de Colombia - Hospital de la Misericordia, Bogotá, Colombia 2) Obstetrics and Gynecology Department - Clinical Research Institute - Universidad Nacional de Colombia, Bogotá, Colombia

Summary: Objective: Assessment of the effectivity of a lyophilized preparation containing 9 probiotics species and subspecies (1.5 grams amount to 150 trillion bacteriae) in children under 5 years, administered in a single dose during an acute diarrhoea episode to prevent it from becoming a persistent diarrhoea one. Materials and Methods: Design: triple-blind, placebo-controlled clinical experiment. Persistent diarrhoea was defined as one lasting for over seven days. The OMS definition wasn’t considered. In our experience it has shown limitations and misleads clinical orientation in underdeveloped countries. Four hundred sixty one children with ages ranging between 1 and 60 months were included, and randomly assigned to two groups, the first of which included children who would receive a placebo dissolved in a fixed oral rehydrating solution volume (50 ml) (Group A), or a combination of streptococcus salivarius subspecies thermophilus, bifidobacteriae (breve, infantis and lungum), lactobacillus (acidophilus, plantarum, casei, delbrueckii) and streptococcus faecium, dissolved in the same oral rehydrating solution volume (Group B). Cases were followed telephonically until diarrhoea cessation. Results: From a group of 461 patients 44 were excluded due to different reasons. It wasn’t possible to follow evolution in seven cases. Four hundred ten children were actually considered (89% were telephonically followed). There weren’t any significant differences between groups A (n=208) and B (n=202) as to age, gender, weight, elapsed time suffering from diarrhoea previous to arrival, and weight-age ratio. Persistence of diarrhoea over seven days amounted to 32.2% among the subjects from the placebo group, and 22.7% among the subjects whom probiotics were administered (p=0.042). Conclusion: Administration of probiotics to children has been associated to decrease in duration of acute diarrhoea, but its usefulness to prevent persistent diarrhoea episodes has been only suggested in a few studies. A single dose of a multispecies lyophilized probiotics preparation dissolved in oral rehydration serum among children between 1 to 60 months suffering from acute diarrhoea is useful to prevent it from evolving to persistent diarrhoea.

P0205
Title: EFFECTS ON DIARRHOEA’S DURATION OF NINE SPECIES AND SUBSPECIES OF PROBIOTICS – DOUBLE-BLIND RANDOMIZED CLINICAL TRIAL
Fernando Sarmiento 1, Jesús Ardila 1, Adriana Useche 1, Ariel Ivan Ruiz 2
1) Pediatrics Department - Universidad Nacional de Colombia - Hospital de la Misericordia, Bogotá, Colombia 2) Obstetrics and Gynecology Department - Clinical Research Institute - Universidad Nacional de Colombia, Bogotá, Colombia

Summary: Objective: Assess the effectivity of a lyophilized preparation including 9 probiotics species and subspecies (1.5 grams amount to 150 trillion bacteriae) in a single dose during acute diarrhoea treatment. Materials and methods: Design: Double-blind, placebo-controlled randomized clinical trial. Acute diarrhoea was defined as one lasting for less than 7 days, based on physiological change on the epithelium and on the self-limited condition, given that this space of time is more useful while handling this pathology in underdeveloped countries. Four hundred sixty one children between 1 and 60 months old were included, whose participation was authorized by their parents. The children were randomly assigned upon arrival to groups, one of which (Group A) contained children who would receive placebo dissolved in a fixed oral rehydrating solution volume (50ml), or a combination of streptococcus salivarius subspecies thermophilus, bifidobacteriae (breve, infantis and lungum), lactobacillus (acidophilus, plantarum, casei, delbrueckii) and streptococcus faecium, dissolved in the same oral rehydrating solution volume (Group B). Children who showed primary immu-
nodedeficiency, children under treatment with immunosuppressors, probiotics, or children suffering from previous bowel diseases were excluded. Evolution was followed by telephone till seventh day. Results: From a group of 461 patients 44 were excluded due to different causes. In 7 cases it wasn't possible to continue phone call monitoring. Four hundred and ten patients were included in the study. There weren't any significant differences between Groups A (n=208) and B (n=202) as to age, gender, weight, elapsed time suffering from diarrhoea before arrival, and weight-age ratio. Duration of diarrhoea decreased by 17.5 hours in the experimental group, compared to the placebo group (p = 0.028). Conclusions: A mixture of nine probiotics species and subspecies administered in a single dose at the beginning of the acute diarrhoea clinical picture in children between 1 and 60 months is useful as part of the treatment and significantly shortens the evolution time of the disease. To date many clinical studies have only used some isolated lactobacillus and bifidobacteriae strains. Information on the utility of the mixture of more than two probiotics is scarce.

P0206

Title:
MALACOPLAKIA IN A 11 YEARS-OLD GIRL WHOSE DUODENUM AND COLON ARE SIMULTANEOUSLY COMPROMISED.

Sofía García 1, Diego Grajales 1, Tatiana Castro 1, Lina Jaramillo 2, Susana Murcia 2, Fernando Sarmiento 1
1) Pediatrics Department - Universidad Nacional de Colombia - Hospital de la Misericordia, Bogotá, Colombia 2) Pathology Department - Universidad Nacional de Colombia - Hospital de la Misericordia, Bogotá, Colombia

Summary:
Objective: To describe a Malacoplakia case affecting simultaneously Colon and Duodenum. Materials and methods: The patient, a girl, started suffering enterorragia and melenas at 18 months of age. She was treated for the first time in our hospital being 48 months old; HI and low Endoscopies were performed. She did not return to further treatment and was treated at other hospitals only on symptomatic basis. Came back to be treated again on Jan. 14th, 2008 due to enterorragic exacerbation, melenas, abdominal pain and intermittent urinary symptoms, presented during the last 3 months. The first endoscopy revealed duodenum and colon lesions; the last endoscopy showed severe rectosigmoide damage. Results: After physical examination: Weight: 28 Kg. Height: 128 cm. BMI: 17.08. BP: 106/53 mmHg. Endoscopy showed generalized open nodular lesions on the duodenum mucose, and colonoscopy evidenced edema active layered bleeding, ulcers and irregular pavin on the rectosigmoide. Biopsies showed the described histological characteristics of Malacoplakia disease: foamy macrophagus (Van Hansemann cells) with positive citoplasmatic inclusions (Michaelis-Gutmann bodies), with PAS, calcium, iron. Uroanalysis suggests urinary infection. Renogram shows decrease in TFG function on left kidney (17%), while right kidney is normal. Pulmonar CT scan evidenced bronchoectasias. Because the severe clinical picture, the patient was treated with methylprednisolone for 5 days; azathioprine and prednisone for 8 days and 1 month, respectively. At this moment is asymptomatic, with ambulatory control consisting of daily profilaxis with trimethoprim-sulfa and inenalapril. Conclusion: Malacoplakia is an infrequent granulomatose disease which can be found at any age. Severe gastrointestinal tract damage is not frequent, and until now there are no reports of simultaneous duodenum and colon affection. As a consequence of her chronic disease, for which there is no specific treatment, the patient presents chronic malnutrition with an adequate BMI at the moment. It is probable that both, severe urinary system damage and bronchoectasia, are part of the same disease. For that reason an integral study has been started.

P0207

Title:
Abetalipoproteinemia: case report

Fernando Filizzola de Mattos 1, Luciano Amedée Peret Filho 1, Suzana Fonseca de Oliveira Melo 1, Raquel dos Santos Malheiros 1, Ana Cristina Moreira 1, Gil P. M. Pena 2
1) Children’s Hospital João Paulo II - FHEMIG, Belo Horizonte, Brazil 2) Felício Rocho Hospital, Belo Horizonte, Brazil

Summary:
Abetalipoproteinemia: a rare autosomal recessive disorder of lipoprotein metabolism in which lipoproteins containing apolipoprotein B are not synthesized. Method: Case report. Results: EESC, female, 1-year-old, referred to HIJP II due to diarrhea, important malnutrition with prominent flattening in the weight curve since the birth. Physical examination: abdominal distention diarrhea and serious malnutrition, weight 5200g. Laboratory: important anemia, hypcholesterolemia and hypotriglyceridemia reaching undetectable levels. Intestinal transit: severe architectural distortion of jejunum and ileum, mild thickening of mucous folds in proximal jejunum with barium flocculation, suggestive of malabsorption. Negative anti-endomysium and anti-gliadin antibodies. Jejunal biopsy: moderately hypotrophic intestinal villi; no intraepithelial lymphhoctysis; vaculated apical enterocytes, with cytoplasmic clearing, suggestive of abetalipoproteinemia. After dietary orientation with use of essential fatty acids and vitamin supplemenation, she was discharged for ambulatory follow-up. Weight records, respectively, two, three, five and nine months after discharge were 6075g, 6820g, 7290g and 7895g. In the last visit, with 1-year-and-9-month-old age, her stature was 76cm. Conclusion: Although rare, abetalipoproteinemia must be considered in the differential diagnosis of chronic diarrhea and secondary malnutrition, since it can evolve with serious neurological and ophthalmic damages, if not early diagnosed, with institution of vitamin supplemenation, as well as appropriated nutritional management. Key-
words: abetalipoproteinemia, hypcholesterolemia, jejunal biopsy 1. Department of Pediatric Gastroenterology, Children’s Hospital João Paulo II, FHEMIG, Belo Horizonte, Minas Gerais, Brazil. 2. Departament of Pathology, Felicio Rocho Hospital, Belo Horizonte, Minas Gerais, Brazil

P0208

Title: EFFECTIVENESS VALIDATION OF THE RAPID UREASE TEST FOR THE DIAGNOSIS OF INFECTION BY HELICOBACTER PYLORI IN CHILDREN

Fernando Medina 1
1) Universidad Industrial de Santander, Bucaramanga, Colombia

Summary:
1) Profesor adjunto de Gastroenterología Pediátrica de la Universidad Industrial de Santander. Bucaramanga, Colombia. 2) Residente de tercer año de Pediatría de la Universidad Industrial de Santander. 3) Médico pediatra epidemiólogo, Docente Universidad Industrial de Santander. 4) Estudiante de Medicina noveno semestre de la Universidad Industrial de Santander ABSTRACT Antecedents: The Helicobacter Pylori is an urease’s producer bacteria, that affects mainly underdeveloped countries (38 to 90% children’s prevalence). Its transmission seems to be oral–oral or fecal–oral. This infection entails to chronicle inflammation of the duodenum or antrum or piloric region with later ulcer, adenocarcinoma or limphoma. It causes dispesias and recurrent abdominal pain (RAP). The diagnostic tests include rapid urease and histopathology (gold standard). Aim: Analyzing rapid urease test (RUT) effectiveness determining the prevalence of helicobacter pylori infection in children. Methods: Prospective study using diagnostic-technology evaluation with cross-sectional sampling. 50 patients, from 1 to 15 years old, with dyspepsia or RAP diagnosis from the pediatric gastroenterologist’s office, which required endoscopic study, with two biopsies taken from antrum and one from gastric body were the sample for this study. The RUT was applied to one antral sample and the others were sent to histopathology. The effectiveness was determined by sensitivity, specificity, and positive and negative predictive values (PPV and NPV). Results: Prevalence 8%: for ten years old and older the value was greater 12%, while undernourished patients presented 16.6%. Without gender discrimination. Sensitivity 50%, specificity 65%, PPV 11.1% and NPV 93.7%. The agreement between the 2 tests was of 64% with Kappa of 0.0586 (low agreement). Conclusion: Finding’s prevalence is below the described one, probably because the patients came from private office and are well nourished, which makes them less susceptible to the infection. Nevertheless, there is greater rate of infection in undernourished patients and in the older ones, which agrees with literature. Test effectiveness was lower than in other studies, except for the NPV. It is suggested to extend the sample to dwells general population. KEYWORDS: RAPID UREASE, H. PYLORI, CHILDREN. Correspondence To: Dr. Fernando Alonso Medina Monroy. Cra. 26 N. 48-26 ofi 108 Bucaramanga, Colombia TEL: 57 7 6475970 E-mail: fernandomedina@hotmail.com

P0209

Title: Tolerance to acid and alkalyne pH of microorganisms with biotherapeutic and probiotic activity

Fernando Medina 1
1) Universidad de Santander, UDES, Bucaramanga, Colombia

Summary:
1) Laboratorio de Biologia Molecular y Biotecnologia, Facultad de Ciencias, Universidad de Santander, UDES, Bucaramanga Colombia. 2) Profesor adjunto de Gastroenterologü”a Pediátrica de la Universidad Industrial de Santander. Bucaramanga Colombia. The biotherapeutics or probiotics are frequently used to decrease diarrhea episodes and treat acute gastroenteritis. These compounds are mainly formed by microorganisms such as yeast and bacteria who have developed physiological and biochemical characteristics to tolerate extreme pH conditions. However, it is little known about their viability when they are used at similar pH conditions to human gastrointestinal tract by in vitro studies Aim: To Evaluate pH tolerance under similar conditions to human gastrointestinal tract to four biotherapeutics Methods: Four biotherapeutics were evaluated such as: Enterogermina (EG); Sacharomyces Boulardii, (SB); a compound of Lactobacilli, Bifidobacteria and Fructo-oligosaccharides (LBF) and; a multistrain (VSL#3). To low pH conditions the cells were growth in 0.32% pepsin (pH 2.18) simulating pH of gastric juice at 0, 30, 60, 90 and 120 min. To high pH, the cells were growth in different concentrations of bile salts as follow: 0.25, 0.5, 0.75 and 1% (w/v). The tolerance was determined by the viability of cells by counting the number of colony formed units per milliliter (CFU/ml) onto agar plates. Results: No significant reduction of CFU/ml was observed at low pH to all biotherapeutics (p>0.089). However to LBF and SB, the CFU/ml decreased at high pH at 0.50 and 1% of bile salts (p<0.048). To VSL#3 a decreasing of counts was also observed (p<0.056). To EG the counting cells fluctuations were more related with an increment than decrement. Conclusion: The results suggest that all probiotics are able to tolerate low pH. However, CFU decreasing at high pH to SB, LBF and VSL#3 suggests a bacteriostatic than bactericide effect of bile salts. All microorganisms tested were able to tolerate high pH keeping high CFU counts. KEYWORDS: biotherapeutics, pH tolerance probiotics, bile salts, pesin Correspondence To: Dr. Fernando Alonso Medina Monroy. Bucaramanga, Colombia Cra. 26 N. 48-26 ofi108 TEL: 57 7 6475970 E-mail: fernandomedina@hotmail.com
P0210

Title: CELIAC CHILDREN AT DIAGNOSIS AND AFTER GFD: DOMINANT MUCOSA-ASSOCIATED MICROBIOTA

Barbato M. 1, Iebba V. 2, Maiella G. 1, Totino V. 2, Aleandri M. 2, Cucchiara S. 1

1) Pediatric Gastroenterology Unit La Sapienza University, Rome, Italy 2) Microbiology Unit La Sapienza University, Rome, Italy

Summary:

Background Celiac disease (CD) is an immune-mediated enteropathy, characterized by small bowel chronic inflammation. Its pathogenesis is multifactorial: exposure to toxic prolamins and appropriate HLA-DQ haplotype are necessary but not sufficient for contracting CD. Although modification of gut microbiota seems to be involved in the pathogenesis of other chronic inflammatory bowel diseases (IBD), its possible role in CD has never been investigated. Aims To identify by a molecular approach the microbiota colonizing the upper small bowel of children with CD at diagnosis and after 8 months of gluten free diet (GFD), in order to verify its possible role in the pathogenesis of Celiac Disease. Methods Mucosal-associated bacteria from duodenal biopsies of 12 celiac children aged 5-15 years, (at diagnosis and after 8 months of GFD), and of 8 healthy controls were investigated. Total DNA was extracted, and 16S ribosomal DNA was amplified by PCR. Amplification products were separated by temporal temperature gradient gel electrophoresis (TTGE). The profiles obtained were analyzed using GelQuest software (Sequentix) providing a dendogram based on the agglomeration method of UPGMA. Results The main result of the present study, although limited by the sample number, highlighted a different dominant microbiota in the same patients associated with disease state. Specifically, in active disease status, the number of bacterial species/groups revealed by TTGE analysis was slightly reduced respect to same patient in remission status or to asymptomatic controls. We didn’t found a dominant intestinal microbiota associable to celiac disease. Anyway it is possible that the loss of bacterial groups in the active clinical status, observed in almost all patient, could contributes to the pathological process and have a possible role in CD. Conclusion This is the first pediatric report investigating the duodenal mucosa-associated microbiota in celiac children at diagnosis and after GFD. The main result of the present study, although limited by the sample size, highlighted TTGE profiles clusters with clinical status of CD. These preliminary data showed that dominant duodenal microbiota in active disease seems to differ very much from that in remission. These findings suggest a pathogenetic role in CD. Further studies will sequence different DNA fragments, specific for each profile, to identify dominant microbial species characterizing intestinal microbiota in active and in remission disease.

P0211

Title: Ghrelin, PYY and apelin in children with inflammatory bowel disease

Krzysztof Fyderek 1, Andrzej Wedrychowicz 1, Przemyslaw Tomaszik 2, Stanislaw Pieczarkowski 1, Malgorzata Sladek 1, Krystyna Sztefko 2
1) Dept. Pediatrics, Gastroenterology and Nutrition, Jagiellonian University, Krakow, Poland 2) Dept. of Biochemistry Children’s Hospital Jagiellonian University, Krakow, Poland

Summary:

Objective: The objective of our study was to evaluate the ghrelin, PYY and apelin serum concentration of children with inflammatory bowel disease (IBD) and their correlation with activity of the disease. Methods: Forty four children (24 boys, 20 girls, mean age 13.2 yrs, range 6-18 yrs) with active IBD (27 children with Crohn’s disease - CD and 17 children with ulcerative colitis - UC) and 29 healthy controls were submitted into the study. Ghrelin, PYY and apelin concentrations were assessed on admission and after 2 and 6 weeks of treatment using ELISA immunoassays (Phoenix Peptide, USA). Results: We found increased ghrelin concentration in UC group on admission (2.39 ± 1.97 ng/ml) compared to CD (1.97 ± 1.12 ng/ml) and controls (1.67 ± 0.79 ng/ml). After 6 weeks of treatment we observed the increase of the ghrelin concentration in UC (4.05 ± 4.11 ng/ml) and decrease in CD group (1.48 ± 0.84 ng/ml). PYY concentration was comparable on admission in UC group (0.58 ± 0.20 ng/ml), CD (0.58 ± 0.18 ng/ml) and controls (0.50 ± 0.19 ng/ml), increasing after 6 weeks in UC group (0.72 ± 0.37 ng/ml). Apelin concentration on admission was also comparable in UC group (0.59 ± 0.48 ng/ml), CD (0.67 ± 0.27 ng/ml) and controls (0.70 ± 0.29 ng/ml), increasing in UC (0.73 ± 0.38 ng/ml) and decreasing in CD group (0.60 ± 0.33 ng/ml) after 6 weeks. Ghrelin in UC group was correlated with PYY (R=0.7; p<0.05) and apelin (R=0.96; p<0.05), additionally PYY correlated with the Truelove-Witts clinical activity index (R=0.52; p<0.05). Ghrelin in CD group correlated with apelin (R=0.6; p<0.05) and the age of onset of the disease (R=0.50; p<0.05). Both ghrelin and apelin correlated with presence of ASCA antibodies (R=0.60; p<0.05 i R=0.70; p<0.05, respectively). Additionally, apelin correlated with nutritional status (R=0.70; p<0.05) and duration of clinical symptoms (R=0.70; p<0.05). Conclusions: Changes of studied enteric peptides in active CD and UC and during the treatment suggest their specific role in IBD children. The correlations with clinical symptoms and serologic tests imply their influence on the pathogenesis of IBD.

P0212
Introduction. Giardiasis is an intestinal disease caused by the protozoan Giardia lamblia. It is a unicellular organism transmitted by contaminated water and food. In undeveloped countries, it is associated to failure to thrive syndrome and traveler diarrhea. Trophozoites grow in the small intestine and produce symptoms as diarrhea and malabsorption syndrome by intestinal damage. G. lamblia obtains energy mainly by glycolisis. Triosephosphate isomerase (TPI) is a glycolytic enzyme that allows the parasite to obtain energy as ATP. TPI gene is used to characterize G. lamblia strains and produce symptoms as diarrhea and malabsorption syndrome by intestinal damage. G. lamblia obtains energy mainly by glycolisis.

Background, aims: In recent epidemiological studies from Europe and North America the reported incidence of childhood Crohn disease (CD) is 3.4 cases per 100,000 per year, and of ulcerative colitis (UC) 2.3 cases per 100,000 per year. So far the incidence of IBD in Hungary is unknown. On behalf of the of Hungarian Pediatric Gastroenterology Society prospective registry of pediatric inflammatory bowel disease (IBD) was launched from the 1st of January 2007 with the cooperation of 27 institutes (clinics, hospitals, outpatient departments) ensuring the coverage of the whole country. The survey data has been forwarded online to the center of the European Pediatric IBD Registry (Rotterdam). Methods: The participating institutes are requested to fill out questionnaire (78 parameters) about every newly diagnosed IBD patients younger than 18 years. The questionnaire is about epidemiological and antropometrical data, main symptoms, diagnostic procedures (endoscopy, CT, MRI), and the detailed results of histological and imaging procedures. Results: During the first year of HUPIR 131 newly diagnosed cases of IBD were prospectively identified: 78 cases of CD, 44 cases of UC and 9 cases of indeterminate colitis. As a result the annual incidence of childhood IBD was 6.55 cases per 100,000 in 2007, with the incidence of CD being 3.9 cases per 100,000 per year, the incidence of UC 2.2 cases per 100,000 per year and the incidence of indeterminate colitis 0.55 cases per 100,000 per year. The mean age at diagnosis was 13.05 years (range: 1.5-18 years), nevertheless, 3% of patients (4/131) were younger than 5 years. There was a male preponderance in CD, in contrast, sex ratio in UC patients were equal. Positive family history of IBD was registered in 8.4% of patients and 9% of patients with CD were reported to have a fistula. Ileoscopy rate was only 51%, technical problem was the most common reason for the lack of ileal intubation. Oesophagogastroduodenoscopy was performed in 50% of all cases. In 35% were MRI or CT scan made for the detailed verification of the disease. Conclusions: The incidences reported in the first year of HUPIR are similar to the European and North American data. The dominance of CD proved to be also consistent with other studies. Almost 10% of the patients with CD had fistula. Ileal intubation and oesophagogastroduodenoscopy were performed in the half of the cases, and this rate should be improved in the future.
Title:
CHANGING CLINICAL PATTERN IN THE PRESENTATION OF CELIAC DISEASE IN CHILDREN

Gabriela Lesanu 1, Victoria Hurduc 2, Cristina Becheanu 1, Daniela Pacurar 1, Rafira Catu 1, Coriolan Ulmeanu 1
1) Grigore Alexandrescu Emergency Children Hospital, Bucharest, Romania 2) Victor Gomoiu Emergency Children Hospital, Bucharest, Romania

Summary:
Objective: Celiac disease (CD) is much more frequent than previously thought; it was suggested there had been considerable changes in the pattern of presentation. The study investigates trends in clinical presentation of children diagnosed with CD. Methods: We performed a retrospective study on cases diagnosed with CD at Grigore Alexandrescu Emergency Children Hospital in a period of 22 years. We compared two groups of patients: Group 1 - children diagnosed from 1985 to 1995 and Group 2 - children diagnosed from 1996 to 2006. Symptoms at presentation were classified as: typical gastrointestinal symptoms (diarrhea, abdominal distension and failure to thrive), atypical or milder gastrointestinal symptoms (constipation, abdominal pain, intermittent diarrhea and abdominal discomfort) and extraintestinal symptoms (anemia, short stature, etc.). Results: Group 1 consisted of 20 children (mean age 5.9±4.7 years); Group 2 had 152 children (mean age 4.4±3.6 years). Typical gastrointestinal symptoms (“classical” form) were encountered in 18 (90%) patients belonging to Group 1 and in 79 (51.9%) patients coming from Group 2. Two (19.2%) patients in Group 1 and 69 (45.4%) patients in Group 2 had non-“classical” symptoms. Atypical or milder gastrointestinal symptoms in Group 1 and Group 2 were reported in 2 (10 %) vs. 49 (32.2%) patients. Extraintestinal symptoms were not reported in Group 1 and were noticed in 20 (13.2 %) children in Group 2. Four (2.6%) patients in Group 2 were asymptomatic (they underwent screening since they belonged to groups at risk for CD) Total villous atrophy was found in 15% patients in group 1 vs. 9.9% in group 2, subtotal villous atrophy in 60% vs. 23% and partial villous atrophy in 25% vs. 67.1% patients. Conclusion: There was a significant increase in the number of CD patients diagnosed in our hospital during the last years (due to serological tests becoming available to our hospital in 1997 and to increased awareness of celiac disease by physicians). The clinical presentation has changed: classic form is still dominant, but we encountered more celiac children with extraintestinal symptoms or less suggestive gastrointestinal symptoms. Prevalence of mild enteropathy with partial villous atrophy increased.

P0215
Title:
The clay diosmectite in association with oral rehydration salts reduces stool output and diarrhea duration in children with acute watery diarrhoea: Results of 2 randomized double blind placebo-controlled studies

Eduardo Salazar Lindo 1, Jimmy Lee Kok Foo 2, Philippe Garnier 3, Helene Mathiex-Fortunet 3, Christophe Dupont 4
1) DS Consult, Lima, Peru 2) Kuala Terengganu Hospital, Kuala Terengganu, Malaysia 3) Ipsen, Paris, France 4) Cochin-St Vincent de Paul Hospital, Paris, France

Summary:
Objective: Study aimed at assessing the effect of the clay diosmectite (DSM) on stool output and diarrhea duration in children with acute watery diarrhoea. Methods: Two parallel double-blind, placebo-controlled studies in 1-36 months male children were conducted in Peru (n=300) and Malaysia (n=302). Selection criteria were 3 watery stools/day for < 72h, weight/height ratio > 80 %, no intravenous rehydration need, no gross blood in stools, fever < 39°C, no concomitant antidiarrheal or antibiotic. Rotavirus in stool was sought. DSM dosage was 3g (1-12 months) or 6g (13-36 months) tid over at least 3 days, then half the dose till recovery. All children took oral rehydration salts (ORS) (WHO guidelines). Primary criterion was stool output in g/Kg of body-weight (B-W) for the first 72 h. Other criterion was time to recovery (h). Results: Both treatment groups in ITT population of Peru and Malaysia were similar: mean (SD) age: Peru=12.5 (6.1) months, Malaysia=15.9 (8.5) months; B-W: Peru=9.35 (1.67) Kg, Malaysia=9.02 (2.05) Kg, ORS consumption: Peru=1426 (983) ml, Malaysia=1022 (674) ml. Rotavirus frequency was: 22% in Peru, 12% in Malaysia. Mean (SD) stool output for the first 72 hours was significantly decreased by DSM (ANOVA adjusted for Rota): Peru: DSM=102.0 (65.5) g/Kg, placebo=118.8 (92.5) g/Kg (p=0.032), (difference=14%). Rotavirus positive children: DSM=146.9 (90.1) g/Kg, placebo=187.9 (122.1) g/Kg, (p=0.039), (difference=22%). Malaysia: DSM=87.9 (81.2) g/Kg, placebo=90.7 (94.0) g/Kg, (p=0.007) (difference=3.1%). Rotavirus positive children: DSM=91.8 (103.0) g/Kg, placebo=184.5 (192.4) g/Kg, (p=0.002), (difference=50.3%). Pooled studies: DSM=94.5 (74.4) g/Kg, placebo=104.1 (94.2) g/Kg, (p=0.002) (difference=9.2%). Rotavirus positive children: DSM=124.3 (98.3) g/Kg, placebo=186.8 (147.2) g/Kg, (p=0.001), (difference=33.5%). Median [95% IC] time to recovery: Peru: DSM=68.2 [50.2-85.0] h, placebo=118.9 [94.9-140.5] h, (p<0.001); Malaysia: DSM=25.1 [20.5-29.0] h, placebo=32.6 [27.5-39.3] h, (p<0.001). DSM was well tolerated. Conclusions: Two randomized double-blind placebo-controlled studies in 602 children with acute watery diarrhea showed that diosmectite, in association with ORS, significantly decreases stool output and duration of diarrhea, especially in rotavirus-positive children and is well tolerated.
Summary:
The prevalence of infection by Helicobacter pylori (HP) in Chile is of a 70%, it is acquired at early ages and persists in a chronic way unless you eradicated it with antibiotics. The majority of infected ones remain without symptoms, 20% of them could be able to develop peptic ulcer, gastric adenocarcinoma or type MALT lymphoma. Detecting the infection at early ages and establishing the moment when it is acquired, is very important to establish measures of eradication or prevention. In this study the frequency of infection in pediatric patients was determined in patients submitted to upper gastrointestinal endoscopy and gastric biopsy was obtained. In this sample the presence of HP was detected by culture and PCR. The universe of our patients where 118 children. The global prevalence of HP was 36.4%, corresponding 3.6% to nursing children and 5.7% preschool children, rising to 11.2% and 34.8% in students and adolescents, respectively. The infection by HP compromises likewise both sexes, appears in the first years of life and has high prevalence between the 10 and 13 years.

P0217

Title:
FREQUENCY OF RESISTANCE TO DIFFERENT ANTIMICROBIAL DRUGS IN HELICOBACTER PYLORI STRAINS ISOLATED FROM CHILEAN CHILDREN

Eduardo Hebel 1, German Errazuriz 2, Guillermo Venegas 3, Apolinaria Garcia 4
1) Universidad de la Frontera, Temuco, Chile 2) Hospital Puerto Montt, Puerto Montt, Chile 3) Department of Pediatrics, Faculty of Medicine. University of Concepcion, Concepcion, Chile 4) Department of Microbiology, Faculty of Biological Sciences. University of Concepcion, Concepcion, Chile

Summary:
The infection by Helicobacter pylori is acquired at early ages and persists in a chronic way unless its eradicated with antibiotics. Because 20% of the infected could develop peptic ulcer, gastric adenocarcinoma or type MALT lymphoma, it is important to detect the infection in early ages and establish the adequate treatment for its eradication. In this study the frequency of bacterial resistance was determined in the antibiotics used in the treatment of the infection in pediatric patients. H. pylori was found in 28 children (from 8-16 years), in the gastric antrum as well as in the corpus. Of the isolated strains: 11 presented metronidazole resistance, 11 subcitrato of bismuth resistance, 4 clarithromycin resistance, 1 levofloxacin resistance and none tetracycline and amoxicillin resistance. Three strains were resistant simultaneously to metronidazole and clarithromycin, 3 to subcitrato of bismuth and clarithromycin, 6 to metronidazole and subcitrato of bismuth, 1 to metronidazole and levofloxacin and 2 to metronidazole, clarithromycin and subcitrato of bismuth. Twenty-four patients were colonized in antrum and corpus, 2 only in antrum and other 2 only in corpus. The highest resistance (39.3%) was found for metronidazole and subcitrato of bismuth, all were susceptible to amoxicillin. 7.1% was simultaneously resistant to 3 of the antibiotics used. It is to emphasize that 10.7% were resistant to metronidazole and clarithromycin, antibiotics of frequent use in the treatment of associated pathologies to this infection. The colonization of the corpus begins at early ages in the studied population.

P0219

Title:
Children with a metabolic disorder and persistent anorexia have low plasma ghrelin.

G. Veereman 1, M. Mulleman 1, F. Eyskens 2, S. Staelens 1, I. Depoortere 3, T. Peeters 3
1) Pediatric GI &Nutrition Queen Paola Children ‘s Hospital, Antwerp, Belgium 2) Metabolic diseases @ endocrinology Queen Paola Children’s Hospital, Antwerp, Belgium 3) Laboratory for GI Hormones-KULeuven, Leuven, Belgium

Summary:
Background and aim: Ghrelin, an orexigenic peptide produced by gastric X/A like cells is an important regulator of energy homeostasis. It stimulates food intake and inhibits fat utilization. Plasma ghrelin levels are low in obese patients and high in anorectic patients. Data on plasma ghrelin levels in pediatric patients with inborn errors of metabolism (IEM) are scarce and reference values inexistient. We studied plasma ghrelin in a group of pediatric patients with inborn errors of metabolism (IEM) in whom severe anorexia persists despite restored metabolic balance. Methods: Selected patients had a definite diagnosis of IEM, were under 11 years of age and had an oral caloric intake under 20% of requirements for age. They were dependent on supplemental enteral feeding to achieve growth. Control subjects were healthy children, undergoing a benign elective surgical procedure (e.g. adenoidectomy). The protocol was approved by local IRB and informed consents were obtained from the legal guardians of all participating subjects. Fasted blood samples were collected on EDTA and Trasylol, centrifuged, acidified and frozen at -80°C. Following extraction on a C18 column, ghrelin was essayed with RIA. Seven patients (table): ranges for age 2 to 10 yrs, z score for weight -5.58 to -1, z score for height -5.88 to -1.54 and 10 controls were included: ranges
for age 3 months to 5 yrs, z score for weight ~0.5 to +0.5, z score for height ~0.5 to +0.5. Results: Children with IEM and anorexia had significantly lower plasma ghrelin values than healthy controls: 551 ±77 pg/ml vs 1067± 336 pg/ml (P < 0.01 Wilcoxon test) (table). plasma ghrelin (pg/ml) in patients (P) and healthy controls (C) P1 resp chain defect 495 C1 1133 P2 methylmalonaciduria 636 C2 1782 P3 resp chain defect 559 C3 766 P4 resp chain defect - C4 873 P5 resp chain defect 647 C5 1194 P6 resp chain defect 460 C6 1011 P7 glycine rec defect 511 C7 1290 C8 1154 C9 923 C10 540 Mean 551 1067 Standard deviation 77 336 Conclusion: Low plasma ghrelin may contribute to persistent anorexia in children with IEM

P0220

Title:

Agnieszka Prytula 1, Tania Mahler 1, Isabelle Pacquot 2, Philippe Alliet 3, Gigi Veereman 1
1) Queen Paola Children’s Hospital, Antwerp, Belgium 2) St Joseph Hospital, Liege, Belgium 3) Vriga Jesseziekenhuis, Hasselt, Belgium

Summary:
Background:To prevent a rapid degradation of antiTNF chimeric monoclonal antibody Infliximab (IFX) in patients with refractory and/or fistulising Crohn’s disease, it is used in combination with immunomodulators. However, there have been cases of hepatosplenic T-cell lymphoma reported in young patients with an exposure to IFX and 6-mercaptopurine (6-MP) or azathioprine (AZT). As a recent trial study in adults has shown that maintenance treatment with IFX after at least 6 months combination therapy does not affect long term efficacy, we have opted for discontinuation of immunomodulators in children receiving IFX. The aim of this study was to analyse the consequences of withholding the immunomodulators on the disease course in paediatric patients in clinical remission treated with IFX. Materials and methods: Out of 50 paediatric patients treated in our centre for Crohn’s disease, 14 (6-18 years) received IFX. The PCDAI was calculated at diagnosis, on week 0 (first IFX infusion), week 10 and then every 3 months. The mean follow-up was 26 months. Results: On week 0 all children were receiving immunomodulators. All patients showed an initial response to IFX. In 7 patients in remission (PCDAI<10) the immunomodulators were discontinued after 8 to 34 months (mean 29.1) of combination therapy. In 4 patients we observed no subsequent elevation of PCDAI. One boy had a clinical relapse but responded to a higher dose of IFX (10 mg/kg). One girl had a transient elevation of PCDAI and developed erythema nodosum. Another patient had an endoscopically proven exacerbation of Crohn’s disease and PCDAI of 47.5. The remaining 7 patients are currently being treated with IFX and AZT. Conclusions: In the group of patients in whom the immunomodulators were discontinued, 3 out of 7 children had a relapse of Crohn’s disease. As our group was too small to be subjected to a statistical analysis, we emphasise the importance of a multicentre database that would allow a long term follow-up of a large paediatric cohort. A cautious approach is indicated while withholding immunomodulators in patients receiving IFX. * G. Van Assche, G. Paintaud, G. D’haens, F. Baert, S. Vermeire, M. Noman, H. Watier, C. Magdelaine, P. Rutgeerts: “Continuation of immunomodulators is not required to maintain adequate Infliximab efficacy in patients with Crohn’s disease, but may improve pharmacokinetics.

P0221

Title:
Quality of life and dietary aspects in children and adolescents with celiac disease

Philippe Alliet 1, Bette Gers 1, Tania Mahler 2, Gigi Veereman 2, Philippe Gillis 1, Astrid Vanoppen 1
1) Dept of Pediatrics, Virga Jesseziekenhuis, Hasselt, Belgium 2) Dept of Pediatric Gastroenterology, Paola Kinderziekenhuis, Antwerpen, Belgium

Summary:
Introduction: Celiac disease is a chronic disorder, which can influence all aspects of life. Nowadays, health- and disease-related quality of life is considered as an important issue in chronic diseases. Aim of this study: To evaluate health- and disease-related quality of life in children (6-12 years) and adolescents (13-18 years) with celiac disease by specific and validated questionnaires and to relate it to the view of their parents. To analyse the diet through a two-days food diary and to check IgA endomysium antibodies in serum. Results: 48 patients were asked to participate in the study. 37 of them (25 girls) agreed to fill in both questionnaires, which means a response rate of 77 %. 25 of them (18 girls) had an age between 6-12 years. 29/37 patients completed the food diaries, of which 20 (12/25 children) were useful for further analysis. Scores on emotional, social, familial and physical well-being were in general good. Children with celiac disease however obtained higher scores than adolescents. Girls had higher scores than boys. The scores of the parents were in the same range as the ones of their children. In the disease-related questionnaire, the overall scores were much lower than in the health-related questionnaire. Girls had a better score than boys. Adolescents did communicate better about their disease than children. Parents scored the disease-related quality of life lower than their children, as well in the younger as in the older age group. Endomysium antibodies were negative in 35/37 patients (94.6 %). The analysis of the food diary revealed however in 31 % of the patients potential dietary mistakes. The percentage of the dietary fat and carbohydrates are more close to the reference values than in the general Belgian population. Fiber-, calcium and iron intake however are below the reference values. Conclusion: Health-related quality of life in celiac children on a gluten free diet is good. Disease-related quality of life however is lower. Psychological support might be useful to be considered. Although one third of
the patients could have potential contamination of their diet with gluten, 94.6 % had negative endomysium antibodies. Attention to the fiber-, calcium- and iron content of a gluten free diet seems to be important.

P0223

Title: Intestinal epithelial dysplasia (IED) or tufting enteropathy: Ophtalmologic and phenotypic presentation and associated disorders

Julie Salomon 1, Solène Ganousse 1, Natacha Patey-Marlaud de Serre 1, Daniele Canioni 1, Olivier Roche 1, Olivier Goulet 1
1) University of Paris-Descartes; Hôpital Necker; Pedidtric Gastroenterology, Hepatology and Nutrition; Reference Center for Rare Digestive Disease, Paris, FRANCE

Summary:
Intestinal epithelial dysplasia or tufting enteropathy is a congenital enteropathy (Orphanet J Rare Dis. 2007). The aim of this cohort study was to focus on the phenotypic presentation of this disease. Population and Methods: Patients with the following criteria were included: neonatal or early onset of severe watery diarrhea persisting at bowel rest, absence of clinical and biological manifestations of autoimmune disorders, mild to severe villous atrophy with or without mononuclear cell infiltration of the lamina propria, normal PAS staining and abnormal surface epithelial crowding forming tufts and/or abnormal crypts with dilatation and branching pictures. Results: 26 patients, 14 girls and 12 boys born from 21 families were included. They were aged from 1 month to 9 years at the time of diagnosis (median age: 24 months): 15 are Caucasian, and 11 are Arabic. Five children presented at birth with associated congenital anomalies including: choanal atresia (n=2), pretragian fistula (n=2), esophageal atresia, anal atresia, chochlear dysplasia or Mondini syndrom, pilar dysplasia (n=3), intestinal malrotation, ureteral duplicity. Twenty-one children underwent ophtalmologic examination, 10 presented with superficial punctuated keratitis (SPK) while 14 children, who had general anesthesia for endoscopy or change of catheter, underwent a systematic conjunctival biopsy with parents consent. When abnormal, the epithelium presents with mild inflammation of the lamina propria, epithelial hyperplasia, focal parakeratosis, various level of basal cells hyperplasia, decrease of goblet cells and tufts. Among the 15 children who had a biopsy, 6 were symptomatic (mainly photophobic), and 8 not. Eleven have tufts on the conjunctival epithelium. Histological tufts were not only associated with clinical symptoms. Among the 4 children with no evident tuft on biopsy, though having inflammation, hyperplastic epithelium and decrease of goblet cells, 2 present symptomatic SPK, one had none, and one had not had ophtalmological examination. Conclusion: A large number (>60%) of patients with established IED have an ophtalmologic disease with SPK and/or conjunctival dysplasia. It is very uncommon to find such associated ophtalmological disease with conjunctival epithelial abnormalities resembling those observed on intestinal epithelium. This finding might help in performing diagnosis and understanding the pathophysiology of this rare and severe intestinal congenital disease.

P0224

Title: EOSINOPHILIC ESOPHAGITIS: CASE REPORT

Graciete O Vieira 1, Nilma L C Almeida 1, Tatiana O Vieira 2, Heli V Brandão 1, Lucas O Vieira 3
1) Feira de Santana State University, Feira de Santana, Brazil 2) Federal University of Bahia, Salvador, Brazil 3) Barão de Mauá Medical Center University, Ribeirão Preto, Brazil

Summary:
Background: The eosinophilic esophagitis is a disorder little diagnosed, although it can manifest early. At this time, there is insufficient evidence and experience to provide recommendations for uniform approach to diagnosis and treatment. Objective: To describe a case of eosinophilic esophagitis associated with atopic disorders. Statement of the case: R.S., male, from Feira de Santana, Bahia, born in 09/05/2007. Was admitted in 12/27/2007 with a history of regurgitations and recurrent vomiting, since twenty days of life. In the first week of life showed urticaria in the face, trunk and limbs. There was poor weight gain after birth. The upper gastrointestinal series to establish the presence of gastroesophageal reflux. He used several medications, including ranitidine, omeprazole, domperidone and bromopride without improvement. Admitted by dehydration twice. The mother during pregnancy had hyperglycemia. Childbirth without complications; birth weight of 4520g. He exclusive breastfeeding from birth. On physical examination, weight of 4500g, signs of dehydration and malnutrition and urticaria in chest and members. During the intemnet was fed with breast milk (mother in the diet without cow milk), hypoallergenic formula and pharmacological treatments with prednisolone, montelukast, omeprazole, bromopride. Degree of symptom relief and weight gain. On 1/24/2008 high hospital weighing 5250g. In follow-up consultation on 03/06/08 weighed 6180g; oriented stopped omeprazole and bromopride and start hypoallergenic foods, the weighed was 6300g on 03/27/08.

Conclusion: Eosinophilic esophagitis is a disorder that typically causes symptoms similar to those seen with gastroesophageal reflux. This is a case of eosinophilic esophagitis with clinical manifestations in the first week of life associated with allergic or atopic disorders, diagnosed and treated, initially, as gastroesophageal reflux disease. The clinical suspicion of eosinophilic esophagitis and appropriate treatment determined improvement of the signs and symptoms and adequate weight gain.
Title: A randomized controlled trial of probiotics on cold and flu-like symptom incidence and duration in children

Arthur C. Ouwehand 1, Shuguang Li 2, Mohamed E. Mubasher 3, Cheryl Reifer 4, Gregory J. Leyer 1
1) Danisco Cultures, Paris, France 2) Tongji University, Shanghai, China 3) University of Texas at Houston, Houston, USA 4) SPRIM, Dallas, USA

Summary:
Objective: Early research, evaluating the benefits of probiotic bacterial consumption by humans, was focused on determining their benefits in a variety of immunological and gastrointestinal maladies, and lesser emphasis was placed on healthy subjects. In this study, the impact of probiotic consumption on the incidence and duration of upper respiratory tract infection symptomatology in healthy children, was evaluated during the winter season. Study Design: A randomized, double-blind, placebo-controlled three-arm study with two hundred forty eight children in a day-care setting, aged three to five years old, were supplemented twice daily for six months with either placebo or one of two probiotic treatments (L. acidophilus NCFM™ or L. acidophilus NCFM™ in combination with B. animalis subsp. lactis Bi-07). Results: Probiotic intake had a significant impact; reducing both the incidence and duration of fever, coughing and runny nose, and the use of antibiotics. There was a trend for a stronger protective effect for the combination of L. acidophilus NCFM™ and B. lactis Bi-07 (branded as HOWARU™ Protect). Additionally, children on the probiotic arms had a significant reduction in the number of sick days. Conclusion(s): Daily supplementation of the diet with these probiotics was a safe and effective way to increase the number of illness-free days. Conflict of Interest Statement: Dr.’s Ouwehand and Leyer are employees of Danisco, sponsoring agency of this study. They were involved in the study design, interpretation of the data, and writing of the manuscript. Dr. Reifer was contracted to serve as the coordinating center for this study. Dr. Mubasher was contracted to perform statistical analysis for this study. Professor Li was contracted to coordinate the study at the clinical site.

Title: Analysis of etiological factors predisposing to chronic pancreatitis in childhood.

Grzegorz Oracz 1, Beata Oralewska 1, Mikolaj Teisseyre 1, Maciej Dadalski 1, Jozef Ryzko 1, Jerzy Socha 1
1) Dep. of Gastroenterology, Hepatology and Immunology; The Children’s Memorial Health Institute, Warsaw, Poland

Summary:
Chronic pancreatitis (CP) is a rare disease in childhood. The pathogenesis of CP in children is poorly understood. Most of the information about this subject is found within individual case reports or small case series. The aim of our study was to evaluate etiological aspects of CP in children. Methods: 116 children with CP hospitalized since 1990 to 2005 were enrolled into the study. Clinical and epidemiological data were recorded and analyzed. All patients were divided into 7 groups, depending on the etiological factor. Results: Gene mutations predisposing to CP were found in 39 children (33,6%) (PRSS1 in 16 children, CFTR in 11, SPINK1 in 17). 24 patients (20,1%) had anatomic anomalies of pancreatic duct (19 patients- pancreatic divisum, 3 - ansa pancreatica, 1- two main pancreatic ducts, 1- long common pancreato-biliary tract. CP was associated with biliary tract disease in 15 patients (12,9%). Hyperlipemia was found in 14 patients (12,1%). History of abdominal trauma was present in 8 cases (6,9%). In 23 children we found more than one etiological factor (19.8%). In 33 patients (28,4%) we could not find found any etiological factor. The disease started early in group with hereditary pancreatitis (HP) (7,95 years) and in group with anatomic anomalies of pancreatic duct (7,93 years). The latest at all CP started in group with biliary tract disease (11,1 years), but there was no difference in age of the disease onset between all groups. Severe changes in ERCP image were observed in HP group (2,56°) (p<0.05) and in the group with anatomic anomalies (2,64° ) (p<0.05). Calcifications in the imagine studies were found more frequently in HP group (75%; p<0.05) and in group with anatomic anomalies (73%; p<0.05). Pancreatic duct stenting was performed more frequently in HP group (69%; p<0.05) and in group with anatomic anomalies (73%; p<0.05). Extracorporeal shock wave lithotripsy (ESWL) was performed more frequently in hereditary pancreatitis group (31%; p<0.05). There was no difference in the frequency of the surgical intervention between all groups. Conclusions: 1. The most common etiological factors of CP in children are gene mutations, anatomic anomalies of pancreatic duct, lipid disturbances and biliary tract diseases. 2. Chronic pancreatitis associated with PRSS1 mutations and with anatomic anomalies of pancreatic duct has worse clinical course than CP associated with other etiological factors, despite similar age of the disease onset.

Title: Combined antibodies testing for diagnosing celiac disease are superior to single one

Buergin-Wolff Annemarie 1, Hadziselimovic Faruk 1
Summary:
Objectives: The optimal serological tests for detection of celiac disease remains controversial. The aim of our study was to evaluate all current immunologic assays for diagnosing celiac disease using gold standard of duodenal biopsy. Patients and Methods: Serological analysis in 1873 patients with clinical symptoms of celiac disease was performed. Panel of antibodies tested include IgA AGA, IgG AGA, IgA EMA, IgA tTG as well as total serum IgA. These results were compared to the results of duodenal biopsy. The sensitivity, specificity of combined tests were estimated. Bayes formula [sensitivity preval. / sensitivity preval.+(1-spec.)x(1-preval.)] was applied to our cohort with 59% (1100/1873) of prevalence of celiac disease (Marsh 3a, b, c) to estimate the predictive values of combined antibody testing. Results: In general the main controversy utilizing and interpreting antibodies testing resulted because estimations were based on the population with low pretest probability of celiac disease. In contrary, in our cohort, with clinical symptoms of celiac disease, 59% had a flat mucosa compatible with active celiac disease. Specificity of all three antibody testing was 99.9% and sensitivity 58%. If all antibodies were positive then there was a 99.8% [641/642] positive predictive value for flat mucosa. Furthermore, if all antibodies were negative we found in 98.2% [500/509] of patients studied a normal duodenal mucosa. In case of single IgG AGA positive test in 10% (183/1873) of our patients we do not recommend an immediate intestinal biopsy but an observation of the patient’s symptoms. However, 20% [110/539] of those undergoing endoscopic intervention and biopsy as a consequence of a single positive test (only one or two antibodies positive, not three) had a normal mucosa. Conclusion: Combined antibody testing is superior to single one. Only panel antibody testing in a population with symptoms of celiac disease will obviate intestinal biopsy in 60% of patients.

P0229

Title:
Non-compliance to gluten-free diet during pregnancy induce impaired placental growth in women with celiac disease

Faruk Hadziselimovic 1
1) Kindertagesklinik, Liestal, Switzerland

Summary:
Objective: It has been shown that exposure to gliadin in pregnant women with celiac disease alters extravillous trophoblast dynamics by causing an increase in apoptotic shedding. In genetic predisposed individuals gliadin affects foetal part of the placenta causing children to be small for their age. (SGA) Thus far, nothing is known about influence of gliadin upon placental growth in non-compliant pregnant women with celiac disease. Patients and Methods: Placentas from 16 women with celiac disease were collected and analysed. The diagnosis of the disease was confirmed by intestinal biopsy and all 16 women had at the time of diagnosis positive antigliadin and endomysium antibodies. During their pregnancies none of the women was undernourished or suffered vitamin deficiency. All were non-smokers. One third, (5/16) of women were noncompliant to gluten free-diet; all had positive AGA, EMA or/and anti-TtG antibodies. Two of them had in addition an intestinal biopsy performed, showing Marsh 3c type of mucosal pathology. Placenta were weighted and samples were collected immediately after delivery, fixed in 4% formaldehyde solution, dehydrated and embedded in paraplast. The estimated age of placentas was between 38-40 weeks of pregnancy. Gestational age was calculated based on the date of last menstrual period and the data obtained in the first trimester by ultrasonography. For each placenta, a transverse section in the central and peripheral region was HE stained for histological examination. Results: No prominent and significant pathological changes were visible in all placentas stained with conventional H&E. Mean weight of placenta in con-compliant women was 352g ± 67.6 [95% CI 268-435] significantly lower if compared to compliant women, 543g ± 122 [95% CI 462-626] p< 0.005. The newborn weight in non-compliant women was 2688g ± 346 [95%CI 2259-3117] and was lower compared to newborn weight of compliant women 3625g ± 472 [95%CI 3308-3942] p<0.003. Conclusion: In non-compliant women with celiac disease gliadin is directly responsible for the placental growth retardation and loss of surface area which impacted adversely on the capacity for materno-foetal exchange, resulting in small for gestational age newborns. It is becoming apparent that its occurrence (SGA) has major impacts on the foetus with consequences on the cardiovascular, metabolic and neurological development up to adulthood. We are just starting to unveil some of the basic mechanisms involved in this complex adaptation that may lead to reprogramming of foetal organs development mostly the heart, pancreas, lungs and brain.

P0230

Title:
Characteristics of Inflammatory Bowel Disease With Onset During the First two Year of Life in Egypt.

Hani Ali Hussein 1, Mohamed Sami Elhakim 1, Ahmed Schhata 1
1) Al-Azhar University-Faculty of Medicine, Cairo, Egypt

Summary:
Background: Inflammatory bowel disease (IBD) is recognized in young children, however, only rare data on onset and evolution are available in
children younger than 2 year. In the present clinical study, we aimed to analyze characteristics and clinical course of children with very early onset IBD. We were particularly interested in the relationship between bacterial infections and the use of antibiotics before the onset of IBD. Patients and Methods: The IBD admitted to El-Hussein University Hospital was screened for patients with IBD with disease onset during the first two year of life and a follow-up of at least 2 years. 5 patients were identified during the period 2001-2007. Results: All patients presented with rectal bleeding and had colonic involvement. 2 patients had definitive diagnosis of Crohn disease; ulcerative or indeterminate colitis was seen in 1 and 2 children, respectively. 3 of the patients had a positive history of neonatal or early-onset bacterial infection with use of antibiotics before onset of IBD, 1 patients were still breastfed and 4 were weaned when GI symptoms started. 3 patients had a severe onset of disease requiring bowel rest, parenteral nutrition and steroid medication, followed by azathioprine or cyclosporine medication. Surgery was necessary in 1of 5 patients. Disease relapses were frequent and observed in 4 of 5 children. Discussion: Very early onset IBD may reflect a subgroup of patients characterized by a particular sensitivity to modifications of the intestinal flora. Neonatal IBD was most often severe in presentation.

P0231
Title: Clinical Characteristics of Crohn disease in Egypt
Hani Ali Hussein 1, Mohamed Sami Elhakim 1, Ahmed Schhata 1
1) Al-Azhar University-Faculty of Medicine, Cairo, Egypt
Summary: Background: Crohn disease (CD) is a chronic intestinal inflammatory disorder whose pathogenesis and etiology are still largely unknown. Inflammatory bowel disease (IBD) is recognized in young children, however, only rare data on onset and clinical picture are available in children in Egypt The aim: The aim of this study was to elucidate the clinical characteristics in Egyptian children with CD. Patients and Methods: All of the children hospitalized at the El-Hussein University Hospital between January 2000 and August 2007 who fulfilled the diagnostic criteria for CD were enrolled. Their clinical characteristics were recorded. Results: CD was diagnosed in 30 children (18 boys and 12 girls; age range at diagnosis, 9 months to 16 years; median age, 12.3 years). There were 15 children with ileocolonic region involvement, 9 with colonic region involvement, 6 with ileal region involvement, 12 with additional upper gastrointestinal tract involvement, and 6 with additional perianal fistula. Half of the children had growth retardation at diagnosis. Conclusions: Ileocolonic location and inflammatory behavior constitute the most frequent phenotype of CD in Egypt.

P0232
Title: Randomized controlled trial: Effectiveness of Lactobacillus rhamnosus (strains E/N, Oxy, and Pen) in the prevention of antibiotic-associated diarrhea in children
Marek Ruszczynski 1, Andrzej Radzikowski 1, Hania Szajewska 1
1) The Medical University of Warsaw, Warsaw, Poland
Summary: Background: Convincing evidence that probiotic administration can lower the risk of antibiotic-associated diarrhea (AAD) is limited to certain microorganisms. Aim: To determine the efficacy of administration of Lactobacillus rhamnosus (strains E/N, Oxy, and Pen) for the prevention of AAD in children. Methods: Children (aged: 3 mo to 14 y) with common infections were enrolled in a double-blind, randomized, placebo-controlled trial in which they received standard antibiotic treatment plus 2x10^10 colony forming units of L rhamnosus (n=120) or a placebo (n=120), administered orally twice daily throughout antibiotic treatment. Analyses were by intention to treat. Results: Any diarrhea (3 or more loose or watery stools/day for at least 48 hours occurring during or up to 2 weeks after the antibiotic therapy) occurred in 9 (7.5%) patients in the probiotic group and in 20 (17%) patients in the placebo group (relative risk, RR 0.45, 95% confidence interval, CI 0.2 to 0.9). Three (2.5%) children in the probiotic group developed AAD (diarrhea caused by Clostridium difficile or otherwise unexplained diarrhea) compared to 9 (7.5%) in the placebo group (RR 0.33, 95% CI 0.1 to 1.06). No adverse events were observed. Conclusion: Administration of L rhamnosus (strains E/N, Oxy, and Pen) to children receiving antibiotics reduced the risk of any diarrhea, as defined in this study.

P0233
Title: Zinc Supplementation for Acute Gastroenteritis in Children: a Meta-analysis of Randomized Controlled Trials
Bernadeta Patro 1, Dominik Golicki 2, Hania Szajewska 1
1) The Medical University of Warsaw, 2nd Dept of Paediatrics, Warsaw, Poland 2) The Medical University of Warsaw, Dept of Pharmacoeconomics,
Warsaw, Poland

**Summary:**
Objectives: To review evidence for the effectiveness of zinc in treating acute gastroenteritis (AGE) in children, with special emphasis given to data from developed countries. Methods: The following electronic databases were searched through November 2007 for studies relevant to AGE in children younger than 5 years of age and zinc: MEDLINE, EMBASE, and The Cochrane Library; additional references were obtained from reviewed articles. Only randomized controlled trials (RCTs) were included. Results: Eighteen RCTs (11,180 participants, mainly from developing countries) met the inclusion criteria. The use of zinc was associated with a significant reduction in diarrhea duration (13 RCTs, 5,643 infants, weighted mean difference –0.69 day, 95% CI -0.97 to -0.40) and the risk of diarrhea lasting longer than 7 days (8 RCTs, n=5,769, relative risk, RR 0.71, 95% CI 0.53 to 0.96). No significant reduction in stool volume was observed for those receiving zinc compared with placebo (3 RCTs, n=606, standardized mean difference, -0.38, 95% CI - 1.04 to 0.27). Combined data from 5 RCTs (n=3,156) showed that zinc compared with the control agent significantly increased the chance of vomiting (RR 1.2, 95% CI 1.05 to 1.4). Conclusions: These data confirm that zinc supplementation can be useful for treating AGE in children, particularly those from developing countries. However, the role of zinc supplements in treating children with AGE in developed countries needs further evaluation.

**Title:**
The spectrum of Paediatric Eosinophilic Oesophagitis in a District General Hospital in the UK

Hany G H Banoub 1, Helen Payne 1, Sonny F.K. Chong 1
1) Queen Mary’s hospital for children, Carshalton, Surrey, United Kingdom

**Summary:**
Background Eosinophilic Oesophagitis is a separate clinical and pathological disorder of the oesophagus. Although symptoms may be similar with Gastro-oesophageal reflux disorder, yet it is well recognized to have a different management. There have been reports in the literature of some rare association with eosinophilic oesophagitis in rare syndromes such as Rubenstein-taybi syndrome. Other conditions presenting with eosinophilic oesophagitis although there has been no clear association. Aim We have studied the epidemiology, associated medical condition, clinical presentation, and investigations including endoscopic findings, clinical and histologic response to treatment. Methods The clinical symptoms, presentation, diagnosis, management were reviewed. We a We noted other associated medical conditions. Their investigations and clinical progress before and after treatment were studied. Results from 2004-2007, 15 patients diagnosed with eosinophilic oesophagitis in our GI clinic were selected. The youngest was a male diagnosed at 16 month of age, and the oldest was 15 years old male. Only 2 were non-Caucasian The gender ratio of the 15 patients were 9 males to 6 female. One patient has Asperger’s syndrome and also had celiac disease confirmed on endoscopy. Another patient has ADHD, and two patients have global developmental delay with chromosomal abnormalities. Two patients with asthma, and one patient with multiple food allergies. One patient had mastocytosis which was shown on biopsy of a small skin lesion removed surgically from his anterior chest wall. Another patient had eosinophilic colitis as well as eosinophilic oesophagitis. Two patients developed eating disorders subsequently. Nine patients have high IgE level, and nine had allergen specific RAST. In 5 patients, the eosinophil count was mildly elevated in the peripheral blood. Eleven of fifteen patients have improved clinically following treatment, but the histopathology was improved in only six patients. Discussion Eosinophilic oesophagitis should be considered in patients with atopy, and food aversion or intolerance. Dyspeptic symptoms in children with learning difficulties, chromosomal abnormalities, autism, and Asperger’s syndrome who have dyspeptic symptoms, should be investigated for eosinophilic oesophagitis even if the symptoms are attributed to gastroesophageal reflux disorder. Although most

**Title:**
The Natural History over 25 years in Children Presenting with Gastroesophageal Reflux Disease under the Age of 12

Paul A Rufo 2, Jingshing Wu 2, Jennifer Wu 2, David Culbertson 2, James M Perrin 1, Harland S Winter 1
1) Massachusetts General Hospital, Boston, MA, USA 2) Children’s Hospital Boston, Boston, MA, USA

**Summary:**
Objective: Gastroesophageal reflux disease (GERD) affects up to 10% of children; however, the natural history of this disorder in pediatric patients is not fully understood. The goals of this research project are: 1) to determine the likelihood that GERD in childhood results in symptoms of GERD as an adult; and 2) to assess the impact of pediatric GERD on adult quality of life. Methods: Patients under the age of 12 who were evaluated for GERD between 1975 and 1990 were contacted 15-30 years later. We examined the medical records, pH probe study results, as well as endoscopic and histologic data collected at the time of diagnosis. Patients completed surveys assessing demographics, current GERD/medication use, and medical complications of GERD. Results: 44 subjects who were referred for evaluation of GERD before the age of 12 were enrolled. At the time of diagnosis
the median age was 1.5 years and the range was 2 weeks to 11.4 years. At the time of follow up evaluation, the median age was 25 years (range 18 to 37 years). As children, 39 had completed pH probe studies and 18% (7/39) had a reflux index greater than 4%. 20 patients had completed upper endoscopy with biopsy, and 50% (10/20) displayed histologic evidence of esophagitis. As adults, patients with positive pH probe studies as children (n=7) were more likely to: (i) be taking anti-reflux medications; (ii) have had an endoscopy in the last 2 years; or (iii) have been diagnosed with asthma compared with those children with negative (n=32) studies (43%, 14%, and 43% vs. 28%, 6%, and 34%, respectively). 100% of adult patients (n=16), who as children had either pH or histologic evidence of reflux, reported at least one GERD-like symptom in the past month and 25% reported that the symptoms interfered with their daily activities. Similar data (93% and 32%, respectively) were observed in 28 patients with negative ph and/or endoscopic studies. However, patients with abnormal pH studies, biopsies, or endoscopic findings were much more likely (50%) to be on anti-reflux medications than those with negative (18%) studies. Conclusion: Among children with GERD, we found a high incidence of GERD-like symptoms an average of 25 years later, especially among those adults with stronger evidence of GERD in childhood.

P0239

Title: Recovery of Helicobacter pylori from cryopreserved gastric tissue without preservatives for more than 10 years in children

Hee-Shang Youn 1, Min-Ji Goo 1, Ji-Hyang Seo 1, Ji-Sook Park 1, Gyung-Hyuck Ko 2, Kwang-Ho Rhee 3
1) Department of Pediatrics, Gyeongsang National University School of Medicine, Jinju, South Korea 2) Department of Pathology, Gyeongsang National University School of Medicine, Jinju, South Korea 3) Department of Microbiology, Gyeongsang National University School of Medicine, Jinju, South Korea

Summary: Objectives: Helicobacter pylori is fastidious microorganism. Because of the poor recoverability, various transport media, such as skim milk/glycerol, brucella broth/glycerol, cysteine-albumin/glycerol or Stuart’s transport media have been used during transport or preservation to improve the H. pylori culture yields. Several reports suggested that gastric mucosal biopsies could be safely stored from 1 week to five years under frozen condition. The purpose of this study was whether it is possible to culture of H. pylori from cryopreserved gastric mucosal biopsies frozen with or without OCT compound for more than 10 years. Method: Forty-six cryopreserved antral biopsy specimens with OCT compound and 31 ones without OCT compound sampled from 46 pediatric patients were used. To maximize the culture yields, the pediatric patients whose urease test color changes were noted in 1 hour were selected. The samples were collected in either 1990 (15, OCT only) or 1992 (31) and deeply frozen in eppendorf tube without other preservatives (-70°C). The histopathologic findings were classified into 4 degrees by Updated Sydney System. Frozen gastric biopsies were thawed in bovine serum albumin or PBS and cultured on brucella agar containing 10% bovine serum, vancomycin, nalidixic acid, and amphotericin B in microaerobic atmosphere (5% O2, 10% CO2, 85% N2) and at 37°C for 7 days. Results: H. pylori were recovered from 29 (63%) among 46 biopsies. Patients with positive culture results were composed of 17 boys and 12 girls. The median age was 11.84 years, ranged from 3.4 years to 14.92 years. Histopathologic examination of 42 patients revealed bacteria infiltration on gastric antral mucosa. The recovery rate from biopsies cryopreserved in OCT compound was 93% at 1990 years and 13% at 1992 years. The recovery rate was higher in antral specimens stored in OCT compound at 1990 years than 1992 years. And the recovery rate from biopsies cryopreserved in OCT compound was 39%, and the rate of positive culture utilizing without OCT compound was 48%. There were no differences in histopathologic findings between biopsies cryopreserved with OCT compound and without that. The recovery rate would be higher if the gastric mucosal biopsy specimens were kept at -70°C with tight seals and were kept from being freeze-dried. (Data not presentable) Conclusion: Gastric mucosa per se is the best cryostorage media as well as the best transport media if it were kept in tight sealing and from b

P0240

Title: Clinical-epidemiological aspects of chronic functional constipation in children: have there been changes in the last decade?

Hélcio S Maranhão 1, Rosane C Gomes 1, Lauro V Sena 1, Jales Clemente 1, Mauro B Morais 2
1) Federal University of Rio Grande do Norte, Natal, Brazil 2) Federal University of São Paulo, São Paulo, Brazil

Summary: Introduction: chronic functional intestinal constipation (CFIC) is an ever increasing infirmity in pediatric gastroenterology ambulatory facilities and may show previously unidentified clinical features. Aims: analyze and compare the clinical and epidemiological aspects related to CFIC in children in two time periods 10 years apart. Methods: Two cross-sectional studies were carried out at the gastroenterology ambulatory facility of the Hospital of Pediatrics of Federal University of Rio Grande do Norte, Brazil, the first from 1997 to 1999 (S1) and the second from 2005 to 2007 (S2), with 54 and 59 children with CFIC, respectively, aged from 2 to 12 years. A unified questionnaire was applied and urine cultures were taken from all the children. Results: The percentage of boys was 51.9% in S1 and 61.0% in S2 (p = 0.32). A total of 87% and 52.5% of S1 and S2 subjects, respectively resided in the state capital (Natal) (p < 0.01). The mean ages at first consultation were 57.6 ± 30.6 months in S1 and 73.5 ± 34.2 months in S2 (p < 0.01) and the...
duration of the symptoms was 27.1 ± 22.8 months in S1 and 35.0 ± 27.6 months in S2 (p = 0.03). Family history of constipation was positive in 51.9% of S1 and in 67.8% of S2 (p = 0.08). Evacuation frequency of fewer than 3 times per week was found in 77.8% of S1 and in 69.9% of S2 (p = 0.33). The most frequently found clinical manifestations were: rectal impaction (S1 = 85.2% and S2 = 75.5%, p = 0.21), soiling (S1 = 63.0% and S2 = 62.1%, p = 0.92), abdominal pain (S1 = 57.4% and S2 = 80.7%, p < 0.01), blood in feces (S1 = 53.7% and S2 = 52.5%, p = 0.90), urinary symptoms (S1 = 42.6% and S2 = 44.1%, p = 0.87) and abdominal distension (S1 = 1.9% and S2 = 6.8%, p = 0.20). Positive urine cultures were found in 5.7% of S1 and in 8.5% of S2 (p = 0.56). Conclusions: the longer duration of symptoms and the age at first consultation in the more recent study sample (S2) show that the children were brought to the specialized facility later than were S1 children. There were no significant differences between the clinical findings, except for abdominal pain, which had higher prevalence in S2, underlying its current importance as a manifestation of CFIC in children.

P0241

Title: Worries and concerns within the family with Inflammatory Bowel Disease.

Helene Lindfred 1, Kjell Reichenberg 3, Staffan Nilsson 2, Robert Saalman 1
1) The Queen Silva Children's Hospital, Sahlgrenska University Hospital, Göteborg, Sweden 2) Chalmers University of Technology, Göteborg, Sweden 3) The Sahlgrenska Academy, Institute of Medicine, Göteborg, Sweden

Summary:
Aim: The aim of this study was to investigate parents’ worries and concerns in pediatric IBD. We also wished to evaluate discrepancies within the family by comparing both parents’ and adolescents’ thoughts about living with the disease. Methods: All the parents of 77 adolescents (11-16 y) with IBD (for at least 6 months), scheduled for check-ups, were asked to participate in the study. All children with IBD in the area are followed at the Department of Pediatric Gastroenterology of a University hospital. 119 parents (65 mothers) of 68 adolescents (39 boys, 23 CD, 40 UC, 3 IC) completed a questionnaire regarding concerns and expectations about their child’s IBD. In addition, 68 of the adolescents completed a validated test, measuring self-rated self-esteem, “I think I am”. Results: This population-based study revealed that the majority of the parents generally have a positive view concerning their child’s present health conditions. Within the family parents overall answered in concordance. However, about 20% of the parents had diverging opinions about their child’s health resources (exemplified Table 1). Parental status of habitation did not affect this pattern. We also found that the majority of parents were worried about their child’s future health. In this respect, the parents did not show the same agreement (Table 2). Mothers proved to be more positive about their child’s present health than fathers. This parental pattern was not found regarding future concerns. When parents and adolescents were compared they showed high concordance, especially for present health dimensions. Parental worries about the future, however, did not correlate with the adolescents’ score of self-esteem. Conclusion: Most parents had a positive view about their child’s present health conditions, but expressed worries about the future. Parents showed higher concordance for present health than for the future situation of their child. Knowledge about parents’ and adolescents’ thoughts may be helpful for health-care teams supporting families with IBD.

P0242

Title: Increase in dietary fiber and acceptance of wheat bran by children with chronic constipation are associated to amelioration of the constipation

Helga Verena L Maffei 1, Andréa C Pereira Vicentini 1
1) Dept. Pediatrics, Medical School of Botucatu, São Paulo State University – UNESP, Botucatu, SP, Brazil

Summary:
Wheat bran has been shown to ameliorate the bowel habit (BH) of constipated adults, but scarce information is available in children, as wheat bran is considered of difficult acceptance and usually not prescribed. Our standardized treatment emphasizes dietary fiber (DF) intake (pulses, fruits with peels/bagasse, corn, seeds, nuts, vegetables), with bran as supplement or as 30% of the flour in bread/cakes/etc. Therefore, the aim of the study was to evaluate DF and bran acceptance and its effect on the BH. Methods: We followed prospectively 28 children aged median (range) 7.25y (3mo-15.6y) with constipation (according to JPGN2002;35(Suppl 2):S110-7), 23 of them with 40 complications. A 24h dietary recall and a weekly food intake questionnaire were applied at first attendance in the pediatric gastroenterology outpatient unit (attendance 1+1A) and after follow-up intervals of 0.5-3mo (A2), 3-9mo (A3), 9-15mo (A4), 15-24mo (A5). Total DF ingestion was categorized according to American Health Foundation: age+10g/d. Stool frequency and characteristics, and possible complications of constipation were annotated at each attendance, blindly to the dietary enquiry. Final BH evolution was classified as: BAD=worse/unaltered/better but still with complications of constipation or RECOVERY=better and no complications/ asymptomatic. The chi square test was used for association between ingestion and BH. Results: Median follow-up was 13.5mo with median 4 dietary enquiries per child. Short bowel cleansout series were used in 75% of the children. DF ingestion increased progressively from median 29.4% below to 80% above age+ 5g/d, respectively in A1 and A5. Bran ingestion was recalled in 60 and absent in 48 attendances. No child received bran before age 7.2mo. Four children (14.3%) never accepted bran, 3 (10.7%) during only one of the attendance intervals and 21 children (75%) during 2 or more intervals, but acceptance was intermittent or delayed in one third (7/21). BH RECOVERY occurred in 78.6% of the children. Increase in DF categories and wheat bran ingestion were each separately associated to recovery, respectively p<0.05 and p<0.001. Conclusions: Dietary fiber acceptance was good for most children, with an important contribution of wheat bran for 75% of them and this was associated to amelioration of constipation. However, many reinforcements are necessary for acceptance, as for a parcel of the children acceptance was delayed or intermittent.

P0243

Title:
G2P[4] the most circulating genotype in 2007 winter season - the first Portuguese prospective multicenter study

Henedina Antunes 1, Ariana Afonso 1, Miren Iturriza 2, Fernando Branca 3, Isabel Martinho 4, Jim Gray 2
1) Gastrenterology, Hepatology and Nutrition Unit, Pediatrics Dpt, S. Marcos Hospital and in behalf of Pediatrics Departments of Minho, Braga, Portugal 2) Enteric Virus Unit, Virus Reference Department, Centre for Infections, Health Protection Agency, London, UK 3) Clinical Pathology Department, S. Marcos Hospital, Braga, Portugal 4) Pediatrics Department, Centro Hospitalar do Alto Minho, EPE, Viana do Castelo, Portugal

Summary:
Background: In Portugal little data was available about rotavirus strains (RS) circulating. In the only single center Portuguese study the G9P[8] was the predominant genotype. Objective: to determine the RS circulating during an epidemic period. Methods: Prospective multicenter study of the distribution of RS in a northwest region of Portugal. The children included were those, under 15 years-old, with acute gastroenteritis that attended medical observation in the Pediatric Emergency Service of the 5 Hospitals involved in the study. The study period was January 1st to March 31st, 2007. The children parents were addressed a clinical and epidemiological data questionnaire. The stool samples were analyzed and those positive in the rotavirus immunochromatographic (enzyme immunoanalysis) test made genotyping by RT-PCR. Results: A total of 512 questionnaires were performed. From these, 424 children collected stool samples. The rotavirus rapid test was positive in 54.5%. There were also three samples with negative immunochromatographic test for rotavirus, send to RT-PCR by mistake, with detectable rotavirus RNA. Therefore, we obtained a total of 234 stool samples for genotyping (55.1%). G2P[4] was the RS more frequently identified (65.1%), followed by G9P[8] (13.3%). This was the more prevalent type in four of the Hospitals included in the study. In one Hospital, G9P[8] was more common (52.4%). The strains were only partially genotyped in 3.7%. Mixed infection by rotavirus occurred in 5.0%. The majority of the mixed infections were with G1 and G2 rotavirus strains (54.5%). The stool samples were negative in the PCR assay in 6.8%. Conclusions: In this prospective multicenter study, during an epidemic period, G2P[4] was the most prevalent rotavirus type. From the more common P-G combinations in Europe, G2P[4] is the only with P[4] expression. G9P[8] recently entered the human populations. It is the second most frequent in this study, although it was identified as the most prevalent in a Portuguese Pediatric Hospital in 2006. It is noteworthy that multicenter studies may obviate much of the limitations of a study from a single center, essentially because the distribution of P-G combinations may vary drastically from an area to another and season to season. Because of the complexity and flexibility of rotavirus epidemiology, it is important that rotavirus strain surveillance programs are conducted. Grant from Sanofi-Pasteur MSD to pay the genotyping by RT-PCR in UK.
successfully received an AHSCT from her HLA phenotypic identical father (conditioning regimen containing cyclofosfamide (200 mg/kg) and ATG (20

year 2 cycles of immunosuppressive therapy (antithymocyte globulin (ATG), prednisone, cyclosporine) were given, without result. Finally she suc-

symptoms, liver tests and later the celiac serology. Few months after presentation pancytopenia developed, and evolved into SAA. Within the next

biopsies mild lobular and septal hepatitis with portal fibrosis (Metavir 2). On a gluten free diet (GFD) all symptoms resolved with normalisation of

CD serologic screening was positive for tTGA and EMA. Small bowel histology demonstrated typical subtotal villous atrophy (Marsh 3C) and liver

jaundice and elevated liver enzymes. She was known with mild abdominal pains. Serologic markers for autoimmune hepatitis were negative. The

immunological data in a child with CD who was transplanted for severe aplastic anemia (SAA). An 11-yrs old girl presented with a short history with

time demonstrated in a child after an allogeneic hematopoietic stem cell transplantation (AHSCT)1. We hereby report detailed pathological and

Celiac disease (CD) is a permanent sensitivity to gluten in genetically susceptible individuals. Recently permanent gluten tolerance was for the first

1) Dept. of Pediatrics, Hieronymus Bosch Hospital, 's-Hertogenbosch, The Netherlands 2) Dept. of Pediatric Hematology, UMC St Radboud, Nijme-

J Hans Hoekstra 1,   Annemiek van der Weij 1,   Jacqueline Groot-Loonen 2,   Peter Hoogerbrugge 2,   Frits Koning 3

P0245

Title:
Clinical and Endoscopic Features of Peutz-Jeghers Syndrome

Ho Jun Lee 1,   Hye Ran Yang 1,   Ju Young Chang 1,   Jae Sung Ko 1,   Gyeong Hoon Kang 1,   Jeong Kee Seo 1
1) Seoul National University Children’s Hospital, Seoul, Korea

Summary:
Purpose: Peutz-Jeghers syndrome (PJS) is an autosomal dominant disease characterized by hamartomatous polyps in the gastrointestinal tract and

mucocutaneous hyperpigmentation. There were few studies on long-term follow-up for PJS in children. We investigated the clinical and endoscopic

features of PJS in children. Methods: We retrospectively reviewed the records of all children with PJS who have been followed up at Seoul National

University Children’s Hospital between February 1988 and February 2007. Nineteen patients included in this study (6 males, 13 females). Results:
The mean age at initial diagnosis was 6.5 years. The mean follow-up period was 10.3 years. The family history of PJS was noted in 4 of 19 cases. All

patients had mucocutaneous hyperpigmentations on the lips and buccal mucosa. The chief complaints at the first visit were bloody stool (5 cases),

severe abdominal pain suspected intussusception (5 cases), pigmentation on the lips (4 cases), protruding anal mass (4 cases), and chronic anemia

(1 case). Endoscopic and radiologic examinations of the gastrointestinal tract revealed hamartomatous polyps in the colon (15 cases), in the stomach

(14 cases), and in the small bowel (13 cases). Malignant changes of the polyps were not noted in all patients. Surgical interventions were needed

in 11 patients due to complications of the polyps: intussusception (8 cases), hematochezia (2 cases), and severe abdominal pain with intestinal ob-

struction (1 case). Intraoperative enteroscopic polypectomies of the entire small bowel were performed in 4 cases. Conclusion: In children with PJS,

regular follow-up should be performed for the evaluations of complications or endoscopic-enteroscopic polypectomies if necessary.

P0246

Title:
Celiac disease cured by allogeneic hematopoietic stem cell transplantation

J Hans Hoekstra 1,   Annemiek van der Weij 1,   Jacqueline Groot-Loonen 2,   Peter Hoogerbrugge 2,   Frits Koning 3
1) Dept. of Pediatrics, Hieronymus Bosch Hospital, 's-Hertogenbosch, The Netherlands 2) Dept. of Pediatric Hematology, UMC St Radboud, Nijmegen, The Netherlands 3) Dept. of Immunohematology and Blood Transfusion, LLUMC, Leiden, The Netherlands

Summary:
Celiac disease (CD) is a permanent sensitivity to gluten in genetically susceptible individuals. Recently permanent gluten tolerance was for the first time demonstrated in a child after an allogeneic hematopoietic stem cell transplantation (AHSCT). We hereby report detailed pathological and immunological data in a child with CD who was transplanted for severe aplastic anemia (SAA). An 11-yr-old girl presented with a short history with jaundice and elevated liver enzymes. She was known with mild abdominal pains. Serologic markers for autoimmune hepatitis were negative. The CD serologic screening was positive for tTGA and EMA. Small bowel histology demonstrated typical subtotal villous atrophy (Marsh 3C) and liver biopsies mild lobular and septal hepatitis with portal fibrosis (Metavir 2). On a gluten free diet (GFD) all symptoms resolved with normalisation of symptoms, liver tests and later the celiac serology. Few months after presentation pancytopenia developed, and evolved into SAA. Within the next year 2 cycles of immunosuppressive therapy (antithymocyte globulin (ATG), prednisone, cyclosporine) were given, without result. Finally she successfully received an AHSCT from her HLA phenotypic identical father (conditioning regimen containing cyclofosfamide (200 mg/kg) and ATG (20
Title:
The S357N polymorphism in the hCLCA1 gene is associated with meconium ileus in European Cystic Fibrosis patients

Summary:
Objective: Risk factors for developing meconium ileus in Cystic Fibrosis (CF) include CFTR genotype but also other genes, for which the identity is currently unknown. In CF mice, which mostly die due to intestinal obstruction, the expression of mCLCA3 in the intestine is decreased, while upregulation of mCLCA3 results in amelioration of their intestinal disease. Therefore we investigated the hypothesis that the hCLCA1 gene, the human orthologue of mCLCA3, acts as a modifier gene in CF patients with meconium ileus. Patients and Methods: Initially DNA samples from 298 Dutch CF patients were included, of whom 42 were meconium ileus patients (14%). A second cohort was subsequently investigated with 212 German and 176 Italian CF patients, a total of 388 patients, of whom 57 had had meconium ileus (15%). In these populations the S357N polymorphism in the hCLCA1 gene was genotyped. Results: In the Dutch CF population with a severe genotype an association was found between the SS variant of the S357N polymorphism in the hCLCA1 gene and meconium ileus (p=0.01). In the German and Italian severe genotype CF patients a similar trend was observed. Finally in the pooled European CF population this association was highly significant: p=0.001 when the homozygous SS variant was compared with heterozygosity for this variant in patients with and without meconium ileus (SS vs. SN) and p=0.029 for SS vs. NN. In DF508 homozygous patients a similar association was found (respectively p=0.002 for SS vs. SN and p=0.053 for SS vs. NN). Conclusion: Meconium ileus is strongly associated with the S357N polymorphism in the hCLCA1 gene in European CF patients. This implicates that the hCLCA1 protein has a similar important function in the development of intestinal obstruction in Cystic Fibrosis in humans as in CF mice.

Title:
Effect of high-dose methotrexate therapy on intestinal bacterial flora in children with acute lymphoblastic leukemia

Summary:
Background: Leukemia is a malignant tumor of highest morbidity in childhood in China. High-dose methotrexate (HDMTX) is an effective way of preventing and treating extraspinal ALL. Due to fast proliferation and renew of the cells and bacteria in the intestinal mucus, HDMTX can either kill tumor cells or destroy the intestinal mucus and the bacterial flora in the intestine. In other way, damaged intestinal mucus will cause the decrease of bacterial planting and surviving surface. It is possible to lead to imbalance of the bacterial flora in the intestine and to affect the conditions and prognosis of the children with ALL. Objectives: To study the variation of intestinal lactobacillus in children with acute lymphoblastic leukemia (ALL) and compare with the healthy children. To analyze the relationship between HDMTX and changes of intestinal microflora from microecology. To provide basis for preventing and treating ALL with microecologic agents. Methods: The faces of 36 children with ALL of pre- and post-HDMTX therapy and 36 control children were collected. All the bacteria DNA in stool was extracted and bacterial A260 was measured by biophotometer. The primes of bifidobacillus, lactobacillus and escherichia coli with the 16SrRNA/DNA sequence of bacteria was designed. The quality of the bacteria through general PCR was obtained. The standard curve of fluorescent using a series of accurate bacteria DNA was produced by fluorescent quantitative PCR. The amount of stool bifidobacillus, lactobacillus and Escherichia coli among 36 control group and 36 children with ALL of pre- and post-HDMTX therapy were obtained by compared with the standard curve. Results: Stool bacterial OD260 of first day before treatment, of third day after treatment, of seventh day after treatment in patients with ALL of HDMTX and the control is 2436.3±768.6ng/µl, 1496.5±577.1ng/µl, 1966.6±598.3ng/µl, 3479.3±870.5ng/µl respectively. Compared with the control children, the amount of bifidobacillus, lactobacillus and Escherichia coli has decrease in patients with ALL (P<0.01). Bifidobacillus bifidus logarithmic absolute value of first day before treatment, of third day after treatment, of seventh day after treatment in...
patients with ALL and the control is 7.24±0.33, 6.00±0.27, 6.59±0.33, 9.49±0.41 respectively (P<0.01); Lactobacillus logarithmic absolute value of is 8.10±0.43, 6.73±0.45, 7.45±0.43, 9.12±0.50 respectively (P<0.01). Escherichia coli logarithmic absolute value of is 6.62±0.40, 5.96±0.42, 7.02±0.42, 7.52±0.43 respectively (P<0.01). Conclusions: The amount of Bacillus bifidus, lactobacillus and Escherichia coli in patients with ALL of HDMTX was less than the control. The microecologic agents should be used to adjust and recover the amount of intestinal bacterium, improve intestinal conditions as soon as possible. Key words£ºMethotrexate; Acute lymphoblastic leukemia; Intestinal tract; Bacillus bifidus; Lactobacillus; Escherichia coli

P0249

Title: Variation of intestinal flora in earlier infants by fluorescent quantitative 16S rRNA/DNA targeted PCR

Huang Yong-kun 1, Yang Wu 1, Liu Hua 1, Chao Zhi-lang 1, Liang Kun 1, He Xiang-ying 1
1) 1st Affiliated Hospital, Kunming Medical College, Kunming Yunnan 650032, China

Summary: Objectives: To observe the variation of intestinal flora in newborn babies. Methods: The amount of stool bifidobacillus, lactobacillus and Escherichia coli of first day, fourth day, seventh day after birth in 40 term and 40 preterm babies were measured by the practical fluorescent quantitative 16S rRNA/DNA-targeted PCR. Results: Bifidobacillus logarithmic absolute value of first day, fourth day, seventh day after birth is 5.78±0.46, 6.00±0.43, 7.09±0.6 in term babies and 5.04±0.38, 6.18±0.63, 8.33±0.44 in preterm babies. Lactobacillus logarithmic absolute value of first day, fourth day, seventh day after birth is 5.50±0.81, 6.87±0.81, 9.20±0.87 in term babies and 4.89±0.46, 6.05±0.46, 8.06±0.18 in preterm babies. Escherichia coli logarithmic absolute value of first day, fourth day, seventh day after birth is 6.49±0.40, 7.59±0.58, 7.15±0.55 in term babies and 6.32±0.51, 7.39±0.78, 7.05±0.63 in preterm babies. The above values have statistical difference between group-to-group and within group (P<0.05). Conclusions: There are the developmental variation of intestinal flora formation in newborn babies. The intestinal bacterial flora formation of the preterm babies is slower than of term. Key words£ºNewborn; baby; intestinal flora; Fluorescent quantitative£»PCR.

P0250

Title: VP7 serotypes and VP4 genotypes of group A rotavirus in infantile diarrhea in Kunming in 2006

HUANG Yong-kun 1, WANG Yang-li 1, LIU Mei 1, LIU Hua 1, DUAN Jing 1, ZHOU Li-fang 1
1) 1st Affiliated Hospital,Kunming Medical College, Kunming Yunnan 650032, China

Summary: Objective: To investigate the distribution of G serotypes and P genotypes of rotavirus in Kunming in 2006. Methods: Stool samples were collected from 60 children with diarrhea who were admitted in the Department of Pediatrics, the First Affiliated Hospital of Kunming Medical College from October in 2006 to January in 2007. Enzyme linked immunosorbent assay (ELISA) was used to detect rotavirus genomic RNA and identify electropherotypes of group A rotavirus. Reverse transcription polymerase chain reaction (RT-PCR) and nest polymerase chain reaction (net-PCR) were performed to identify rotavirus G serotypes and P genotypes. Results: Out of 60 samples investigated, 40 were detected rotavirus genomic RNA(66.7%). Out of 40 positive strains E33 were amplification VP7 gene total length. Serotyped G3 predominated in the all kinds of strains(54.5%). 6 were mixed infection of type G1 and G3 (18.1%). 5 were mixed infection of type G2 and G3 (15.1%), 1 was mixed infection of type G1 and G9(3.3%). Other genotypes were not detectable. Out of 40 positive strains 8-genoypeyed P8 predominated in the all kinds of strains(77.5%). 4 were P6 (10%). 1 was mixed infection of type P6 and P8 (2.5%). Other genotypes were not detectable. Conclusion: G3 P8 was the main prevalent type in Kunming. The mixed infection rised than the past years. Key words£ºDiarrhea; infantile; rotavirus; VP7; VP4£»genotype.

P0251

Title: Germline Mutation Analysis of STK11 Gene Using Direct Sequencing and Multiplex Ligation-dependent Probe Amplification Assay in Korean Children with Peutz-Jeghers Syndrome

Hye Ran Yang 1, Jae Sung Ko 1, Jeong Kee Seo 1
1) Seoul National University Children’s Hospital, Seoul, Korea

Summary: Objective: Peutz-Jeghers syndrome is an autosomal dominantly inherited disease characterized by mucocutaneous hyperpigmentation and hamartomatous polyps of the gastrointestinal tract. In this study, mutation analysis of the STK11 gene was performed to establish the genetic background
of Peutz-Jeghers syndrome in Korean children. Methods: This study included 17 children who were diagnosed with Peutz-Jeghers syndrome based on clinical diagnostic criteria between July 2006 and December 2007. The clinical records of these children were reviewed retrospectively. Genomic DNA was extracted from the blood samples of each patient and used for direct sequencing and the MLPA (multiplex ligation-dependent probe amplification) assay. Results: By direct sequencing, mutations in the STK11 gene were observed in 5 of 17 (29.4%) children with Peutz-Jeghers syndrome. Missense mutations were observed in 4, and a frameshift mutation in 1. All these mutations were present in the kinase domain of the STK11 gene. By MLPA analysis, mutations in the STK11 gene were observed in 6 (35.3%) children: exonic deletions were observed in 5 and exonic duplication, in 1. Conclusion: The detection rate of STK11 gene mutations by direct sequencing is relatively low, even in children clinically diagnosed with Peutz-Jeghers syndrome. With the introduction of the MLPA assay as a new cytogenetic technique, large deletions and exonic duplications could also be detected in children with PJS. In the future, these results may be useful for the genetic diagnosis of Peutz-Jeghers syndrome in Korean children.

P0252

Title: Gastric mucosal immune response of Helicobacter pylori-infected children

Hye Won Yom 1, Ky Young Cho 1, Min Seon Cho 2, Mi Ae Lee 3, Jeong Wan Seo 1
1) Pediatrics, Ewha Womans University Hospital, Seoul, South Korea 2) Pathology, Ewha Womans University Hospital, Seoul, South Korea 3) Laboratory Medicine, Ewha Womans University Hospital, Seoul, South Korea

Summary:

Objective: Helicobacter pylori (H. pylori) infection is one of the most common gastrointestinal infections worldwide and almost invariably causes chronic gastritis. Pediatric studies may provide important insights into the mucosal immune response of H. pylori-infection, as children are not submitted to environmental factors, such as alcohol, tobacco and anti-inflammatory medication. But rare previous study has been evaluated. The aim of the present study was to investigate the mucosal immune response against H. pylori in clinically well defined groups: H. pylori-positive (divided into peptic ulcer disease and gastritis) and H. pylori-negative control. Methods: Antral biopsies were obtained from 45 children undergoing an upper GI endoscopy for dyspeptic symptom. T cells (CD3+, CD4+, CD8+) and B cells (CD20+) were analyzed by quantitative immunohistochemistry. Correlation with histology and genotypes (cagA, cagE, vacA, babA2) was evaluated. Results: More lymphocytes were infiltrated in the lamina propria than within the epithelium. T cells (CD3+, CD4+, CD8+) and B cells (CD20+) were significantly increased in the lamina propria of H. pylori-positive group (P<0.01). CD8+ T cells were significantly increased in the lamina propria of H. pylori-positive peptic ulcer disease (P<0.01). Within the epithelium, only CD4+ T cells were significantly increased in H. pylori-positive group (P<0.01). Gastric histologic parameters had closer correlation with lymphocytes in the lamina propria than intraepithelial lymphocytes. There was no association between the cagA, cagE, vacA or babA2 status and mucosal lymphocytes. Conclusion: In conclusion, both T cells and B cells play important roles in the local immune response in the lamina propria of H. pylori-infected children. CD8+ T cells in the lamina propria may be related to the development of peptic ulcer disease in H. pylori-infected children.

P0253

Title: New Insights into Bowel Habits from Bowel Diaries in Constipated and Healthy children: a Prospective Study.

Iben Moeller-Joensson 1, Charlotte Siggaard 1, Soeren Hagstroem 2, Soeren Rittig 1, Jens Christian Djurhuus 2
1) Department of Pediatrics, Aarhus University Hospital, Skejby, Aarhus, Denmark 2) the Institute of Clinical Medicine, Aarhus University Hospital, Aarhus, Denmark

Summary:

Objective: Hard stools and low defecation frequency are often considered to be signs of constipation in children. Our aim was to compare bowel habits in constipated and healthy children using a 3 week bowel diary registering stool frequency and form. Methods: The study was designed as a 2-group prospective controlled study including a total of 51 children ranging from 4 to 12 yrs of age. Of the children, 27 (mean age 7.0±1.8 yrs) were diagnosed with functional constipation by Rome III criteria and 24 (9.1±2.7yrs) were healthy controls. All children underwent a thorough medical history, a physical examination and a 3 week bowel diary in which they registered stool consistency (Bristol Stool Scale), time of all bowel movements and episodes of fecal incontinence. Results: During the 3 week registration period 43% of both healthy and constipated children experienced one or more episodes of hard stools (type 1-2). The overall distribution of stool form prevalence did not differ significantly between the two groups. Surprisingly, the prevalence of hard stools (type 1-2) did not differ between
constipated children and healthy children (10±21.1% vs. 9.4±15.7%). On the contrary, there was a trend towards a higher prevalence of mushy stools (type 5-7) in constipated children compared to healthy children (16.7±22.8% vs. 8.3±12.8%, p=0.13). Constipated children had a significant lower weekly defecation frequency than healthy children (5.5±2.6 vs. 7.9±2.5 bowel movements/week, p=0.01) although only 4 patients had a frequency of less than 3/week. When comparing recalled and recorded habits there was no difference regarding stool frequency. Healthy children showed a significant week-to-week variation of bowel movement frequency (PANOVA <0.05) whereas this was not the case for constipated children. However, three patients (13%) misreported their bowel movements by three or more per week. Conclusion: Recorded bowel habits in children are associated with a large intra- and inter-individual variability. Hard stools are as common in healthy children as in constipated children indicating that stool form is not a good predictor of constipation (as defined by Rome III). On the contrary, the study indicates that mushy stools are associated with constipation. Defecation frequency is reduced in constipation but rarely to a degree fulfilling the Rome III criteria. Such data should be taken into consideration when adjusting diagnostic criteria of constipation.

P0254

Title:
Helicobacter felis in a woman: first report in Brazil (Latin America)

Luciana S Takemura 1, Ides M Sakassegawa-Sperandio 1, Pedro L Camargo 1, Ana P F R L Bracarense 1, Lucio T Marchese 1, Paulo E C Siva 1

1) Universidade Estadual de Londrina, Londrina, Brazil

Summary:
OBJECTIVE-The aims of this study are to report the first identification of Helicobacter felis in human being in Brazil, investigate the identity of the gastric Helicobacter species (H. spp) in her two cats, verify histological lesions on woman’s gastric mucosa and the possible role of these pets in transmitting those bacteria. METHODS-A 35 year-old asymptomatic volunteer woman, participant of another research, and her two cats were submitted to gastric biopsy by gastroscopy. The cats were presented without gastric sings. The samples of gastric antrum, corpus and fundus from the pets, and antrum and fundus from the human being were submitted to Warthin Starry (WS) to diagnosis spiral bacteria and evaluation of density colonization; PCR technique was performed to test genus Helicobacter, and the species: H. pylori, H. bizzozeronii or H. salomonis, H. felis and H. heilmannii; and hematoxilin-eosin to histology exam. RESULTS-The woman presented low density colonization. It was possible to observe two shapes of helicobacter by optic microscopy. PCR was positive to H. pylori and H. felis in samples of the owner. Also, it was observed moderate chronic gastritis with some neutrophils, characterizing an associated acute reaction. Both cats were positive to Helicobacter spp. by WS and PCR. H. heilmannii was infecting one of the cats, and it was associated with mild chronic gastritis. The other cat was negative for the four species tested and its gastric mucosa was normal. CONCLUSION-This report characterized a gastric co-infection by H. felis and H. pylori in a woman. The source infectious was not her cats, although she has always lived in close contact with them. Histological findings were compatible with H. pylori infection. This is the first Latin America report of H. felis infection in human being so far.

P0255

Title:
The Protective Effects of Pre-administration of Synbiotics, Probiotics and Prebiotics on Prevention of Bacterial Intestinal Infection in Mice Model

I-Fei Huang 1, Ondulla Faye-Jackson 2, Christine C. Chiou 1, W. Allan Walker 2, Hai Ning Shi 2

1) Department of Pediatrics, Kaohsiung Veterans General Hospital and National Yang-Ming University, Kaohsiung and Taipei, Taiwan 2) Mucosal Immunology Laboratory, Massachusetts General Hospital and Harvard Medical School, Charlestown, USA

Summary:
Objectives: To test whether synbiotics have more protective effects than probiotics or prebiotics and whether probiotics and/or prebiotics attenuate Smad7 in mice model of bacterial intestinal infection. Materials and Methods: Newborn Balb/c Byj mice (three days of age) were randomly divided into five groups with three to five mice in each group: Normal control group; Citrobacter rodentium (CB) infection alone group; prebiotics (inulin supplemented with oligofructose) group; probiotics (Lactobacillus acidophilus, 1 × 109 CFU/mouse) group and synbiotics (probiotics and prebiotics) group. All mice except normal controls were infected with CB (5 × 108 CFU/mouse) on 5-6 weeks of age and all mice were sacrificed two weeks after CB infection. Body weight and survival of the mice were measured every two days after infection. The clearance of CB was measured through fecal pellets collected from each mouse weekly after infection. The degree of inflammation was analyzed with colonic histologic examination. The cytokine responses in the mesenteric lymph nodes (MLN) and colon of mice were measured by ELISA and RT-PCR. We also detected Smad7 and IκBα in colonic tissue of mice by Western Blot Analysis. Results: Mice pre-treated with probiotics and/or prebiotics demonstrated more body weight gain despite of the infection. The fecal pellet culture of CB performed one week after infection showed significantly fewest bacterial colonies in the synbiotics group. Synbiotics group showed a more significant increase than CB infected alone group on the response of IL-10 in MLN. In contrast, pretreatment with synbiotics had lowest IFN-£ê level in MLN. Pre-administration of probiotics and/or prebiotics resulted in a down-regulation of the colonic TNF-£ê response and up-regulation of the colonic IFN-£ê expression, especially in the probiotics and synbiotics group. Synbiotics group had
significantly higher expression of TGF-β1 than those of CB alone, prebiotics and probiotics group. The most abundant immunoreactivity for Smad7 was CB infected alone group; the least immunoreactivity for Smad7 was the synbiotics group. In contrary, the most abundant immunoreactivity for IleB was the synbiotics group and the least immunoreactivity for IleB was CB infected alone group. Conclusions: Synbiotics have more protective effects on prevention of bacterial intestinal infection and more attenuation of Smad7 than those of probiotics or prebiotics in mice model.

P0256

Title: Anthropometric outcome in asymptomatic celiac disease patients on gluten free diet.

Ignacio Ros 1, Luis Ros 1
1) Miguel Servet Children’s Hospital; Gastroenterology, Hepatology and Nutrition Department, Zaragoza, Spain

Summary:

Aim: To evaluate the anthropometric outcome of the celiac disease patients in a gluten free diet (GFD) with no visible symptoms when the diagnosis was made. Methods: Retrospective case-note study of asymptomatic celiac disease children seen in our Gastroenterology Unit. The Standard deviations for age and sex of Weight, Height, arm circumference, subscapular fold, triceps fold and BMI have been evaluated on two occasions, first when the diagnosis was performed and secondly when puberty ended. Results: 36 patients have been reviewed. The diagnosis was made because of different causes: short height (9), mellitus diabetes (9), celiac disease siblings (15), positive celiac disease antibodies without clinical symptoms (13). All the patients were diagnosed following the ESPGHAN rules. All the patients followed a GFD, with negative blood celiac disease antibodies along their outcome. The statistical analysis was performed using the paired data Student’s t-test (p<0.01) with the SPSS 12.0 pack. Results: (Table 1) No statistical difference was found between the groups Conclusion: Nowadays, there is an increasing group of asymptomatic patients in whom celiac disease diagnosis is made because screening blood tests are performed. We haven’t found an improvement in the long-term anthropometric measures in these asymptomatic children with the GFD. Despite these results, there are many other reasons to continue a GFD in celiac disease patients.

<table>
<thead>
<tr>
<th>Value</th>
<th>Diagnosis</th>
<th>Puberty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>4.48 ± 2.7</td>
<td>15.98 ± 0.66</td>
</tr>
<tr>
<td>Weight SDS</td>
<td>-0.67 ± 0.98</td>
<td>-0.44 ± 1.41</td>
</tr>
<tr>
<td>Height SDS</td>
<td>0.07 ± 1.3</td>
<td>-0.3 ± 1.56</td>
</tr>
<tr>
<td>Arm circumference SDS</td>
<td>0.04 ± 1.13</td>
<td>-0.19 ± 0.98</td>
</tr>
<tr>
<td>Tricipital fold SDS</td>
<td>-0.36 ± 1.02</td>
<td>-0.02 ± 0.99</td>
</tr>
<tr>
<td>Subscapular fold SDS</td>
<td>0.04 ± 0.84</td>
<td>0.61 ± 1.68</td>
</tr>
<tr>
<td>BMI SDS</td>
<td>-0.74 ± 1.4</td>
<td>-0.93 ± 0.94</td>
</tr>
<tr>
<td>GFD time (years)</td>
<td>0.87 ± 3.76</td>
<td></td>
</tr>
</tbody>
</table>

P0257

Title: Neuroblastoma and Protein Losing Enteropathy

Ignacio Ros 1, Rajeev Tomar 1, Susan M Hill 1, Mamoun Elawad 1
1) Department of Gastroenterology, Great Ormond Street Hospital for Children, London, UK

Summary:

Introduction: An association between protein losing enteropathy (PLE) and neuroblastoma has been published in five children. Lymphatic obstruction by the neuroblastoma was the suggested connection in four cases and neurohumoral effects in the other one. Two of them were reported in Turkey. Methods: We present a one month old girl, first child of consanguineous parents of Turkish origin, who developed abdominal distension, diarrhoea, and pedal oedema, and in whom a left adrenal mass was found on ultrasound. Results: Blood tests demonstrated hypoalbuminemia (less than 20 g/l) and anaemia (8.2 mg/dl). The stool alpha-1 antitrypsin was high 14 mg/g (normal value 0-0.48). The white cell count, platelet count, liver function tests, sweat test, pancreatic elastase, faecal sugars, urine albumin excretion, urine electrolytes, viral and bacterial cultures were all normal. VIP and urine vanillylmandelic acid (VMA) were normal and urine homovanillic acid (HVA) was slightly high (23 umol/mmol, normal range 0-20). Abdominal MRI scan and MIBG demonstrated a 1.6x1.5x2.1 left suprarenal mass, with a mildly heterogeneous signal intensity, which suggested a Neuroblastoma. A barium follow through, upper endoscopy and colonoscopy were performed and all were macroscopically and histologically normal. Management of the protein losing enteropathy was commenced with albumin infusions and Octreotide. Discussion: Lymphatic obstruction...
and lymphangiectasia due to the neuroblastoma were excluded as the cause of the PLE and it was not explained by neurohumoral abnormalities. In this case the most likely explanation would appear to be a genetic association between Neuroblastoma and protein-losing enteropathy.

P0258
Title: Pathologic aerophagia. Have you thought off it?
Ignacio Ros 1, Luis Ros 1
1) Miguel Servet Children’s Hospital, Gastroenterology, Hepatology and Nutrition Departament, Zaragoza, Spain

Summary:
Aim: To call out a functional disorder that has to be taken into account in the diagnosis of recurrent abdominal distension. Methods: A 8 year old boy, who was admitted in the hospital several times along 5 months because of abdominal pain with abdominal vespertine distension charts, improving spontaneously during the night, without vomits nor failure to thrive, with normal bowel opening frequency and stools. The beginning of the symptoms was related to moving with his grandparents to a different city. Results: The blood tests were in the normal range, including hemograme, hepatic study, lipids, vitamins, serum lead, and celiac disease antibodies. The abdomen x-ray, ECO and MRI didn’t show remarkable signs. The Hydrogen Tests showed a bacterial overgrowth, without clinical improvement after different antibiotics. Abnormal amounts of air bolus were seen in the barium swallow. A pathologic aerophagia was suspected and psychological assessment and treatment was carried out. The clinical symptoms disappeared and the outcome during the last year was normal. Conclusion: Pathologic childhood aerophagia is an infradiagnosed pathological functional disorder whose clinical criteria was established in the Rome III including air degluction, blenching and abdominal distension for two months, and being more frequent in mental delayed children. It is essential to keep in mind this disorder in children with a prolonged history of abdominal distension and/or blenching, being aware of the other clinical signs, looking for psychological stress factors in order to avoid unnecessary tests and to establish the proper treatment the sooner the better.

P0260
Title: Rapid bedside detection of humoral IgA deficiency and celiac disease antibodies from capillary blood
Ilma R Korponay-Szabo 1, Eva Nemes 1, Zsofia Vecsei 1, Robert Kiraly 1, Markku Maki 2
1) University of Debrecen, Debrecen, Hungary 2) Paediatric Research Centre, University of Tampere, Tampere, Finland

Summary:
Objective: Selective IgA deficiency is the most common congenital immunodeficiency which predisposes to a variety of infections, allergic and autoimmune diseases and also to celiac disease. Patients with celiac disease and IgA deficiency may be missed by commonly used celiac antibody tests that measure only IgA class antibodies. We aimed to evaluate a rapid detection method for IgA antibodies to transglutaminase (tTG) from whole blood which additionally also detects plasma total IgA as a built-in control line. Methods: The second generation Biocard Celiac Test (Anibiotec, Vantaa, Finland) was prospectively applied in 102 patients (median age: 8.9 years, range 1-35) with a clinical suspicion of celiac disease and in 100 unselected 6-year-old children during a population screening study. Further, 30 normal infants aged 0-6 months were tested to evaluate the detection cut-off of the IgA control line. Rapid test results were compared with results of the laboratory determination of IgA and IgG endomysium and tTG antibodies and the quantitative measurement of serum total IgA. Antibody-positive subjects underwent jejunal biopsy. Results: Celiac disease was diagnosed in altogether 43 patients. The rapid test results had 97.3% sensitivity for the final diagnosis of celiac disease by biopsy in IgA competent patients and agreed with laboratory results in 98.1% of normal IgA samples. Of the evaluated subjects, 22 were IgA deficient as shown by the absence of both the celiac test and IgA control lines; measurement of total serum IgA yielded values <0.05 g/l in all. IgA deficient celiac patients were positive in IgG antibody tests. During the population screening one IgA deficient subject without celiac disease was found. The evaluation of young infants with physiologically low levels of blood IgA showed that the detection limit of the rapid test is around 0.2 g/l, and this level still produced a faint but visible IgA control line. At IgA levels lower than the normal for age a faint however visible IgA control line was observed. Conclusion: Rapid detection of celiac disease antibodies with the combined detection of plasma total IgA enhanced diagnostic reliability. Double negative cases should be further investigated with IgG-based laboratory tests. Detection of humoral IgA deficiency by a rapid method may also be of interest for the evaluation of patients with allergy, recurrent airway or gastrointestinal infections and suspected for having an immunodeficiency.

P0261
Title: INFLAMMATORY BOWEL DISEASE IN PEDIATRICS / ISOLATED INTESTINAL STENOSIS : AN UNUSUAL PRESENTATION
Summary:
Introduction: Inflammatory bowel disease (IBD) is one of the main gastrointestinal illnesses leading to serious morbidity in children and adolescents. Crohn's disease can affect any area of the gastrointestinal tract. Small bowel and colon could be affected with involvement and compromise of the whole intestinal wall. Objective: Report the clinical presentation and surgical treatment of a patient who developed acute intestinal obstruction as the first and only symptom of Crohn's disease who was the final diagnosis. Case report: A 15-year-old male patient was admitted to the hospital because of a 20-day history of gastric and bilious vomiting, weakness, 12kg weight loss, distension and abdominal pain secondary to intestinal obstruction. He underwent exploratory laparotomy. During surgery, 30cm of stenosed jejunum was resected within 100 cm from the Treitz, and a terminoterminal intestinal Anastomosis was performed. Pathologic examination showed rigid intestinal walls, with an stenosed area, ulcers and pseudopolyps. Histopathologic exam showed transmural chronic inflammatory changes and walls ulcers compatible with Crohn's disease. After surgery, endoscopy and videocapsule were performed, showing normal results. Specific laboratory workup revealed negative antineutrophil cytoplasmic antibody (ANCA), positive anti-Saccharomyces (ASCA) IgG-IgA and Alpha1 antitripsin clearance. The patient is asymptomatic 18 months after surgery with normal weight after receiving nutritional support and 2 grs of mesalazine daily. Conclusions: Crohn's disease may present with a wide range of symptoms, including intestinal stenosis as an only symptom so histopathologic examination and specific laboratory and endoscopic tests must be done in the postoperative period to get an accurate diagnosis and perform adequate treatment. PREFERENCE PRESENTATION POSTER/CARTEL

P0262
Title: Th1/Th17 signature in response to acute and chronic exposure to gliadin in intestinal biopsies of celiac patients.

Ainara Castellanos-Rubio 1, Inaki X Irastorza 1, Izortze Santin 1, Juan C Vitoria 1, Luis Castano 1, Jose R Bilbao 1
1) Hospital de Cruces, Barakaldo, Spain

Summary:
Objective: To determine the expression of cytokines of both Th1 (IFNG and IL12A) and Th17 (IL17A, IL23A, IL6) subsets in intestinal biopsies of celiac disease patients in response to chronic and acute exposure to gliadin. Methods: For the chronic exposure RNA was isolated from 10 intestinal biopsies from active CD patients and from 10 patients on gluten-free diet (GFD). For the acute exposure, ten biopsies from patients on GFD were cut in two portions and incubated in vitro for 4 hours with and without 10µg/ml gliadin. Expression of Th1 and Th17 genes was quantified using Taqman RT-PCR assays. RT-PCR reactions were carried out in duplicate in a 7900 Real Time PCR System with a single-reaction enzyme mixture. Expression of the housekeeping gene RPLPO was simultaneously quantified in each experiment and used as an endogenous control, relative expression of each gene was calculated using the accurate Ct method. Results: Th1 type cytokine mRNA expression was only observed in the chronic response to gliadin being the increase of IFNG and IL12A significant when comparing biopsies of active CD patients with patients on GFD (p<0.001). In the acute exposure no significant increase of these cytokines was observed. Regarding Th17 response, IL23 expression was undetectable in the majority of biopsies in the chronic exposure experiment and there was a small, although not significant, increase after the 4h gliadin insult. The level of IL17A mRNA was higher in the chronic response to gliadin and lower in response to the acute exposure. An increase of the IL6 expression was observed only in the in vitro incubated biopsies. Conclusion: Our results confirm the predominance of a Th1 response in the advanced stages of celiac disease and that it is not dominant in the rapid response after contact of the intestinal mucosa with gliadin. On the other hand, our results support the key role of IL6, required by naïve CD4+ T cells to differentiate into Th17 cells, as an initiator of a subsequent Th17 activation. The absence of a significant increase in IL21 and IL17 expression in stimulated biopsies suggest that the gliadin incubation may not be optimal for the activation of all mechanisms that lead to a Th17 response.

P0263
Title: ALTERATIONS OF THE AXIS PARATHORMONE-CALCIUM-PHOSPHORUS, INDUCED BY THE ADMINISTRATION OF SODIUM PHOSPHATE ENEMAS IN THE PEDIATRIC POPULATION.

Isabel Casas Gallegos 1, Marta Gomez Chiari 1, Silvia Meavilla Olivas 1, Joshua Covarrubias Esquer 1, Vicente Varea Calderon 1
1) Hospital Sant Joan de Deu, Barcelona, Spain

Summary:
INTRODUCTION: Sodium phosphate enemas, are hypertonic solutions that act as osmotic laxatives that increase the absorption of phosphorus and sodium in the colon. They are used frequently for the treatment of functional and organic constipation, and bowel cleaning before surgical or endoscopic procedures. Different side-effects after enemas administration have been described like hyperphosphatemia, hypocalcemia, increase of the
concentration of the parathormone and alteration of the renal function. TARGET: Determine clinical and metabolic effects in the axis parathormone-calciun-phosphorus after administration of sodium phosphate enemas in the pediatric population. MATERIAL AND METHODS: We studied 22 children (age from 2 to 15 years) with diagnosis of functional constipation. Patients with anatomical alterations that induce retention of liquids, kidney failure, defects of calcium metabolism, previous urologic surgery, liver and cardiac dysfunction, colagenopathies and weight under 12kg, were excluded. Informed consent was obtained in all the patients. RESULTS: 22 children (16 men and 6 women) with diagnosis of functional constipation, with impactacion, were included. The age average was 5 years 9 months (range 2 - 15 years). Serum calcium, phosphorus and hormone paratohormone was analized prior and 2 hours after the administration of sodium phosphate enema (dose 5ml / kg , maximum 140 ml). 24hrs after de administration of the enema, we realized a telephone poll to evaluate symptoms associated. We observed an increase in the levels of serum phosphorus (16 children) and parathormona (6 children). We did not observed hypocalcemia or any clinical associated symptoms. CONCLUSION: Sodium phosphate enemas produce alterations in the calcium-phosphorus metabolism. We could see a clear increase of the phosphorus, but without significant changes in the serum calcium, although we detect an increase of the parathormone. To avoid complications due to the hyperphosphatemia and the hypocalcemia, the load of phosphate should be adjusted according patient’s weight and renal function.

P0264

Title: ESOPHAGEAL ACALASIA IN CHILDREN: DIAGNOSE, HANDLING AND CLINICAL COURSE.
Isabel Casas Gallegos 1, Josheu Covarrubias Esquer 1, Silvia Meavillas Olivas 1, Javier Martin de Carpi 1, Vicente Varea Calderon 1
1) Hospital Sant Joan de Déu, Barcelona, Spain

Summary:
INTRODUCTION: Acalasia is a primary motor disorder, characterized by an abnormal motillity of the esophagus and by a lack of relaxation of inferior esophageal esfinter, in respond to the swallowing. Its presentation in the childhood is exceptional. SUBJECTS AND METHODS: We reviewed the clinical histories of 7 children diagnosed of acalasia in our service in the period of October 2001 – February 2008. The diagnostic methods, clinical course and results of treatment are described. RESULTS: 7 patients were diagnosed of acalasia, 3 males and 4 females. The age average was 9.4 years (range 4 - 13 years). The time average of diagnose was of 6.5 months (range 2 - 12 months). The main symptoms were disfagia and vomits. The barium enema established the diagnose in 6 cases (85%) showing and objective absence of peristalis all along the esophagus, with increase of pressure and absence of relaxation of the inferior esophageal esfinter. The treatment was predominantly surgical. The surgical technique of elec-
On the basis of the present findings, routine screening for HB-D shall be done in the initial work-up of Pts with CD.

P0266

Title: PREVALENCE OF AUTOIMMUNE DISORDERS IN PEDIATRIC PATIENTS WITH CELIAC DISEASE

Kohn Isidoro Joaquin 1, Riqa Caroline 1, Marchisone Silvia 2, Isli Monica 1, Nuñez Maria H. 1, Furnes Raqueal A. 3
1) Hospital de Niños, CORDOBA, ARGENTINA 2) Hospital Infantil Municipal, CORDOBA, ARGENTINA 3) Hospital Privado, CORDOBA, ARGENTINA

Summary: Kohn IJ¹ ³, Riga C¹, Marchisone S², Isl M¹, Nuñez MH¹, Furnes RA³. 1-Servicio de Gastroenterología, Hospital de Niños; 2-Servicio de Gastroenterología Hospital Infantil; 3-Servicio de Gastroenterología Pediátrica Hospital Privado. Córdoba, ARGENTINA. Celiac disease (CD) is considered an autoimmune disease that can be associated to a great number of other autoimmune disorders (AI-D). Objective: Our aim was to determine the prevalence of other AI-D in patients (Pts) with CD. Patients and methods: We reviewed clinical charts of Pts with CD who were assisted in 3 Pediatric Gastroenterological Centers from Córdoba, Argentina, to identify Pts with CD and other AI-D. Results: The data of 823 Pts with CD were obtained, of which 11 were ruled out because of inadequate data registration. Of the remaining 812 Pts, 494 (60,8%) were females (F). In 132 Pts (16,4%) (77 F = 58%) 133 AI co-morbidities and 29 cromosomal abnormalities associated with autoimmunity (F 15=52%) were registered. 32 Pts had more than 1 association. For e., 1 Pt had AIH, IDDM, AI-T and UC associated to CD. AI-D associated in Pts with CD (n 133, F 78 = 58,6%): Diabetes (IDDM) 61 (7,5%), AI tiroiditis (AI-T) 21 (2,6%), AI Hepatitis (AIH) 17 (2%), Cholangitis 5 (2 with AIH), Cryptogenic cirrhosis 1, Vitiligo 7, Psoriasis 3, Alopecia Areata 1, Pemphigus Folaceus 1, Dermatitis Herpetiformis 1, Ulcerative Collitis 5, Eosinophilic Gastritis 1, Nephrotic Syndrome 1, Glomerulonephritis 1, Dilated Cardiomyopathy 1, Sjogren's syndrome 2, Rheumatoid Arthritis 2, Gonadal Dysplasia 1, AI Hemolytic Anemia 1. Cromosomal abnormalities associated with autoimmunity: Down Syndrome (DS) 26 = 3,2% (F 12=45%), Turner Syndrome 2 and 46XX-18Q syndrome 1 Conclusions: In our series of patients with CD 16.4% showed associations with a variety of other AI-D, with IDDM, DS, AI-T and AIH being the most frequent. These co-morbilities affect various organs and systems, which reveals the complex interlinkages of this disease. In this context, the CD should be considered a multi-systemic disease with consequent implications for its proper monitoring. There were no significant differences in relationship to sex in the overall prevalence of AI-D.

P0267

Title: Efficacy of Metothrexate in Induction and Maintenance of Remission in Pediatric Crohn’s Disease

Slaven Abdovic 1, Iva Hojsak 1, Zrinjka Misak 1, Alemka Jaklin Kekez 1, Sanja Kolacek 1
1) Children's Hospital Zagreb, Zagreb, Croatia

Summary: Objective: Methotrexate (MTX) has been shown to induce and maintain remission in Crohn’s Disease (CD) in many adult studies, but pediatric data are limited. We therefore aimed to review the efficacy and safety of MTX in both induction and maintenance of remission in our patients. Methods: Data of all children with CD (n=47) diagnosed and treated from 1997 to 2007 were retrospectively analyzed. Children who were steroid dependent and resistant to or intolerant of Azathioprine (AZA), and treated with MTX intramuscularly 15mg/m2 were included. Case records were reviewed for site of disease, medications, time to achieve remission, duration of remission, and complications. Results: A total of 8 children (17%) received MTX; 5 were male and 3 were female, median (range) age of 16 years (14-17). Indications to use MTX were a nonresponsive to or relapse under AZA (n = 7) or AZA intolerance/toxicity (n = 1). All patients had ileocolonic/ileocecal disease (5/3 patients). Six children (75%) achieved remission after MTX introduction (remission induction median time was 2.5 months). None of them relapsed during follow-up (remission duration from 6 months to 3 years with median 2.5 years). In other 2 patients treated with MTX - one relapsed after 5 months, other one had adverse effect – nausea and vomiting which resulted in MTX discontinuation with relapse after one month. Conclusion: Although data in our study are limited with small number of patients, we can conclude that MTX is well tolerated and effective treatment in remission maintenance in children with CD which disease is not responsive to standard medication (steroids and AZA).

P0268

Title: Primary therapeutic role of enteral nutrition vrs. corticosteroids in paediatric patients with CD: A retrospective comparison study

Iva Hojsak 1, Slaven Abdovic 1, Zrinjka Misak 1, Alemka Jaklin-Kekez 1, Sanja Kolacek 1
**Summary:**

Objective: There are still controversies for optimal treatment of active Crohn's Disease (CD). Both, enteral nutrition (EN) and corticosteroids (CS) are commonly used for induction of remission in patients with CD. The aim of this study was to investigate duration of remission (time until first relapse) in children with active CD treated with EN in comparison to patients treated with CS. Methods: Data of all newly diagnosed CD patients (n=47) treated in Children's Hospital Zagreb from 1997 to 2007 were retrospectively analyzed (27 male and 20 female, age range 9-17.8 years). As a first line therapy for remission induction, EN was introduced in 30 (63.8%) patients vs 16 patients (34.04%) treated primarily with CS. EN consisted of a polymeric formula, given exclusively for 5-6 weeks. CS were introduced in the dose of 1 mg/kg for 4 weeks – after that period steroids were withdrawn by following a stepwise decrees. All patients received concomitantly either mesalamine (N=16; 34.8%), azathiprine (N=9; 19.6%) or both (N=16; 45.7%) with the aim to maintain the remission. Reasons for treatment with CS were: predominantly colonic disease, very severe form of the disease, treatment started in other hospital, strong preference of the child. Results: From 30 patients who were treated with EN, 21 patients (70%) established remission which lasted from 4 months to 5 years (mean 17.6 months). In all patients in whom EN failed, remission was achieved with CS. In CS group, all patients entered remission. However, duration of remission was significantly shorter in the steroid group (range: 3-12 mo; mean 6 mo; p<0.01). There was no statistical difference between EN and CS groups regarding age at diagnosis and duration of illness. However, majority of patients successfully treated with EN had either ileal or ileocecral disease (71.4%), compared with steroid group in which 81.25% had ileocolonic and 18.75% colonic disease. Conclusion: In our paediatric patients with CD, CS successfully induced remission in all patients compared to 70% of children treated with EN. Nevertheless, patients treated with EN had significant longer remission compared to patients treated with CS.

**P0269**

**Title:** Therapeutic role of enteral nutrition in active paediatric CD: factors associated with failing

Iva Hojsak 1, Zrinjka Misak 1, Slaven Abdovic 1, Alemka Jaklin-Kekez 1, Sanja Kolacek 1
1) Children's Hospital Zagreb, Zagreb, Croatia

**Summary:**

Objective: According to present guidelines (1), enteral nutrition could be the first therapeutic choice for the treatment of active disease in paediatric patients with Crohn's disease (CD). EN induces remission, corrects malnutrition which is common in children with CD, and has better safety profile compared to steroids. However, data are scarce, and more studies are needed (2). The aim of our study is, therefore, to investigate risk factors associated with failing of EN in paediatric patients with CD. Methods: Data of all newly diagnosed CD patients (n=47) treated in Children's Hospital Zagreb from 1997 to 2007 were retrospectively analyzed (27 male and 20 female, age range 9-17.8 years). As a first line therapy for remission induction, EN was introduced in 30 (63.8%) of all treated patients. EN consisted of polymeric formula, given exclusively for 5-6 weeks. In all of the patients, either mesalamine (N=8; 26.7%) or azathiprine (N=8; 26.7%) or both (N=16; 47.7%) were concomitantly introduced with the aim of maintaining the remission. Results: Remission was achieved in 21 patients (70%) treated with EN. To explore the risk factors for failing of EN, patients were divided in two groups: group A – patients in which treatment with EN was successful and group B – patients who failed EN. Group A and B differed in: a) Location of disease: ileocolonic disease was present in 100% (group B) vs 28.57 % (group A) of patients. Disease location for other group A patients was ileocecal (61.9%) and ileal disease (9.52%); b) Type of disease (Wiena classification): stricture or stenosis was present in 33.33% (group B) vs 9.52% (group A) of patients; c) Perianal disease was present in 22.22% (group B) vs 52.38% (group A) of patients. d) Upper GI disease was present in 11.11% (group B) vs 28.57% (group A) of patients. There were no differences in respect to: a) Duration of illness (6 mo vs 6 mo); and b) Age at diagnosis (mean 13,8 y vs 13,8 y). Conclusion: Predominantly colonic disease was significantly more common in children with CD who failed to achieve remission on EN, while perianal disease and the involvement of upper GI tract were associated with a good therapeutic response to EN. (1) Gut 2006; 55(Suppl. 1):i36-i58. (2) Dziechciarz et al. Aliment Pharmacol Ther. 2007;26:795-806.

**P0270**

**Title:** FASTING, BOWEL CLEANSING AND SURGICAL TRAUMA ARE GUT GRAM NEGATIVE BACTERIAL OVERGROWTH FACTORS IN RATS

Ana MA Liberatore 1, Andrea Y Watanabe 1, Ricardo L Souza 1, Ricardo K Toma 1, Marjorie Y Taki 1, Ivan HJ Koh 1
1) Federal University of São Paulo, São Paulo, Brazil

**Summary:**

Introduction: Before seventies, colorectal surgery post-operative infections were around 70%, and colonic cleansing, fasting and antibiotic therapy
became a pre-op routine procedure. In contrast, recent findings have shown the colonic cleansing inefficacy to lower infectious complications post colo-rectal interventions, whilst demonstrating increased risk of infection. However, the addition of antimicrobial therapy is considered as an effective maneuver. Currently, bacterial translocation (BT) became a pivotal hypothesis in the genesis of the host systemic infection, especially when gut bacterial overgrowth and gut barrier damage and/or splancnic hypoperfusion state is present in critically ill patients. Objective: Herein we investigated the role of fasting, colonic cleansing and trauma on gut facultative anaerobic Gram negative colonization. Methods: Wistar rats were distributed in following groups: 1) fasting (24h and 48h periods); 2) fasting plus colonic cleansing with Manitol 10% or saline 0,9% (up to 60h periods); and 3) minor trauma (jugular catheter insertion) under general anesthesia (6h, 12h, 24h, 48h, 72h periods). Fecal bacterial growth was monitored in fasting and trauma groups. Intestinal segments were harvested, cultured, and the bacterial recovery was counted (CFU/g) in cleansing and trauma groups. BT process was investigated post trauma procedure by culture of mesenteric lymph nodes. Naïve rats group was used as control group. Results: Fasting provoked 100 to 1000 times overgrowth at feces within 48h (p<0,05). The colonic cleansing plus fasting determined even higher colon G- overgrowth up to 60h period (p

P0271

**Title:**

THE ROLE OF LYMPHATIC AND HEMATOLOGICAL ROUTES OF BACTERIAL TRANSLOCATION IN RATS

Ivan Hj Koh 1, José I Menchaca-Diaz 1, Luciano Oliveira-Vilela 1, Reinaldo Salomao 1, Marcelo Ruiz-Silva 1, Ana MA Liberatore. 1

1) Federal University of São Paulo, São Paulo, Brazil

**Summary:**

Bacterial translocation (BT) has been increasingly related to the pathogenesis of systemic inflammatory response, sepsis and progression to multi-organ failure. The GI role on these diseases is attributed to the passage of luminal antigen contents into the systemic compartment or by activated products from complex intestinal immune repertoire during BT whilst gut barrier damage in concurrence to severe illness with subsequent gut and systemic immune crosstalk. Objective: Evaluation of the role of lymphatic and hematological routes of BT on host microcirculatory hemodynamic, inflammatory mediators release and their role in the sepsis aggravation. Methods: Wistar rats were distributed in 5 groups: 1)BT with/without mesenteric lymph duct (LD) ligation, interrupting or not the gut lymph flow to bloodstream, and monitoring bacterial recovery by culture from MLN, liver, spleen and blood 2h after BT induction (oroduodenal inoculation with 5ml/100g of body weight containing 1010CFU/ml of E. coli with known capacity to translocate); 2) BT-induction with/without LD ligation and evaluation of mesenteric microcirculation by intravital-videoimicroscopy plus jejunum, ileum, liver and kidneys tissue perfusion by laser-doppler flowmeter; 3) BT-induction with mesenteric lymph collection by catheterization of the LD and determination of inflammatory mediators from lymph (IL-6, IL-10 and TNF-alfa) plus systemic blood TNF-alfa by CBA-Flex and Elisa assays; 4) Combination of BT to non-lethal sepsis (1ml/100g of body weight into the jugular vein) plus systemic blood TNF-alfa by CBA-Flex and Elisa assays; 5) Injection (iv) of collected lymph from BT group into Naïve animals and evaluation of microcirculation damage. Results: Independently of LD ligation, the bacterial recovery to all compartments remained alike, demonstrating the non-passage of luminal bacteria into the bloodstream by lymphatic via. Microcirculation and perfusion impairments were observed at both BT-without LD ligation and lymph injected animals. BT + sepsis provoked death (50%) only at LD non-ligated animals. The microcirculation damage and hypoperfusion were due to the lymph carrying gut origin pro-inflammatory mediators (TNF, IL-6 and IL-10), once lymph exclusion completely abrogated vascular injuries. Conclusion: BT occurs through the hematological via and gut immune system activated products by BT-event are carried out by lymphatic via determining the crosstalk between gut and systemic immune response.

P0272

**Title:**

**Clinical manifestations in pediatric inflammatory bowel disease (IBD) in Poland: a prospective, two-year study, 2002-2004.**

IBD Working Group 1

1) The Polish Society for Pediatric Gastroenterology, Hepatology and Nutrition, Warsaw, Poland

**Summary:**

Objective: Defining the clinical presentation of newly diagnosed pediatric IBD in children in Poland between 2002 and 2004. Methods: Patient records from 24 pediatric gastroenterology centers which service the whole population of Poland were prospectively collected between Dec. 2002 and Dec. 2004. IBD diagnosis was based on clinical, radiological, endoscopic, and histological features. Records of all newly diagnosed IBD individu-
als 0-18 years old were mailed by the diagnosing physicians to the coordinating center. Results: COMMON INTESTINAL SYMPTOMS CD% UC% IC%

- Erythema nodosum: 5.2 3.5 Liver disease: 0.9 5.2 2.8
- Arthritis: 5.2 3.9 2.8
- Eye involvement: 0.0 0.0 0.7
- Aphtous ulcers: 10.3 1.7 4.9
- Abdominal pain: 87.1 77.5 72.9
- Diarrhea: 63.8 84.4 73.6
- Loss of appetite: 55.2 40.3 36.1
- Mucus per rectum: 35.3 44.2 42.4
- Bleeding per rectum: 45.7 35.3 39.1
- Weight loss: 63.8 45.5 25.0

- Perianal involvement: 18.1 2.6 3.5
- Extraintestinal manifestations: 35 (30.2 %) of CD, 39 (16.9 %) of UC, and 26 (18.1 %) of IC patients. Seven of 65 (10.8 %) of the patients 0 to 5 years of age came to presenting symptoms. Although the time from the first symptoms to diagnosis remained stable over the years, the rate of patients with extraintestinal symptoms doubled between the first and second year of the study.
age had extraintestinal manifestations, compared with 21.5 %, and 21.9 % of those 6-10, and 11-18 years old respectively. Erythema nodosum was the most common extraintestinal manifestation in CD patients and liver disease was the most common extraintestinal manifestation in UC patients. Systemic manifestation (fever, growth delay) of the disease was very common. Fever was observed in 152 (31%) patients and growth delay in 71 (14.5%). Both were more common in CD patients, compared to UC and IC patients. Growth failure was more common in 0-5- year-olds, compared to other age groups. Conclusions: Patients 0-5 years old with IBD have a higher prevalence of systemic manifestation, as compared with older children. However, in this age group the prevalence of the other extraintestinal manifestation is the lowest.

P0273

Title: Diagnostic work-up of inflammatory bowel disease among children in Poland: a prospective, two-year study, 2002-2004.

IBD Working Group 1
1) The Polish Society for Pediatric Gastroenterology, Hepatology and Nutrition, Warsaw, Poland

Summary:
Objective: Assessing the diagnostic work-up of new inflammatory bowel disease (IBD) among children in Poland between 2002-2004. Methods: Patient records from 24 pediatric gastroenterology centers which service the whole population of Poland were prospectively collected between Dec. 2002 and Dec. 2004. IBD diagnosis was based on clinical, radiological, endoscopic and histological features. Records of all newly diagnosed IBD individuals 0-18 years old were mailed by the diagnosing physicians to the coordinating center. Results: There were 491 new IBD patients. Of those, 116 had Crohn's disease (CD), 231 had ulcerative colitis (UC) and 144 had indeterminate colitis (IC). Complete diagnostic work-up (upper GI endoscopy, SBFT, colonoscopy) was performed in 102 (20,77%) of all IBD patients. Specifically, 45% of CD, 11% of UC, and 16% of IC patients received complete diagnostic work-up. Conclusions: Performing of each diagnostic test in our study is comparable with that presented in studies from western countries. However, only 20,77% of all new IBD patients had a complete work-up. The lowest percentage of complete work-up was among IC patients (16%), which may suggest a tendency towards under- or mis-diagnosis. Table 1. Diagnostic work-up performed

<table>
<thead>
<tr>
<th>DIAGNOSTIC TESTS</th>
<th>CD %</th>
<th>UC %</th>
<th>IC %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper GI endoscopy</td>
<td>85.3</td>
<td>53.7</td>
<td>47.2</td>
</tr>
<tr>
<td>SBFT</td>
<td>57.8</td>
<td>17.0</td>
<td>21.8</td>
</tr>
<tr>
<td>Colonoscopy</td>
<td>89.7</td>
<td>82.3</td>
<td>75.4</td>
</tr>
<tr>
<td>Sigmoidoscopy</td>
<td>8.7</td>
<td>18.6</td>
<td>16.2</td>
</tr>
<tr>
<td>Rectoscopy</td>
<td>9.6</td>
<td>22.5</td>
<td>28.2</td>
</tr>
</tbody>
</table>

P0274

Title: High resolution computed tomography and pulmonary function tests in children with inflammatory bowel diseases

Piotr Albrecht 1, Izabella Lazowska-Przeorek 1, Aleksandra Banaszkiewicz 1, Katarzyna Krenke 2, Joanna Peradzynska 2, Joanna Lange 2
1) Dept. of Gastroenterology and Nutrition, Warsaw Medical University, Warsaw, Poland 2) Dept. of Pulmonology and Allergy, Warsaw Medical University, Warsaw, Poland

Summary:
Objective: Several extraintestinal manifestations of inflammatory bowel diseases (IBD) have been characterized. There are different pulmonary manifestations, including small and large airway dysfunction as well as interstitial lung disorders. The aim of this study was to screen children with IBD for pulmonary dysfunction. Methods: 19 children with IBD were included in the study (mean age 13,23 +/- 3,6). In each patient high resolution computed tomography (HRCT), spirometry, body plethysmography and in 12 children diffusion capacity for carbon monoxide (DLCO) were performed. Results: No changes in HRCT were found. Results of spirometry were normal, the only observed abnormalities affect small airways tests (2 cases). DLCO was abnormal in 5 cases (42% of studied population). Conclusions: In our study we observed abnormal diffusion capacity in almost half of the study population. Although the HRCT was normal in all cases those results may suggest an early stage of the interstitial lung disease. These patients need further observation in longitudinal study.
Increased expression of toll-like receptors 2, 4, and 6 in the intestine in an animal model of necrotizing enterocolitis

Yuying Liu 1, Jon Marc Rhoads 1
1) University of Texas, Department of Pediatrics, Houston, TX, U.S.A.

Summary:
Necrotizing enterocolitis (NEC) is the leading cause of neonatal gastrointestinal morbidity and short bowel syndrome. Gut epithelial cells directly sense and respond to specific bacterium-derived-products, such as peptidoglycans from gram + organisms and lipopolysaccharide (LPS) from gram – bacteria. Hypothesis: Toll-like receptors (TLRs) on the cell surface act as sensors of microbial infection and play a role in the initiation of the inflammatory and immune defense response. We hypothesized that TLR2 which binds peptidoglycans and forms heterodimers with TLR6 for downstream signaling, and/or TLR4, which binds LPS, would be upregulated in NEC. Methods: We used a model of NEC established in the lab of Ford et al. in which newborn rat pups are exposed to hypoxia (5% O2 x 10 min. 3 times daily x 3 days) and cow milk formula feeding. Four NEC rats and 3 control rats were studied; none died. We used immunofluorescence, immunohistochemical staining, and routine histological staining for analysis. Results: Histologically, the intestinal mucosa had an injury score of ≥ 3 compared to 0 for normal mucosa. Hypoxia-inducible factor-1 (HIF1) was strongly upregulated in the ileal mucosa of NEC animals. In the NEC ileum, we observed the increased expression of TLRs 2, 4, and 6 in the intestinal villi compared to controls. Most importantly, in experimental NEC, we also observed a re-distribution of TLRs to the surface epithelium, but also strong staining of the lamina propria. Upregulation by hypoxia of intestinal epithelial cell HIF1, TLR2 and TLR4 were confirmed in cultured intestinal cell line IEC-6 (which has the cdx2 transgene to enhance villus cell differentiation). In addition, we found that Lactobacillus GG strongly enhanced TLR2 expression. Conclusion: Despite severe tissue injury in NEC, TLR expression is robust and more directed toward the surface epithelium and lamina propria white blood cells. These changes may predispose the mucosa to inflammatory injury evoked by bacterial cell wall components and milk proteins. We plan to further study the effects of probiotic organisms and milk proteins on TLR-mediated immune tolerance and activation, respectively, in cultured intestinal cells and experimental NEC.

Chronic Abdominal Pain-related Childhood Functional Gastrointestinal Disorders Based on the Rome III Criteria in Korea

Jae Joon Han 1, Hye Ran Yang 1, Jae Sung Ko 1, Jeong Kee Seo 1
1) Division of Pediatric Gastroenterology Hepatology and Nutrition, Department of Pediatrics, Seoul National University College of Medicine, Seoul, Korea

Summary:
Background & Aims: Chronic abdominal pain is a common problem in pediatric clinics. But its symptom subtypes based on the Rome Criteria for Childhood Functional Gastrointestinal Disorders were not sufficiently investigated in Asia, especially in Korea. We examined chronic abdominal pain in Korean children and adolescents by recently developed Rome III criteria for functional gastrointestinal disorders. Methods: One hundred ninety four patients with chronic abdominal pain were studied prospectively at a tertiary care medical center from July 2006 to August 2007. After parents completed the Questionnaire based on the Rome III Criteria, pediatricians rechecked the answers of the questionnaire and proceeded with medical evaluations including laboratory tests, imaging studies, and endoscopic examinations. Results: After medical evaluation, 167 of 194 patients (86.1%) were classified as functional gastrointestinal disorders revealing no organic causes of chronic abdominal pain. Patients ranged from 4 to 16 (mean±SD, 9.1±3.2) years old, including 84 (50.3%) boys and 83 (49.7%) girls. Among 167 patients, 89.8% (n=150) met one of the Rome III criteria (Functional dyspepsia, 29.3%; Irritable bowel syndrome, 25.7%; Abdominal migraine, 7.8%; Childhood functional abdominal pain, 14.4%, Childhood functional abdominal pain syndrome, 12.6%). Only 10.2% were regarded as unclassified by Rome III criteria for functional gastrointestinal disorders. Compared to the childhood functional abdominal pain, children with irritable bowel syndrome and functional dyspepsia showed statistically significance in age and in symptom duration. Conclusions: Because the Rome III criteria are more inclusive and easily applicable to chronic abdominal pain, it will provide more accurate information and better diagnosis for children and adolescents with chronic abdominal pain.
Summary:
Clinical Outcome and Long Term Follow-up of Chronic Functional Constipation in Children Yoon Jin Ahn, M.D. and Jae Ock Park, M.D. Department of Pediatrics, College of Medicine, Soochunhyang University, Bucheon, South Korea Purpose: The purpose of this study was to evaluate the long term follow-up and the factors contributing treatment outcome for chronic functional constipation in children. Method: This study enrolled 63 children who were kept on access with phone contact with chronic functional constipation. They were treated in the Bucheon Soochunhyang Hospital for more than 1 month and observed from Jan. 2001 to Jun. 2005. We analyzed the clinical features, symptoms and signs, the course and results of the treatment. Results: Male to female ratio was 35 (55.6%):28 (44.4%). Mean age at onset of symptoms and diagnosis was 21.1±23.5 (1.9±84.0) months and 47.1±34.2 (6.9±138.0) months, respectively. Mean defecation frequency before treatment was 3.2±2.3 (0.5±10.0) times a week. The symptoms of constipation were as follows: soiling 34 (54.0%) which was more common in male than female, large stools 30 (47.6%), decreased bowel movement less than 3 times a week 20 (31.7%), straining during defecation 19 (30.2%) and retentive posturing 19 (30.2%). The mean duration of follow-up was 34.2±14.6 (3.6±60.0) months and 44 (69.8%) patients were recovered (“success”) and 19 (30.2%) were not recovered (“fail”) from constipation. The time for recovery from soiling, straining during defecation and retentive posturing after treatment were 4.3±2.1 (1.0±6.0), 5.0±1.4 (0.8±3.6) and 5.0±3.1 (1.0±3.6) months, respectively. A relapse of constipation occurred in 15 (23.8%) patients, 9 (60%) boys and 6 (40%) girls. The time for relapse after cessation of treatment was 2.9±1.9 (1.0±6.0) months and the only risk factor associated with relapse was duration of initial treatment. Conclusion: Most of the patients recovered within 5 months after treatment but the most of relapse occurred within 3 months after the interruption of treatment. The duration of treatment was important for the recovery and for the prevention of relapse of constipation in children. Thus long term maintenance therapy and follow-up are necessary for chronic functional constipation in children. Key Words: Chronic functional constipation, Outcome, Long term follow-up

P0278

Title:
Postnatal Intestinal Neural Stem Cells have more than one embryonic origin

Jaime Belkind-Gerson 1, Alfonso Carreon-Rodriguez 1
1) Instituto Nacional de Salud Publica de Mexico, Cuernavaca, Mexico

Summary:
Introduction: Intestinal prenatal neurogenesis is due to neural crest cells (NCC). Several different research groups have identified the persistence of neural stem cells (NSC) in the postnatal intestine. Postnatal intestinal NSC are also believed to be of neural crest origin. Reported differences in culture techniques and NSC behavior suggest there may be more than one NSC type. Objective: To explore if there is more than one type of intestinal NSC, we studied the patterns of NSC expression for several cell membrane type-specific proteins by flow cytometry. Methods: Enteric neural stem cells were obtained from murine postnatal intestine using a mechanical and enzymatic dissociation technique with which we have accomplished in vitro neurogenesis (Suarez-Rodriguez and Belkind-Gerson, Stem Cells, Dec 2004). Flow cytometry expression experiments were performed on the NSC using specific antibodies vs. mesenchymal cells, endothelial cells, hematogenous cells and P-75 receptor (neural crest). Results: NSC did not express CD31 or interferon alpha 2 (endothelial cells), CD14 (macrophage), CD45 or CD621 (hematopoietic cells), HLA-ABC/DR (HLA presenting cells). They did express several mesenchymal markers including: CD29, CD105, CD90, CD73, CD13, CD166, CD38 and others. Approximately 70% of cells were positive to both CD90 and CD73. Less than 2% expressed P75. Differentiation assays were successful in creating osteoblastic, adipogenic and chondrocytic cells from the NSC, further demonstrating their mesenchymal origin. Conclusions: This study shows that in vitro, it is possible to obtain neuron-like cells morphologically, which express several neuronal-specific proteins from intestinal postnatal mesenchymal cells. These results suggest that the postnatal intestine, in addition to neural crest-derived stem cells may posses another cellular source for neurogenesis.

P0279

Title:
Prior Travel to a Developing Country is a Risk Factor for Persistent Abdominal Symptoms

Jaime Belkind-Gerson 1, Herbert L. DuPont 2, Parvathy Nair 3, Jose Flores 2, Zhi-Dong Jiang 2, Pablo C. Okhuysen 2
1) Instituto Nacional de Salud Publica de Mexico, Cuernavaca, Mexico 2) The University of Texas Health Science Center, Medical School, Houston, Texas 3) The University of Texas Health Science Center, School of Public Health, Houston, Texas

Summary:
Introduction: Persistent abdominal symptoms (PAS) are frequent in children. Several reports have associated travelers’ diarrhea (TD) with development of PAS, including functional abdominal disease (FAD) and Irritable Bowel Syndrome (IBS). It is not clear, however, if a history of travel to a DC is associated with a higher risk for future development of PAS. Objective: We employed a travelers model to study the development of functional enteric symptoms after exposure to enteropathogens. Methods: We prospectively studied 1,916 healthy North American travelers to Mexico using a Rome III questionnaire evaluating usual bowel habits and Gastrointestinal symptoms on arrival. Results: There were 274 (15.83%) cases of FAD and 61 (3.52%) of IBS. Previous history of travel to a DC was a risk factor for FAD (OR, 1.33; P=0.049), not so for IBS. When stratified by different regions...
visited, we found a significant association between travel to the Caribbean (OR, 2.27; P=0.015) and Central America (OR, 1.45; P=0.059) in the past year and FAD. Subjects with history of severe TD had a greater prevalence of PAS (OR, 2.14; 95%CI, 0.99 - 4.63; P=0.052), not so those with mild and moderate episodes in the past. A history of severe TD in central America posed a significant risk for PAS (OR, 2.86; 95%CI, 1.05 - 7.79; P=0.041). Also younger age and female gender were independent risk factors for PAS. Conclusion: Gastrointestinal symptoms are present in a subset of North American travelers to Mexico and correlate with a prior history of travel to the Caribbean or Central America. This observation suggests that travelers to a DC are at risk of having persistent abdominal symptoms following a bout of infectious diarrhea and may be predisposed to subsequent events that result in post-infectious IBS. We suggest that enteric infection, common in developing regions, be studied in pediatric populations to determine a role in the development of chronic functional enteric disease in children.

P0280

Title:
The safety and efficacy of induction therapy with infliximab in children with severely active Crohn’s disease

Jaroslaw Kierkus 1, Maciej Dadalski 1, Jozef Ryzo 1, Piotr Socha 1, Michal Szczepanski 1, Jerzy Socha 1
1) Departament of Gastroenterology, Hepatology and Immunology, Children’s Memorial Health Institute., Warsaw, Poland

Summary:
Background: Infliximab is a chimeric anti-TNFalpha antibody used in therapy of severely active Crohn’s disease (CD) resistant for conventional therapy. Aim: The assessment of safety and efficacy of induction therapy with infliximab in children with severely active Crohn’s disease. Patients and methods: We have analyzed 18 children with severely active CD who received infliximab 5 mg/kg at weeks 0-2-6. Mean age 15,4 years, mean disease duration 4,4 years. 8 patients had history of surgical treatment, 5 - active perianal fistulas. All patients have therapy with immunomodulators (azathioprine or methotrexate). The clinical and endoscopic assessments were performed before first and 8 weeks after third dose of infliximab. Results: 13 patients (72%) had clinical and 11 (61%) endoscopic improvement. 4 patients had no improvement after 3 infusions. One patient had serious adverse event (leucopenia) after 2 infusion and therapy was stopped. 3 out of 5 patients had perianal fistulas closed. Significant improvement of body weight was found (52; 38; 55 vs. 57; 37,2; 65 kg) [median; lower quartile; upper quartile]. No significant BMI change was found. Conclusions: 1. Infliximab is effective induction therapy in approximately 70% patients with severely active CD and in approximately 60% patients with active fistulas. 2. Infliximab is safe induction therapy of CD in children although continuous clinical and laboratory monitoring of adverse events is obligatory.

P0281

Title:
The safety and efficacy of maintenance therapy with infliximab in children with severely active Crohn’s disease

Jaroslaw Kierkus 1, Maciej Dadalski 1, Jozef Ryzo 1, Piotr Socha 1, Michal Szczepanski 1, Jerzy Socha 1
1) Departament of Gastroenterology, Hepatology and Immunology, Children’s Memorial Health Institute., Warsaw, Poland

Summary:
Background: Infliximab is a chimeric anti-TNFalpha antibody used in therapy of severely active Crohn’s disease (CD) resistant for conventional therapy. Aim: The assessment of safety and efficacy of maintenance therapy with infliximab in children with severely active Crohn’s disease after induction therapy with three doses of infliximab. Patients and methods: 11 children after successful induction therapy with infliximab 5 mg/kg at weeks 0-2-6 were analyzed. Mean age 16,1 years, mean disease duration 4,1 lat. Therapy regimen consist of 5 infliximab infusions 5 mg/kg every 8 weeks. 5 patients had history of surgical treatment, 1 patient had active perianal fistula and 3 patients had fistulas closed after induction therapy. All patients have therapy with immunomodulator (azathioprine or methotrexate) and steroids discontinued. The clinical and endoscopic assessments were performed before first (fourth consecutive) and 8 weeks after fifth (eighth consecutive) dose of infliximab in maintenance therapy. Results: 5 patients (45%) had persistent clinical and endoscopic improvement. 5 patients (45%) had endoscopic exacerbation with no clinical CD flare. 1 patient (10%) had clinical and endoscopic CD exacerbation after third dose and infliximab therapy was discontinued. In 2 out of 3 patients perianal fistulas becomes active. No serious adverse event was observed. No significant BMI and body weight change was observed. Conclusions: 1. Infliximab in combination with immunomodulator is efficient and safe in maintenance therapy with infliximab in children with severely active Crohn’s disease after induction therapy with three doses of infliximab.

P0282

Title:
Paediatric Inflammatory Bowel Disease in New Zealand
Summary:
Aim: To determine the incidence, presentation and initial management of paediatric inflammatory bowel disease in New Zealand. Methods: A prospective study in collaboration with the New Zealand Paediatric Surveillance Unit was undertaken between 2002-03. Paediatricians and healthcare professionals working with children were surveyed monthly for cases of paediatric inflammatory bowel disease. Results: There were 52 cases (30 males); 34 (66%) Crohn's disease, nine (17%) ulcerative colitis and nine (17%) inflammatory bowel disease type unclassified. The estimated incidence of paediatric inflammatory bowel disease, Crohn's disease and ulcerative colitis were 2.9, 1.9 and 0.5 per 100,000 per year respectively. Mean age at diagnosis was 11 years with a delay of 8.4 months from clinical presentation to diagnosis. 85% were European, while no Maori or Pacific Islanders had Crohn's disease or ulcerative colitis. The most common symptoms at presentation were abdominal pain (63%), rectal bleeding (57%), diarrhoea (55%) and weight loss (43%). 39% of Crohn's disease patients had perianal disease at presentation. Only 18% of the Crohn's disease patients presented with the classic triad of symptoms-abdominal pain, weight loss and diarrhoea. Haematological laboratory abnormalities were more common in Crohn's disease. 5-aminosalicylic acid agents were the most common initial therapy followed by systemic steroids. 25% of the paediatric inflammatory bowel disease cohort received immunomodulators. Conclusions: The incidence of paediatric inflammatory bowel disease in New Zealand is comparable but at the lower end relative to North America and United Kingdom. There is more Crohn's disease than ulcerative colitis and only a minority of Crohn's disease patients presented with the classic triad of abdominal pain, weight loss and diarrhoea. 5-aminosalicylic acid preparations and steroids as first line treatment of Crohn's disease were much more common than nutritional therapy. It is rare for New Zealand Polynesian children to develop paediatric inflammatory bowel disease.

P0283
Title: Curcumin Reduces IL-1 Beta and Enhances IL-10 in the Gut
Jenny Epstein 1, Thomas T MacDonald 1, Ian R Sanderson 1
1) Institute of Cell and Molecular Science, Barts and the London, Queen Mary University London, London, UK

Summary:
Objective: In inflammatory bowel disease (IBD), both chronic pro-inflammatory pathways and failure of anti-inflammatory (healing) mechanisms sustain disease. Pro-inflammatory signalling pathways, including NF-kappa B and p38 mitogen-activated protein kinase (MAPK) are activated in IBD. The two major anti-inflammatory gut cytokines are transforming growth factor (TGF)-beta and interleukin (IL)-10. In IBD, excessive acetylation of Smad 7 blocks TGF-beta signalling and its immunosuppressive effects. The IL-10 gene promoter also contains an acetyl-sensitive binding site for the transcription factor Sp3. Curcumin, a component of the spice turmeric and a known inhibitor of acetylation, shows clinical benefit in IBD in small studies. Our objective was to test the direct anti-inflammatory effects of curcumin in the gut. Methods: Intestinal biopsies and lamina propria mononuclear cells (LPMC) were isolated from patients with active IBD and cultured ex vivo overnight with graded doses of curcumin. Pro-inflammatory cytokines and the anti-inflammatory cytokine IL-10 were measured in supernatants by enzyme-linked immunosorbent assay. Smad 7 levels (known to be controlled by its acetylation status) and phosphorylated (activated) p38 MAPK were measured in cell lysates by Western blot. Results: Curcumin consistently and significantly increased IL-10 and decreased IL-1 beta expression in cells and tissues from inflamed gut. It also significantly reduced p38 MAPK activation. Curcumin had no significant effect on Smad 7 or IFN-gamma levels. Conclusion: Curcumin, a food ingredient with no known oral toxicity to man, holds promise as a potential new IBD therapy.

<table>
<thead>
<tr>
<th>Vehicle Control</th>
<th>Median; inter-quartile range</th>
<th>Curcumin: Median; inter-quartile range</th>
<th>Curcumin: Percentage change from control p Value: Wilcoxon signed rank test</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL-10 (n=12)</td>
<td>130pg/ml; 41-559 431 pg/ml</td>
<td>117-804 +132% 0.0029</td>
<td></td>
</tr>
<tr>
<td>IL-1 beta (n=13)</td>
<td>464pg/ml; 210-597 326pg/ml</td>
<td>101-533 -30% 0.0017</td>
<td></td>
</tr>
<tr>
<td>IFN-gamma (n=15)</td>
<td>541pg/ml; 376-1935 682pg/ml</td>
<td>226-1728 No significant change Non-significant</td>
<td></td>
</tr>
<tr>
<td>p38 MAPK (n=8)</td>
<td>(arbitrary units) (arbitrary units) -42% 0.0234</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smad 7 (n=8)</td>
<td>(arbitrary units) (arbitrary units) No significant change Non-significant</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P0285
Title: Clinical and colonoscopic manifestations of pediatric inflammatory bowel disease
Objective: To analysis clinical manifestations, endoscopic and histological features when establishing a diagnosis of pediatric inflammatory bowel disease. Methods: The authors reviewed the data of clinical manifestations, laboratory values, endoscopic findings and biopsy on pediatric inflammatory bowel disease (IBD) from the medical records. Results: 34 IBD patients were enrolled (ulcerative colitis/UC/: 24; crohn’s disease/CD/:10). The most common presenting symptom was abdominal pain in CD(80.0%); and diarrhea (23/24: 95.8%) in UC. ESR and C reactive protein values were significantly higher in patients with CD compared with patients with UC. In the 10 CD children, 7 were colon involved. However, involvement limited to the colon alone was seen in only 1 case. Endoscopically, discontinuous lesions, diverse ulcers, proliferative/regenerative patterns and narrowed bowel lumen were observed. Histologically, lymphocytes aggregation in the lamina propria and submucosa were observed. Non-caseating granulomas were found in 22.2% cases. In UC, colonoscopic appearance showed diffusely distributed multiple erosions and ulcers. 7(29.2%) UC children had pseudopolyps. No mucosa bridge was found. Mucosa biopsies showed chronic inflammatory cells, neutrophils and eosinophils diffusely infiltrated in the lamina propria. Crypt abscess was found in 4 cases. Conclusions The clinical manifestations in pediatric inflammatory bowel disease are nonspecific. Colonoscopic examination and biopsy is valuable in establishing the diagnosis of pediatric ulcerative colitis. It is important for colon involved CD children to have a colonoscopic examination. But the mucosa biopsies were short of specificity. Multi-place and deep biopsy are needed to improve the positive rate. Key words: inflammatory bowel disease; clinical manifestation; colonoscopy; biopsy

Title: ANALYSIS OF ENTEROPATHY IN INFANTILE FOOD PROTEIN-INDUCED ENTEROCOLITIS AND THE ROLE OF INCREASED APOPTOSIS AND DISRUPTED BARRIER FUNCTION
Jin-Bok Hwang 1, Jeong-Yoon Song 1, Yu Na Kang* 1, Sang Pyo Kim* 1, Seong-Il Suh* 1
1) Department of Pediatrics and *Institute for Medical Science, Keimyung University School of Medicine, Daegu, Korea

Objective: The aim of this study was to analyze enterophathy in infantile food protein-induced enterocolitis syndrome (FPIES) and to determine the role of increased apoptosis and disrupted tight junction in its pathogenesis. Methods: Fifteen infants diagnosed with infantile FPIES and 5 controls were included. Quantitative morphometric analyses in endoscopic biopsy specimens of duodenal mucosa were performed. Immunohistochemical stains of terminal deoxynucleotidyl transferase-mediated digoxigenin-deoxyuridine triphosphate nick-end labeling (TUNEL) for overall apoptosis; CD3 for intraepithelial lymphocyte apoptosis; M30 for epithelial cell apoptosis; TNF-related apoptosis-inducing ligand (TRAIL) receptor-1 (DR4), TRAIL receptor-2 (DR5), Fas, and Fasl for apoptotic mechanisms; claudin-1, claudin-4, and occludin for tight junction disruption were also performed. Apoptotic cells of TUNEL and M30 were counted as cells/HPF. Expression of other immunohistochemical stainings was graded as 0~3 score according to the extent and intensity. Results: Villous atrophy was observed in all infantile FPIES patients (50~210 ¥ìm vs 305~380 ¥ìm in controls, P=0.0001). TUNEL (P=0.043), CD3 (P=0.038), and M30 (P=0.042) were significantly higher expressed in FPIES patients than the controls. DR4 (P=0.003) was significantly higher expressed in FPIES patients than the controls. Moreover, claudin-1 (P=0.01), claudin-4 (P=0.001), and occludin (P=0.003) were significantly lower expressed than the controls. Conclusions: Infantile FPIES is an enteropathy disorder. Severe villous atrophy is induced by both of enterocyte apoptosis and intraepithelial lymphocyte apoptosis mediated by DR4, and is also induced by disrupted barrier function.

Title: PROSPECTIVE FOLLOW UP-ORAL FOOD CHALLENGE AND COW’S MILK AND SOY TOLERANCE RATES IN INFANTILE FOOD PROTEIN-INDUCED ENTEROCOLITIS SYNDROME
Jin-Bok Hwang 1, Jeong-Yoon Song 1, Geun Soo Park 1, Won Joung Choi 1, Ae Suk Kim 2
1) Department of Pediatrics, Keimyung University School of Medicine, Daegu, Korea 2) Department of Pediatrics, Dongguk University College of Medicine, Gyeongju, Korea

Objective: A prospective study was performed to determine tolerance rates to cow’s milk and soy and to suggest guidelines for a follow up-oral food challenge (FU-OFC) in infantile food protein-induced enterocolitis syndrome (FPIES). Methods: Data of 23 infantile FPIES patients who underwent two or more FU-OFCs and were followed up for over 2 years of age was analyzed. In the 1st FU-OFC, an open standard challenge was performed at 6 months of age, and patients were randomly selected into two groups, i.e., cow’s milk (n=11) and soy (n=12) (0.03~0.05 g protein/kg).
The 2nd and 3rd FU-OFCs were performed every 2 months using cow’s milk or soy in a crossed and switched-over manner. Results: Tolerance rates to cow’s milk and soy were 27.3% and 75.0% at 6 months of age (P=0.022); 41.7% and 90.9% at 8 months (P=0.013); and 63.6% and 91.7% (P=0.104) at 10 months, respectively. Patients outgrew cow’s milk and soy intolerance at age 20 and 14 months, respectively. Conclusions: In infantile FPIES, 1st FU-OFC should be performed with soy at 6-8 months of age and cow’s milk FU-OFC should be conducted at more than 12 months of age. Infants with FPIES were observed to outgrow food sensitivities during the first 2 years of life.

P0288

Title: Evaluation of gastroesophageal reflux with the use of Multiple Intraluminal Impedance (MII) in neurologically impaired children qualified to enteral feeding

Ewa Toporowska-Kowalska 1, Beata Gębora-Kowalska 1, Krystyna Węsowska-Królikowska 1
1) Departament of Pediatric Allergy, Gastroenterology and Nutrition, Medical University of Lodz, Poland, Lodz, Poland

Summary:
Gastro/jejunostomy tube feeding provides nutritional support for children with chronic diseases of central nervous system. At the same time this patients are at-risk group for motor dysfunction of gastrointestinal tract, with gastroesophageal reflux (GER) incidence estimated for up to 75%. The qualification of the neurologically impaired subjects to gastro/jejunostomy insertion in the presence of GER and the outcome of enteral feeding remain controversial. The aim of the study is to asses the prevalence of gastroesophageal reflux with the use of Multiple Intraluminal Impedance (MII) and its influence on enteral feeding tolerance in neurologically impaired children qualified to gastro/jejunostomy placement. Materials and methods: The study comprised 12 children with chronic diseases of the central nervous system (median age 113 months; range 57-207 months). All children underwent 24-hour multiple intraluminal impedance (MII-pH; SLEUTH Sandhill Scientific). Minimal monitoring time was 22 hours. All impedance recordings were visually inspected for the typical MII pattern of GER and symptom index (SI) comprising choking, coughing, emesis and regurgitation was calculated. Subsequently all patients underwent 7-10 days period of nosogastric tube feeding, followed by percutaneous endoscopic gastrostomy (PEG; n=9) or gastrojejunostomy (PEG-PEJ; n=1) placement (in two subjects due to lack of parents consent to procedure or technical complications PEG was not inserted). Results: Based on MII-pH results pathological GER was detected in 4 subjects: acid reflux in 2 and nonacid reflux in 2 cases. The positive SI was observed only in 1 child presenting with nonacid reflux. Intragastric tube feeding was well tolerated in all subjects but one with positive SI (PEG-PEJ was utilized in this case). Enteral feeding improved clinical status (weight gain, subsidence of regurgitation) of all patients with PEG regardless of MII-pH results. Conclusion: The initial results of MII-pH study suggest that the presence of GER doesn't exclude good clinical response to enteral feeding via gastrostomy in neurologically impaired children. The choice of route of enteral feeding supply should rely on clinical tolerance and MII-pH results with symptom index.

P0289

Title: The diagnostic usefulness of magnetic resonance cholangiopancreatography (MRCP) in the imaging of biliary and pancreatic ducts in children – authors experience

Joanna Kudzin 1, Ewa Biernacka 1, Ewa Toporowska-Kowalska 1, Krystyna Węsowska-Królikowska 1
1) Departament of Pediatric Allergy, Gastroenterology and Nutrition, Lodz, Poland

Summary:
Background: Magnetic resonance cholangiopancreatography (MRCP) is a new, non-invasive method of biliary and pancreatic ducts imaging. The examination doesn’t require the use of contrast agent and exposure to ionizing radiation, what is especially important in children. Aim: The aim of the study was the evaluation of MRCP usefulness in the diagnostics of in pediatric patients suspected of biliary and pancreatic ducts abnormalities. Methods: To MRCP were qualified children with pancreatitis (n=24) and/or patients with cholestatic exponents present in laboratory tests (n=7). Ultrasound examination with evaluation of biliary and pancreatic ducts preceded MRCP in all patients. Results: Abnormal MRCP pictures were found in 18 patients (11/18 had changes in ultrasound examination and 7/18 presented with normal ultrasound image). 8 children (including one with ultrasound abnormalities) had regular MRCP picture. Patients with biliary or pancreatic ducts narrowing/cholelithiasis in MRCP were qualified to endoscopic retrograde cholangiopancreatography (ERCP). Accordance of magnetic resonance cholangiopancreatography and ultrasound examination was stated in 18 of 24 examined patients, which showed lower usefulness of ultrasound imaging in comparison to MRCP in evaluation of biliary and pancreatic ducts diseases in children (sensitivity 61%; specificity 87%, PPV 91%, NPV 87%). Conclusions: 1. MRCP is sensitive and safe method of imaging of biliary/pancreatic ducts in pediatric patients. 2. Qualification to ERCP should be preceded by MRCP, especially in the absence of ultrasound abnormalities.

P0291
Title: Infliximab treatment in paediatric IBD: survey of treatment decisions

Johanna C. Escher 1, Working Group on Pediatric IBD 2
1) ErasmusMC-Sophia Children’s Hospital, Rotterdam, Netherlands 2) ESPGHAN, Porto, Portugal

Summary:
Objective: In February 2007, a report on 9 cases of hepatosplenic T-cell lymphoma (HSTCL) in young IBD patients treated with infliximab (IFX) and concomitant immunomodulatory treatment (6-MP or AZA) was published by Mackey et al. (JPGN 2007; 44(2):265-7). Although unknown which treatment is causally related to this fatal malignancy, the report has certainly increased awareness of the risks of long-term complications of immunomodulatory and biological treatment. We evaluated treatment decisions in Europe after publication of the report. Methods: In March 2008, a survey was circulated among members of the IBD working group of ESPGHAN. Results: Pediatric gastroenterologists from the United Kingdom, Germany, Belgium, the Netherlands, Sweden, Denmark, Hungary, Czech Republic, Croatia, Italy, and Portugal responded to the survey. Assessing the situation before February 2007, a total of 145 pediatric IBD patients were reported to receive IFX. Of these 145 patients, 125 (87%) were co-treated with 6-MP/AZA, 10% were co-treated with MTX, and 3% had IFX mono-therapy (Fig A). After the report on HSTCL was published, treatment strategy changed dramatically: AZA was stopped (after a minimum of 6 months combined treatment) in 59/125 (47%) of the patients, either to continue IFX mono-therapy in 47/125 (37%) or to switch to co-treatment with MTX in 12/125 (10%). IFX was stopped in 17/125 (14%), and in 49 patients (39%), treatment remained unchanged. As such, after Feb 2007, 108 patients were receiving IFX, combined with 6-MP/AZA in 27%, with MTX in 25% and as mono-therapy in 48% (Fig B). When asked about their current treatment strategy, 63% of pediatric gastroenterologists report to stop AZA in patients with IFX and AZA, either after remission or after 6 months of co-treatment. IFX is stopped by 14%, and IFX is combined with MTX by 18%. Conclusions: It seems that the report of 9 cases of HSTCL has influenced treatment behaviour substantially. Combined treatment of IFX and AZA was common before the report, whereas after its publication, IFX mono-therapy has become the preferred option. At present time there is no data to provide guidance as to what is the safest long-term treatment strategy.

P0292

Title: Augmentation of Transforming Growth Factor-α1 Signaling by the Zinc Finger Protein, ZAS3

Bo Jiang 1, Jianguo Du 1, Carl Allen 3, Adam Yakovich 1, Lai-Chu Wu 2, John A Barnard 1
1) Nationwide Children’s Hospital, Columbus, United States 2) The Ohio State University, Columbus, United States 3) Texas Children’s Hospital, Houston, United States

Summary:
In mammals, the ZAS family of transcription factors includes three large zinc finger proteins designated ZAS1, ZAS2, and ZAS3, each with > 2200 amino acid residues. ZAS proteins activate or repress transcription depending on the cellular context. Evidence is now emerging that members of the ZAS protein family interact with Smad proteins to modulate TGFα signaling in mammalian model systems. In the current study, we explored the interaction between ZAS3 and TGFα1 signaling in epithelial systems using HEK293 cells and the intestinal epithelial cell line, RIE-1. We detected endogenous expression of ZAS3 in each cell line as well as mouse small intestine and colon using Western blotting. Transfection of ZAS3 enhanced activation by TGFα1 of an artificial (SBEX4) luciferase reporter in both 293 (3-fold) and RIE-1 cells (2.7-fold) in a dose dependent manner. Transfection with deletion mutants indicated that the N-terminus of ZAS3 was required for enhancement of TGFα1-mediated transcription. Endogenous ZAS3 expression in both whole cell and nuclear lysates was dramatically increased by treatment with TGFα1, indicating ZAS3 might interact with the Smad transcriptional complex. Immunoprecipitation assays were performed in 293 cells transfected with control and ZAS3 plasmids. An association between phosphorylated Smad2 and ZAS3 was detected in nuclear lysates one hour after treatment with TGFα1. Association with Smad4 was not observed. Additionally, exogenous ZAS3 decreased the association between the Smad complex and the TGFα transcriptional repressors Ski and SnoN, indicating a possible mechanism for the enhancement of transcription by exogenous ZAS3. Finally, transfection of ZAS3 enhanced the induction of α-smooth muscle actin by TGFα1 3.6 fold, indicating functional relevance in TGFα signaling. In conclusion, we have identified an interaction between ZAS3 and Smad proteins that enhances TGFα signaling. Since TGFα signaling is primarily known as an extensively negatively regulated pathway, the enhancement of signaling by ZAS3 has novel implications for understanding TGFα biology.

P0293

Title: Can Gallbladder Ejection Fraction on HIDA Scan Predict Abdominal Pain Resolution Upon Cholecystectomy?

John T Stutts 1, Angela M Jeffries 1, Jignesh P Shaw 1, Sheldon Bond 1, John J. Buchino 1, Craig Ziegler 1
1) University of Louisville School of Medicine, Louisville, USA
Objective: Hepatobiliary iminodiacetic acid scan with cholecystokinin stimulation (HIDA) is often used to assess gallbladder function in children with recurrent abdominal pain (RAP). Previous studies have shown contradictory findings regarding the relationship between gallbladder ejection fraction (GBEF) and histologic abnormality upon cholecystectomy. Our objective was to evaluate the relationship of a diminished GBEF on HIDA scan with resolution of abdominal pain symptoms post cholecystectomy in a large population of pediatric patients with RAP. Methods: The medical records of 289 children who underwent cholecystectomy from 1998-2005 were reviewed. 104 of these children had undergone HIDA scan prior to cholecystectomy. Data regarding GBEF and symptoms prior to cholecystectomy was collected. An abnormal value for the HIDA scan was defined as <35% ejection fraction. Bivariate logistic regression was calculated to determine whether GBEF predicted resolution of symptoms post cholecystectomy. Multiple logistic regression was calculated to predict outcome after controlling for histology, nausea, vomiting, pain symptoms, GBEF and interaction effects among the predictor variables. Results: Patient ages ranged from 6 to 18 years (median, 15.5 years). Prior to cholecystectomy, all patients met Apley's criteria for RAP, 67% had nausea, 57% had vomiting, and 41% had right upper quadrant (RUQ) pain. Post cholecystectomy, 93 patients (99%) met the criteria for RAP. Fifty-five (57%) had histology consistent with cholecystitis. There was no statistically significant difference between those with or without abnormal gallbladder histology in their eventual pain resolution (p=0.76). GBEF did not predict pain resolution post cholecystectomy (p=0.55). Neither nausea (p=0.75), vomiting (p=0.50), duration of pain (p=0.09), nor RUQ pain (p=0.48) predicted resolution of symptoms upon gallbladder removal. Logistic regression showed no interaction effects between GBEF and histology, nausea, vomiting, pain duration, or RUQ pain. Conclusions: Our findings suggest that abnormal GBEF on HIDA scan, nausea, vomiting, pain duration, or RUQ pain can predict resolution of abdominal pain post cholecystectomy. We further conclude that symptom resolution cannot be predicted by gallbladder histology. These findings underscore the importance of strong clinical suspicion rather than HIDA scan alone in the decision to perform cholecystectomy in children with recurrent abdominal pain.

P0294

Title: Celiac disease: improving diagnostic accuracy
Ana F Teixeira 1, Ana L Cunha 2, Carla F Costa 1, Eunice Trindade 1, Fátima Carneiro 2, Jorge A Dias 1
1) Ped Gastroenterology, Hospital São João, Porto, PORTUGAL 2) Dept of Pathology, Hospital S. João, Porto, PORTUGAL

Summary: Establishing a firm diagnosis of celiac disease may be difficult due to mismatch of clinical, serological and histological data. Minor mucosal lesions may be overlooked on routine histological analysis. Objective: To audit files of patients who underwent biopsy of the small bowel but celiac disease was not clearly excluded. Methods: Retrospective chart review of patients submitted to small bowel biopsy over 5 years (2003-2007). Biopsy specimens previously classified as "normal" or "with mild inflammatory changes" were reviewed and blindly re-classified using modified Marsh classification (MMC). Clinical data was then reviewed and correlated with pathology grading. Results: Forty-nine patients (24M/25F; median age at biopsy 3 yrs; range 0.8-14.4) were studied. Median follow-up period was 27.8 months (2.2-55.2). Main reasons for biopsy were failure to thrive (45%); intestinal symptoms (constipation, diarrhea, abdominal pain or distension) (41%); persistent anaemia (6%); elevated tissue transglutaminase (tTG) antibodies on screening Down’s syndrome, type 1 diabetes mellitus or family history of celiac disease (8%). Five patients had selective IgA deficiency. Nineteen patients had elevated tTG antibodies. Biopsy specimens were graded as 0 (normal; n=38); 1 (mild; n=4); and 3 (severe; n=7). According to MMC celiac disease was excluded in 29 patients. Four patients previously diagnosed on clinical criteria were re-classified as grade 3; 5 patients were newly diagnosed (3 with grade 3; 2 with grade 1). These mild changes occurred in patients with gluten-free diet prior to biopsy (n=2) or with persistent clinical and serological abnormality despite previous normal biopsy (n=1) and were highlighted by the use of more accurate features of MMC. Two patients now classified as celiacs in this study are at present lost for follow-up. Conclusion: Celiac disease diagnosis, despite good clinical, serological and histological data, may not be clear in all instances. In this study, after retrospective assessment of biopsy specimens, 5 (10%) patients were reclassified as celiacs. The use of an objective grading like the modified Marsh classification proved to be a useful tool enabling pathologists with clear cut histological descriptions. The importance of interaction between clinicians and pathologists must always be emphasized as well as sustained patient surveillance for correct diagnosis.

P0295

Title: ESOPHAGEAL IMPEDANCE VERSUS PH IN GER: USE IN PEDIATRICS
Catarina Magalhães 1, Filipa Miranda 1, Alexandra Sequeira 1, Catarina Sousa 1, Susana Pissarra 1, Jorge Amil Dias 1
1) Ped Gastroenterology, Hospital São João, Porto, PORTUGAL

Summary:
Gastroesophageal reflux (GER) is a common condition requiring accurate diagnostic tools to identify pathological mechanisms and severity. Multi-channel Intraluminal esophageal Impedance associated with pH (MII-pH) is a recent technique that allows better characterization of reflux episodes identifying direction of bolus, proximal involvement, nature of the content and its pH. Objective: To analyse MII-pH data, in order to evaluate both acid and nonacid reflux. Methods: Retrospective descriptive study based on review of clinical records and MII-pH tracings of children referred for investigation of GER due to respiratory or digestive symptoms, or ALTE episodes. Data was acquired on a portable device over a 24h period in ambulatory setting. Analysis of pH data used Vandenplas criteria for children under 12 months and Boix-Ochoa composite score above that age. Impedance data was visually inspected and reflux episodes were diagnosed if retrograde bolus movements involved at least 3 channels. Results: 16 MII-pH were analysed (12 M, 4 F; median age 25.5 months; range 1-94). Six patients had abnormal acid reflux in pH readings. The mean number of reflux events (impedance) was 68.6 (range: 5 - 116), of which 40% were nonacid. In twelve patients the number of acid reflux episodes detected by impedance was lower than the number of episodes found in pH monitoring. The mean impedance reflux-acid related exposure was of 63% (range 0-93%), No symptomatic events were reported by parents during the studies. Conclusions: Reflux identified by impedance is significantly lower than acid exposure detected by pH monitoring, which may be explained by esophageal distal acidification in the absence of retrograde bolus movement,. The disproportionate number of pH drops without retrograde bolus movement may be relevant for the diagnosis of risk for esophagitis but appears to be a disadvantage of classic pH-metry in patients with recurrent respiratory symptoms, in which the proximal extension of the reflexate may be the underlying mechanism. The large number of nonacid reflux episodes would not have been detected in pH-metry alone. Detection of nonacid reflux and the proximal involvement of esophagus are advantages of impedance and the combined recording of both parameters may address both reflux and acid exposure. On the other hand, data analysis is time-consuming and has interobserver variability, for there are no validated interpretation criteria in Pediatrics.

P0296

Title:
INFLIXIMAB IN CROHN’S DISEASE – EFFECT ON GROWTH

M Ceu Espinheira 1, Catarina Ferraz 1, Susana Pissarra 1, Eunice Trindade 1, J Amil Dias 1
1) Ped Gastroenterology, Hospital São João, Porto, PORTUGAL

Summary:
Background: Normal growth is a marker of therapeutic success in pediatric Crohn’s disease as active inflammation affects linear growth in children and adolescents. Steroids are often used to control disease but these may also interfere with growth if required frequently. The use of anti-TNFá antibody (infliximab) may control disease and allow normal growth. Methods: A retrospective study of pediatric patients treated with infliximab to assess if clinical response was associated with improved linear growth. Results: 13 children and adolescents (10 M, 3 F; median age 11.6 y; range 7,8-17,9 at start of infliximab). Eleven patients started infliximab because of steroid-dependency, and the other two due to steroid-resistance. Four patients were in Tanner stage IV when infliximab was started. All patients had clinical response to infliximab as evaluated by Pediatric Crohn’s Disease Activity score. During follow-up 11 patients (84,6%) experienced a significant improvement in height (mean Z-score increased 0.342, p<0,001). The other two patients without significant changes in linear growth were in Tanner stage IV at the beginning of infliximab therapy. Conclusions: Infliximab therapy is effective to control inflammation and allows linear growth in active Crohn’s disease resistant to standard treatment. Growth promotion however is limited to patients in early puberty. It seems therefore that ultimate height in children with Crohn’s disease may be less compromised with infliximab therapy than with conventional therapies.

P0297

Title:
RACECADOTRIL IN ACUTE DIARRHEA – MULTICENTRE OBSERVATIONAL STUDY

Jorge Amil Dias 1
1) Study Group, Society of Ped Gastro Hepatol and Nutr, PORTUGAL

Summary:
Oral rehydration remains the cornerstone of treatment in acute diarrhea, resulting in obvious benefits in morbidity and mortality. However it does not reduce duration of diarrhea or stool output. Therefore search for additional therapy that may reduce disease duration is of great interest. OBJECTIVE: A multicentre observational study enrolling eight pediatric units was conducted to assess whether the addition of racecadotril to standard oral rehydration would reduce duration of acute diarrhea. Secondary goal was to evaluate which treatment regimen would reduce the number of medical visits during the disease. METHOD: 146 children (3m-6y) with acute diarrhea for less than 10 days without significant dehydration or other co-morbidities were treated in ambulatory setting; they were allocated to one of two groups: Group I (n=79) received oral rehydration (solution composition according to ESPGHAN recommendations) plus racecadotril (1.5mg/kg/d in 3 doses); Group II (n=67) received oral rehydration only. All co-morbidities were treated in ambulatory seeting: they were allocated to one of two groups: Group I (n=79) received oral rehydration (solution composition according to ESPGHAN recommendations) plus racecadotril (1.5mg/kg/d in 3 doses); Group II (n=67) received oral rehydration only. All co-morbidities were treated in ambulatory setting. Analysis of pH data used Vandenplas criteria for children under 12 months and Boix-Ochoa composite score above that age. Impedance data was visually inspected and reflux episodes were diagnosed if retrograde bolus movements involved at least 3 channels. Results: 16 MII-pH were analysed (12 M, 4 F; median age 25.5 months; range 1-94). Six patients had abnormal acid reflux in pH readings. The mean number of reflux events (impedance) was 68.6 (range: 5 - 116), of which 40% were nonacid. In twelve patients the number of acid reflux episodes detected by impedance was lower than the number of episodes found in pH monitoring. The mean impedance reflux-acid related exposure was of 63% (range 0-93%), No symptomatic events were reported by parents during the studies. Conclusions: Reflux identified by impedance is significantly lower than acid exposure detected by pH monitoring, which may be explained by esophageal distal acidification in the absence of retrograde bolus movement,. The disproportionate number of pH drops without retrograde bolus movement may be relevant for the diagnosis of risk for esophagitis but appears to be a disadvantage of classic pH-metry in patients with recurrent respiratory symptoms, in which the proximal extension of the reflexate may be the underlying mechanism. The large number of nonacid reflux episodes would not have been detected in pH-metry alone. Detection of nonacid reflux and the proximal involvement of esophagus are advantages of impedance and the combined recording of both parameters may address both reflux and acid exposure. On the other hand, data analysis is time-consuming and has interobserver variability, for there are no validated interpretation criteria in Pediatrics.

P0296

Title:
INFLIXIMAB IN CROHN’S DISEASE – EFFECT ON GROWTH

M Ceu Espinheira 1, Catarina Ferraz 1, Susana Pissarra 1, Eunice Trindade 1, J Amil Dias 1
1) Ped Gastroenterology, Hospital São João, Porto, PORTUGAL

Summary:
Background: Normal growth is a marker of therapeutic success in pediatric Crohn’s disease as active inflammation affects linear growth in children and adolescents. Steroids are often used to control disease but these may also interfere with growth if required frequently. The use of anti-TNFá antibody (infliximab) may control disease and allow normal growth. Methods: A retrospective study of pediatric patients treated with infliximab to assess if clinical response was associated with improved linear growth. Results: 13 children and adolescents (10 M, 3 F; median age 11.6 y; range 7,8-17,9 at start of infliximab). Eleven patients started infliximab because of steroid-dependency, and the other two due to steroid-resistance. Four patients were in Tanner stage IV when infliximab was started. All patients had clinical response to infliximab as evaluated by Pediatric Crohn’s Disease Activity score. During follow-up 11 patients (84,6%) experienced a significant improvement in height (mean Z-score increased 0.342, p<0,001). The other two patients without significant changes in linear growth were in Tanner stage IV at the beginning of infliximab therapy. Conclusions: Infliximab therapy is effective to control inflammation and allows linear growth in active Crohn’s disease resistant to standard treatment. Growth promotion however is limited to patients in early puberty. It seems therefore that ultimate height in children with Crohn’s disease may be less compromised with infliximab therapy than with conventional therapies.

P0297

Title:
RACECADOTRIL IN ACUTE DIARRHEA – MULTICENTRE OBSERVATIONAL STUDY

Jorge Amil Dias 1
1) Study Group, Society of Ped Gastro Hepatol and Nutr, PORTUGAL

Summary:
Oral rehydration remains the cornerstone of treatment in acute diarrhea, resulting in obvious benefits in morbidity and mortality. However it does not reduce duration of diarrhea or stool output. Therefore search for additional therapy that may reduce disease duration is of great interest. OBJECTIVE: A multicentre observational study enrolling eight pediatric units was conducted to assess whether the addition of racecadotril to standard oral rehydration would reduce duration of acute diarrhea. Secondary goal was to evaluate which treatment regimen would reduce the number of medical visits during the disease. METHOD: 146 children (3m-6y) with acute diarrhea for less than 10 days without significant dehydration or other co-morbidities were treated in ambulatory setting; they were allocated to one of two groups: Group I (n=79) received oral rehydration (solution composition according to ESPGHAN recommendations) plus racecadotril (1.5mg/kg/d in 3 doses); Group II (n=67) received oral rehydration only. All co-morbidities were treated in ambulatory setting. Analysis of pH data used Vandenplas criteria for children under 12 months and Boix-Ochoa composite score above that age. Impedance data was visually inspected and reflux episodes were diagnosed if retrograde bolus movements involved at least 3 channels. Results: 16 MII-pH were analysed (12 M, 4 F; median age 25.5 months; range 1-94). Six patients had abnormal acid reflux in pH readings. The mean number of reflux events (impedance) was 68.6 (range: 5 - 116), of which 40% were nonacid. In twelve patients the number of acid reflux episodes detected by impedance was lower than the number of episodes found in pH monitoring. The mean impedance reflux-acid related exposure was of 63% (range 0-93%), No symptomatic events were reported by parents during the studies. Conclusions: Reflux identified by impedance is significantly lower than acid exposure detected by pH monitoring, which may be explained by esophageal distal acidification in the absence of retrograde bolus movement,. The disproportionate number of pH drops without retrograde bolus movement may be relevant for the diagnosis of risk for esophagitis but appears to be a disadvantage of classic pH-metry in patients with recurrent respiratory symptoms, in which the proximal extension of the reflexate may be the underlying mechanism. The large number of nonacid reflux episodes would not have been detected in pH-metry alone. Detection of nonacid reflux and the proximal involvement of esophagus are advantages of impedance and the combined recording of both parameters may address both reflux and acid exposure. On the other hand, data analysis is time-consuming and has interobserver variability, for there are no validated interpretation criteria in Pediatrics.
Objective: To identify factors affecting the effectiveness of racecadotril in Venezuela. Methods: A total of 3873 children > or = 12 years old with watery diarrhea, coming from a real-world clinical practice setting, was treated with racecadotril, a blocking enkephaline breakdown plus oral rehydration by 97 pediatricians in a naturalistic, prospective, multicenter, open-label study. Patients had acute watery diarrhea and had passed > or = 3 diarrheic stools in 24 h, they were evaluated daily until had passed two consecutive formed stools or without stool for 12 h. The post-treatment watery stool time (from the first racecadotril dose until watery stools were stopped) and the total post-treatment watery stools were the outcomes in this study. Age, weight, gender, nursing type, nursing stopping during diarrhea, diarrhea severity, co-medication, pre-treatment time and residence site were factors evaluated. Racecadotril effectiveness and tolerability overall assessment was searched by physicians and patients. Outcomes were evaluated by factors using one-way ANOVA and post-hoc analysis was done. Continuous variables was evaluated by Pearsons correlation; a multiple regression analysis was carried out to identify determinant factors and finally, physician-patient agree about effectiveness and tolerability overall assessment was evaluated by kappa value. Results: Post-treatment watery stool time and number were 18.5 +/- 12.45 h and 3.62 +/- 1.95, respectively. Age, nursing stop, diarrhea severity, pre-treatment time and co-medication were the main factors associated with racecadotril effectiveness but just nursing stop, younger age and a long pre-treatment time had a independent negative effect on effectiveness when measured by number of stools but have no effect on diarrhea time which was just affected by diarrhea severity, but even in cases with > or = 8 stools/12 h this time was less 24 hours. A k=0.66 showed a good physicians-patients agreement about an effectiveness-tolerability positive perception with racecadotril. Conclusion: Diarrhea severity was the only factor negatively associated with racecadotril effectiveness in childhood acute watery diarrhea, however, the diarrhea duration it was less 24 hours even in severe cases. Cultural common customs as nursing stop during diarrhea and delay the treatment can be unhelpfully with the therapeutic performance of racecadotril.

PO299

Title:
CAUSES OF DYSPHONIA AND FINDINGS ASSOCIATED WITH GASTROESOPHAGEAL REFLUX DISEASE (GERD).

Paula F Duque 1, Claudia L Gonzalez 2, José F Vera-Chamorro 3, Guillermo Campos 4
1) Pre graduate student. Fundación Santa Fe. Universidad Militar, Bogotá, Colombia 2) Pediatric Resident. Universidad del Rosario, Bogotá, Colombia 3) Pediatric Gastroenterologist. Reflux Clinic. Fundación Santa Fe.Universidad del Rosario, Bogotá, Colombia 4) Laryngologist. Reflux Clinic, Fundación Santa Fe., Bogota, Colombia,vera@cable.net.co

Summary:
Objective: To identify the causes of dysphonia and it’s association with GERD in patients under 18 years of age in a clinic specialized in pediatric laryngology and gastroenterology. Methods: A retrospective descriptive study in patients under 18 years of age who were evaluated in the clinic between August 2003 and February 2008 due to disphonia as a main symptom. Laryngeal videostroboscopy (LVS, 40 frames per second) and/or High-speed videolaryngoscopy (HSV, 4000 frames per second) were carried out by a laryngologist. A questionnaire inquiring about specific symptoms was evaluated by physicians-patients agreement about effectiveness-tolerability positive perception with racecadotril. Results: Patients treated with PPI, associated with prokinetics in 5 (20%); two cases (8%) were treated with Antii-H2, three (12%) with prokinetics and Antii-H2 and one with prokinetics and antacids. Only one patient received antacids exclusively, two patients did not receive pharmacological treatment. Three patients received treatment for the eradication of H. pylori. Laryngeal surgery was performed on

PO299

Title:
A real-world study of determinants on effectiveness of racecadotril in childhood diarrhea

Lisett Rondón 1, Gilda Stanco 2, José Chacón 3
1) Hospital Universitario de Caracas, Caracas, Venezuela 2) Hospital Materno-Infantil de Petare, Caracas, Venezuela 3) Centro Clínico Profesional Caracas, Caracas, Venezuela

Summary:
Objective: To identify factors affecting the effectiveness of racecadotril in Venezuela. Methods: A total of 3873 children > or = 12 years old with watery diarrhea, coming from a real-world clinical practice setting, was treated with racecadotril, a blocking enkephaline breakdown plus oral rehydration by 97 pediatricians in a naturalistic, prospective, multicenter, open-label study. Patients had acute watery diarrhea and had passed > or = 3 diarrheic stools in 24 h, they were evaluated daily until had passed two consecutive formed stools or without stool for 12 h. The post-treatment watery stool time (from the first racecadotril dose until watery stools were stopped) and the total post-treatment watery stools were the outcomes in this study. Age, weight, gender, nursing type, nursing stopping during diarrhea, diarrhea severity, co-medication, pre-treatment time and residence site were factors evaluated. Racecadotril effectiveness and tolerability overall assessment was searched by physicians and patients. Outcomes were evaluated by factors using one-way ANOVA and post-hoc analysis was done. Continuous variables was evaluated by Pearsons correlation; a multiple regression analysis was carried out to identify determinant factors and finally, physician-patient agree about effectiveness and tolerability overall assessment was evaluated by kappa value. Results: Post-treatment watery stool time and number were 18.5 +/- 12.45 h and 3.62 +/- 1.95, respectively. Age, nursing stop, diarrhea severity, pre-treatment time and co-medication were the main factors associated with racecadotril effectiveness but just nursing stop, younger age and a long pre-treatment time had a independent negative effect on effectiveness when measured by number of stools but have no effect on diarrhea time which was just affected by diarrhea severity, but even in cases with > or = 8 stools/12 h this time was less 24 hours. A k=0.66 showed a good physicians-patients agreement about an effectiveness-tolerability positive perception with racecadotril. Conclusion: Diarrhea severity was the only factor negatively associated with racecadotril effectiveness in childhood acute watery diarrhea, however, the diarrhea duration it was less 24 hours even in severe cases. Cultural common customs as nursing stop during diarrhea and delay the treatment can be unhelpfully with the therapeutic performance of racecadotril.

PO299

Title:
CAUSES OF DYSPHONIA AND FINDINGS ASSOCIATED WITH GASTROESOPHAGEAL REFLUX DISEASE (GERD).

Paula F Duque 1, Claudia L Gonzalez 2, José F Vera-Chamorro 3, Guillermo Campos 4
1) Pre graduate student. Fundación Santa Fe. Universidad Militar, Bogotá, Colombia 2) Pediatric Resident. Universidad del Rosario, Bogotá, Colombia 3) Pediatric Gastroenterologist. Reflux Clinic. Fundación Santa Fe.Universidad del Rosario, Bogotá, Colombia 4) Laryngologist. Reflux Clinic, Fundación Santa Fe., Bogota, Colombia,vera@cable.net.co

Summary:
Objective: To identify the causes of dysphonia and it’s association with GERD in patients under 18 years of age in a clinic specialized in pediatric laryngology and gastroenterology. Methods: A retrospective descriptive study in patients under 18 years of age who were evaluated in the clinic between August 2003 and February 2008 due to disphonia as a main symptom. Laryngeal videostroboscopy (LVS, 40 frames per second) and/or High-speed videolaryngoscopy (HSV, 4000 frames per second) were carried out by a laryngologist. A questionnaire inquiring about specific symptoms was evaluated by physicians-patients agreement about effectiveness-tolerability positive perception with racecadotril. Results: Patients treated with PPI, associated with prokinetics in 5 (20%); two cases (8%) were treated with Antii-H2, three (12%) with prokinetics and Antii-H2 and one with prokinetics and antacids. Only one patient received antacids exclusively, two patients did not receive pharmacological treatment. Three patients received treatment for the eradication of H. pylori. Laryngeal surgery was performed on
4 patients. Conclusions: The causes associated with dysphonia in this group of patients were: sulcus vocalis in 10 (40%), chronic laryngitis due to GERD in 6 (24%), sub epithelial lesions in 6 (24%), and others in 3 (12%). Chronic laryngitis alterations due to GERD were found in 15 (60%) patients with GERD symptoms. 19 (76%) were treated with PPI and on 4 laryngeal surgery was performed. More ample prospective studies are required.

P0300

Title: CHRONIC FUNCTIONAL CONSTIPATION: CASE STUDIES AND CONTROL IN THE CARDIO-INFANTIL FOUNDATION, BOGOTA, COLOMBIA

Javier Y Pinzón 1, José F Vera-Chamorro 1, Julia K Herrera 1, Marco A Suárez 1
1) Pediatric Gastroenterology, Hepatology and Nutrition Units. Fundación Cardio-Infantil. Universidad del Rosario. vera@cable.net.co, Bogotá , Colombia

Summary:
Functional chronic constipation (FCC) represents a frequent cause for consults, constituting between 1-3% of the pediatric consults and around 25% of gastroenterological consults. Objective: Determine the risk factors due to suffering from FCC in patients that attended a gastroenterological consult, compared with healthy children. Patients and methods: a survey was carried out by means of a questionnaire to 200 parents of patients older than one month of age and less than 18 years of age diagnosed with FCC. The same method was applied to 200 children and adolescents diagnosed with healthy child- in the pediatric consult between January 2005 and June 2006. Chi square tests were carried out for nominal variables in terms of OR and t for student- in normal distribution variables. Results: the risk factors associated with FCC were: low water consumption OR 49.6 (CI 24.7-105); low consumption of legumes: OR 24.9 (CI 13.9-45.3); low consumption of vegetables: OR 11.14 (CI 6.6-19); family with constipation: OR 9.9 (CI 5.5-19); family with irritable bowel syndrome: OR 9.3 (CI 4.2-23.3); absence of mother’s milk: OR 8.4 (CI 4-19.2); low consumption of fruit: OR 6.55 (CI 3,8-11.5) and family with atopia OR 4.6 (CI 2-11.8). Conclusions: The low consumption of water, legumes, fruit and vegetables and a family history of FCC, irritable bowel and atopia, were risk factors associated with FCC in this population.

P0301

Title: Comparing different methods to consider the duration of reflux episodes in the Esophageal pH studies in children.

JOSÉ VICENTE SPOLIDORO 1, MATIAS EPIFANIO 1, JULIANA CRISTINA ELOI 1, DAIANE MILIOLI 1, SIDIANE FERREIRA 1
1) Hospital São Lucas da PUCRS, Porto Alegre, Brazil

Summary:
Introduction: Esophageal pH study (EpH) is a very useful test to evaluate Gastroesophageal Reflux (GER). The main indication for EpH is patients with suspected association between respiratory problems and GER. This study consider an episode of GER when esophageal pH comes below pH 4.0, however there is different interpretations to consider when a reflux episode finishes. Someone consider the end of reflux episode when the pH goes above pH 4.0; other one consider when it arrives to pH 5.0. The ESPGHAN has considered the end of episode when the esophageal pH stays more than 15 seconds above pH 4.0. The definition of the end of reflux episode is very important, because it determines its duration, one of the most important parameters for EpH interpretation. Objective: compare results of EpH parameters using three different methods to consider the end of reflux episode. Material and Methods: One hundred EpH studies in children were aleatory selected from 480 studies and they were reviewed. They were recalculated using three different methods to consider the end of reflux episode: method I (4x4) when it arises to pH4.0; method II (4x5) when it arises to pH 5.0; method III (ESPGHAN) when stays more than 15 sec above pH 4.0. The analyzed parameters were: total number of episodes (n ep); number of episodes longer than 5 minutes duration (>5); number of episodes longer than 20 minutes duration (>20); duration of the longer episode (longer); Euler index (Euler); ZMD index (ZMD) and reflux index. The statistic analyses were done using ANOVA with Tukey, comparing numeric variables between more than 2 groups, using the program SPSS 11.5. Results: (4x4) method had more “n ep” than the other methods (p<0,001), and the number of episodes >20 minutes were higher on the (4x5) (p<0,001). There was no statistical differences between number of episodes >5 minutes, as well as in the duration of the longer episode. Euler index was higher in the 4x4 comparing to ESPGHAN (p<0,001) and ZMD index didn't show statistical difference. Conclusion: there are significant statistical differences between methods to consider the end of reflux episode. 4x5 method has longer episodes, especially when the patient has a slower esophageal clearance. 4x4 can consider a new reflux episode when patient is trying to clear the esophagus. ESPGHAN method shows intermediate results.

Method
Numb of episodes Numb of ep >5min Numb of ep >20min longer episode (min.) Euler Index ZMD index Reflux index
4x4 64,65 4,39 0,61 20,24 77,44 0,79 7,65
4x5 39,63 5,72 1,57 39,84 61,29 2,79 8,14
P0302

Title: MANAGEMENT OF ACUTE DIARRHEA OF A POSSIBLE BACTERIAL ORIGIN: CASE AND CONTROLS STUDY

German Briceño 1, José F Vera-Chamorro 1, Jaime A Céspedes 1, Sonia Villegas 1, Sonia Salcedo 1, María Belen Tovar 1
1) Emergency Services. Pediatric Gastroenterology, Hepatology and Nutrition Unit. Fundación Cardio-Infantil. Universidad de la Sabana. vera@cable.net.co, Bogotá, Colombia

Summary:
Objective: evaluate the association between the clinical conditions: dysentery and fever > 39ºC, with clinical improvement in children with acute diarrhea of a possible bacterial origin (DBO) Methods: case and controls study in a cohort form in children <10 years with DBO: presence of >1 of the variables: dysentery, fever >39ºC, convulsions, systemic inflammatory response syndrome (SIRS), immunosupression, contagious notion. The cases were children with DBO in whom diarrhea was > 14 days (persistent diarrhea) and/or required antibiotics. The controls were children with DBO in whom the diarrhea was auto limited to <14 days and did not require antibiotics. In all of them the following were performed: stool analysis, ELISA for adenovirus and rotavirus, coprocultures for enteropathogens and telephonic follow up at 7 and 14 days. Clinical improvement was deemed upon the disappearance of the diarrhea <14 days and/or non requirement of antibiotics. The OR were calculated, CI95%, conditional logistical regression (Stata, version 8). Results: 153 children were evaluated, average age of 3.3 years, with acute diarrhea of 2.5 (1-10) evolution days. They presented: dysentery 49.7%, fever > 39°c: 60.13%, convulsions 3.92%, SIRS 6.54%, immunosupression 1.96%, contagious notion 17.65%. Enteropathogens were isolated in 33 (21.6%), shiguella 18.3%, non typhi salmonella 2%, salmonella typhi 1.3%, adenovirus 0.65%, rotavirus 3.3%, E. hystolitica trophozoits 13.7%, 29.5% received antimicrobials for management. The multivariate analysis excluded 21 children with amebiasis; cases 43 (32.6%), controls 89 (67.4%). The OR (CI95%) for non clinical management are shown in the table 1. Conclusions. Dysentery among children with DBO is associated with non clinical improvement. Variables such as fever > 39C, contagious notion, age <24 months were not associated with clinical improvement so we suggest not to use these criteria for the use of antibiotics. There is an overuse of antibiotics in the management of DBO.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cases n (%)</th>
<th>Controls n (%)</th>
<th>Odds ratio (CI 95%)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysentery</td>
<td>29 (67.4)</td>
<td>38 (42.7)</td>
<td>2.9 (1.3 - 6.6)</td>
<td>0.01</td>
</tr>
<tr>
<td>Fever higher 39ºC</td>
<td>24 (55.8)</td>
<td>55 (61.8)</td>
<td>1.1 (0.5 - 2.5)</td>
<td>0.81</td>
</tr>
<tr>
<td>Contagious notion</td>
<td>7 (16.3)</td>
<td>16 (18.0)</td>
<td>1.1 (0.4 - 3.2)</td>
<td>0.83</td>
</tr>
</tbody>
</table>

P0303

Title: Herpes Simplex and Eosinophilic Oesophagitis; Report of three cases

Katharine A. G. Squires 1, Donald J. Cameron 2, Mark R. Oliver 3, José Cesar da Fonseca Junqueira 4
1) Department of Gastroenterology and Nutrition, Royal Children’s Hospital, Melbourne, Australia 2) Department of Pediatrics, University of Melbourne, Melbourne, Australia 3) Murdoch Children’s Research Institute, Melbourne, Australia 4) Instituto de Puericultura e Pediatria Martagão Gesteira Departamento de Pediatria, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Summary:
Eosinophilic oesophagitis is a condition which is being recognized more frequently in developed countries. It is more commonly seen in males and presents with symptoms of gastroesophageal reflux, dysphagia and episodes of food bolus obstruction. Many of these patients have a positive history of atopy. The isolated eosinophilic inflammation of the oesophagus is thought, in some, if not all, patients, to be part of an allergic response to food antigens or aeroallergens (such as pollen) perhaps triggered by environmental factors that predispose the patient to developing an eosinophilic response in the presence of such antigens or allergens. One such trigger could be a viral agent such as Herpes Simplex virus [HSV], a common infection in the community. In the following case series three patients are presented (Two from Melbourne, Australia and one from Rio de Janeiro, Brazil) who had HSV infection and then developed endoscopic features of eosinophilic oesophagitis. The main clinical features were dysphagia and odynophagia. The first one performed Gastroscopy showed a macroscopic appearance initially suggested Candidal infection with
Patients with IBD and the ones of the polyps group led 19 and 14 months respectively since the first symptoms appeared and the diagnosis were made. The mean number of consultations needed to establish the diagnosis was 62.26 months respectively (p=0.225) and that in the group of food allergy the patients are younger with average age of 7.53 months (p<0.001 when compared with the other two groups). Subjects with IBD and FA were anemic (Hemoglobin 10.68 g/dl and 10.36g/dl respectively) and colorectal polyp subjects had a mean hemoglobin concentration, at the fist consult, of 12.34. The mean incidence and prevalence rates and clinical characteristics of IBD in our pediatric population.

P0305

Title: Lower gastrointestinal bleeding in children in a pediatric gastroenterology unit in Rio de Janeiro, Brazil

José Cesar da Fonseca Junqueira 1, Antônio Celso Calçado 1, Josther Gracia 1, Sheila Percope Guerra 1, Silvio da Rocha Carvalho 1, Márcia Angélica Bonilha Valadares 1, Mônica Monerat 1, Mariana Deboines 1, Renata Vidal 1
1) Instituto de Puericultura e Pediatria Martagão Gesteira Departamento de Pediatria, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Summary: Methods: Retrospective review of children's clinical notes that were referred between January 2000 and February 2007, with lower gastrointestinal bleeding, who were attended at the Pediatric Gastroenterology Unit of Martagão Gesteira Pediatric Institute of the Federal University of Rio de Janeiro, Brazil. Demographic data, clinical presentation, and colonoscopy findings were analyzed to determine the causes of rectal bleeding those children. Results: A total of 80 children were included with a mean age of 63.87 months (range 85 – 180.58 months). 35 girls and 45 boys. 97.5% had multiple plaques throughout the oesophagus. The microscopic findings were of typical Herpes virus inclusions. The biopsies were positive for HSV by PCR and immunoperoxidase stain. The second one, had a past history of repeated oesophageal dilatation of strictures resulting from a caustic injury at three years of age. The gastroscopy showed extensive and severe ulcerative oesophagitis with a heavy infiltrate of polymorphs, changes of gastrointestinal reflux but no plaques. HSV-1 was isolated on serology and culture of histopathology. The third one had a past history of chronic sinus disease and hay fever and a family history of atopy. Gastroscopy was performed and showed ulcers suggestive of herpes or cytomegalovirus (CMV) oesophagitis, bleeding and necrotic tissue were visualized. His initial serology showed IgG and IgM positivity to herpes. Epstein-Barr virus, CMV and HIV were negative. Two patients had between 10 and 13 eosinophils at the first esophageal biopsies. A second gastroscopy performed in all three patients, after treatment with acyclovir and other medications were consistent with eosinophilic oesophagitis. Biopsies were consistent to this diagnosis showed macroscopic features of eosinophilic oesophagitis, and eosinophil counts were upper 15 eosinophils/HPF. The implications of a possible link between the two conditions must need more research and to be discussed.

P0304

Title: Inflammatory bowel disease in children in a pediatric gastroenterology unit in Rio de Janeiro, Brazil

José Cesar da Fonseca Junqueira 1, Antônio Celso Calçado 1, Josther Gracia 1, Sheila Percope Guerra 1, Daniele Pestana 1, Lilian Nobre 1
1) Instituto de Puericultura e Pediatria Martagão Gesteira Departamento de Pediatria, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Summary: Background: Inflammatory bowel disease (IBD) is believed to be infrequent in developing countries; however, anecdotal reports have showed the rise of IBD in Rio de Janeiro. Methods: Demographic and clinical features, extraintestinal manifestations, extension of disease and complications of 20 patients with ulcerative colitis (UC), 10 with Crohn's disease (CD) and 7 with indeterminate colitis (IC) were reviewed retrospectively from children's clinical notes that were referred between September 1996 and January 2008 to the Martagão Gesteira Pediatric Institute of the Federal University of Rio de Janeiro, Brazil. Results: Mean age at diagnosis was 116.13 months in UC, 104.64 months in CD and 123.03 in IC patients. There was no statistical difference referring to age (p>0.05). The male to female ratio was 2.3:1 for UC and CD, and 2:1 for IC. The main clinical features (%): Abdominal pain (UC - 65, CD - 80, IC – 100), Diarrhea (UC - 85, DC - 70, IC – 57), Bloody stools; (UC - 100, CD - 60, IC - 57), and the ileocolonic location (%): Proctitis (UC - 0, DC - 25, IC - 0), Proctosigmoiditis (UC - 85, DC - 70, IC – 57), Left sided colitis (UC - 10.5, DC - 12.5, IC - 0), Extensive colitis (UC - 10.5, DC – 0, IC – 33.3), Pancolitis (UC - 47.4, DC - 12.5, IC – 33.3), Ileocolonic (UC - 26.3, DC - 25, IC – 0), Disease of terminal ileum (UC - 0, DC – 12.5, IC – 16.7). Conclusion: The demographic and clinical picture of IBD is more or less the same as that of other developing countries. There are some differences in clinical characteristics. A further population-based epidemiological study is required to determine the prevalence and incidence rates and clinical characteristics of IBD in our pediatric population.
confirmed by the specialized unit. Conclusion: IBD is told not to be a common disease in developing countries. The analyses of these patients show that IBD has to be thought mainly when lower bleeding is found associated with anemia in older children.

P0307

Title: Pyrosequencing-based Metagenomic Analysis of the Fecal Microbiota in Korean Populations in Relation to Age

Ju Y Chang 1, Jongsik Chun 3, Jae S Ko 2, Jeong K Seo 2
1) Seoul National University Boramae Hospital, Seoul, South Korea 2) Seoul National University, School of Medicine, Seoul, South Korea 3) Seoul National University, School of Biological Sciences, Seoul, South Korea

Summary: Title: Pyrosequencing-based Metagenomic Analysis of the Fecal Microbiota in Korean Populations in Relation to Age. Background: Age related changes in the composition of human intestinal microbiome have been investigated mainly with culture and non sequencing-based molecular methods, which provide inevitably a limited view of microbial communities. Recent improvements in DNA sequencing technology enable researchers to explore microbial communities much more extensively and relatively cheaply than has previously been possible. In this study, we used new pyrosequencing method to determine the age-related changes of the fecal microbiota in healthy Korean children and adult populations. Methods: Fecal samples were collected from 120 healthy Korean preschool children, young adults and elderly people. They had not taken antibiotics for at least 3 months prior to stool collection and were free of chronic gastrointestinal diseases. DNA was extracted from each sample and PCR amplification for 16S rDNA was done using broad-range bacterial primers with bar coding. A standard protocol was used to sequentially purify, pool the resulting PCR amplicons and to bind them to beads. Pyrosequencing was done on Genome Sequencer FLX system according to manufacturer’s instructions. Results: ~ 120,000 partial 16S rDNA sequences were used for final identification and phylogenetic analysis. Overall, the dominancy of two phyla, Firmicutes and Bacteroidetes was observed in all subjects, though there was significant variation in the structure of the indigenous fecal microbiota between individuals. In the minority of the subjects, Bacteria spp. belong to novel phyla which had not been previously reported in human microbiome were found. Children had significantly higher proportion of Gammaproteobacteria and reduced ecologic diversity than either young adults or the elderly, showing less developed intestinal microbiota. Conclusions: The pyrosequencing using bar coded primers is useful for both the large scale screening and the extensive exploration of the human intestinal microbiota. The composition of microbial communities from Korean populations differed between children and adults, each showing a characteristic colonization pattern.

P0308

Title: Efficacy and safety of infliximab treatment in pediatric patients with refractory and fistulizing Crohn’s disease

Jung Min Yoon 1, Kon Song Lee 1, Jae Sung Ko 1, Jeong Kee Seo 1
1) Division of gastroenterology, hepatology, and nutrition, Seoul National University Children’s Hospital, Seoul, Korea

Summary: Background: TNF-alpha blocking agents (infliximab) have shown to be effective in treatment for refractory and fistulizing Crohn’s disease (CD) in adults. However, the experience of infliximab treatment for CD in children is very limited. Materials and Methods: We analyzed the efficacy and safety of the infliximab treatment in 14 patients (11 males and 3 females) with refractory and fistulizing CD among total 79 CD patients who have been followed up at Seoul National University Children’s Hospital since January 2002. The mean age was 12.9 years and the youngest age was 3 years. Mean follow up duration after infliximab treatment was 15 months. Results: Among 14 patients, 8 patients had fistulizing CD and 6 patients had refractory luminal CD; 2 patients with steroid dependence had underlying myelodysplastic syndrome. The mean CDAI and PCDAI score was 223.2 and 43.6 at the beginning of infliximab infusion, respectively. A total of 127 infliximab infusions were administered. Adverse effects of infliximab therapy were chest tightness in 2 patients (1.5% of total infusions), respiratory difficulty in 2 patients (1.5%) and facial flushing in 1 patient (0.7%). None had serious infectious complications. In one patient, the infliximab infusion was stopped because of anaphylactoid reaction with rashes on the whole body and respiratory difficulty. Among remaining 13 patients receiving infliximab therapy, 10 patients showed marked improvement of clinical symptom and endoscopic finding and the other 3 patients underwent surgical interventions for intestinal stricture or intractable fistula. Three patients required shortening of the interval between infliximab infusions or dose adjustment. Conclusion: Infliximab is effective and safe in refractory and fistulizing CD in children. Further prospective study in large number of patients is needed for the evaluation of long term efficacy and safety of infliximab treatment in pediatric population.

P0309

Title:
Fecal Lactoferrin as a Marker for Cow’s Milk Protein Intolerance in Infants

Ian Macumber MS IV 1, Jay Fong MD 2, Jyoti Ramakrishna MD 2
1) UMass Medical School, Worcester MA, USA 2) UMassMemorial Healthcare, Worcester MA, USA

Summary:
Objective: To evaluate fecal lactoferrin (FL) as a marker to aid in diagnosing cow’s milk protein intolerance (CMPI) in infants. Hypothesis: FL is a neutrophil-derived marker signifying inflammation of GI mucosa. It has been used to follow acute infectious diarrhea and inflammatory bowel disease. Infants with CMPI have inflammation of the GI mucosa presenting with symptoms of colic, reflux and colitis. This should cause an elevation of FL in these infants, and if so would be a useful clinical marker. Methods: We sent FL on all full term infants presenting below 6 months of age with any of the following symptoms - irritability, spitting, vomiting, pain, poor feeding, poor weight gain, diarrhea, constipation, blood or mucus in stools. Most were already being treated with acid-blocking medications and were either breast fed or on a hydrolysed formula at the first visit. We included children with rashes or respiratory symptoms, and excluded infants who were below 38 weeks gestation, or had neurological or musculoskeletal problems that could contribute to irritability and poor feeding. Results: 14 children met these criteria. All were fussy and crying inconsolably. 10/14 (71%) had + FL. 6/10 (60%) with + FL did not have blood seen or detected in stool. 4/10 with +FL were breast fed. All 4 with + FL were already on hydrolysed formula and acid blockers when seen. Feeding refusal or aversion was seen in 2/4 with +FL and 2/10 with + FL. 1/4 with + FL and 7/10 with + FL had diarrhea. 3/10 with + FL had constipation. Coughing and wheezing were seen more in the + group. Rashes, choking events, congestion and failure to thrive did not show a significant difference. Conclusion: In a very selected population of infants who were fussy and crying without response to reflux treatment, the incidence of CMPI is expected to be high. Using FL as a marker we were able to demonstrate that 10/14 children (71%) had an inflamed GI mucosa consistent with CMPI. FL is a better marker than occult blood, which identified only 40% of these patients. The 4 FL - infants were already on hydrolysed formula and some may have been FL + if checked before the formula change. A larger community-based prospective trial, where FL is obtained at first presentation (hence including children with reflux and colic, with normal controls), is needed to better test our hypothesis. A simple test like FL could facilitate identification of patients with CMPI, enabling more accurate diagnosis and treatment.

P0310
Title:
Evaluation of the Growth of Children with an Early and Late Diagnosis of Celiac Disease

Karen Aparecida Ponceano Nunes 1, Suzelidi Bernardo Castanheira 1, Andrea Aparecida Contini Rodrigues 1, Rosa Helena Monteiro Bigelli 1, Regina Sawamura 1, Maria Inez Machado Fernandes 1
1) Faculdade de Medicina de Ribeirão Preto - Universidade de São Paulo, Ribeirão Preto, Brasil

Summary:
Objective: To investigate the effect of a gluten-free diet on the nutritional status and growth of children with an early and late diagnosis of celiac disease (CD). Cases and Methods: This was a retrospective study of the medical records of 24 children with a diagnosis of CD according to the revised criteria of the European Society of Pediatric Gastroenterology and Nutrition (ESPGHAN) followed up at the Children's Gastroenterology outpatient clinic of the University Hospital of Ribeirão Preto, USP, Brazil. The children were divided into two groups according to age at diagnosis, i.e., before and after three years of age. Anthropometric data were calculated as weight for height and height for age Z-scores (WHZ and HAZ, respectively) using the Epi Info version 3.4.3 software and were compared at the time of diagnosis, during the 1st, 2nd and 3rd year of a gluten-free diet, and on the occasion of the last visit. Data were analyzed statistically by the Student t-test, with the level of significance set at P < 0.05. Results: At diagnosis, 29% of the children were malnourished, with a similar distribution in both groups and 42% had short height, with a higher prevalence among children older than three years. Mean WHZ at diagnosis was -1.0 ± 1.48 and mean HAZ was -1.71 ± 1.32. With the gluten-free diet there was a significant increase in mean WHZ for all children and in HAZ for children older than 3 years with short stature. About 70% of the children achieved a complete catch-up growth. Two children, one in each age group, presented incomplete catch-up growth to the 3rd year of follow-up, and only one among those older than three years did not recover stature five years after the diagnosis. Conclusions: Regardless of age, most children recovered their weight after one year and presented complete catch-up after one to two years of follow-up, showing that adherence to a gluten-free diet can promote growth catch-up even among children with a late diagnosis.

P0311
Title:
Eosinophilic esophagitis in infants and children in the region of Southern Denmark. A prospective study of prevalence and clinical presentation

Kasper Dalby 1, Rasmus G Nielsen 1, Søren Kruse-Andersen 2, Claus Fenger 3, Carsten Bindslev-Jensen 4, Steffen Husby 1
1) Dep. of pediatrics, Odense Universityhospital, Odense, Denmark 2) The Gastrointestinal Motility laboratory, Odense University hospital, Odense,
H18. Case report and microbiology. We report an 18-year old adolescent admitted with 30 days of diarrhea with no mucus or blood, nausea and primarily as uropathogenic or as associated with meningitis. These included E. coli O1/O2:K1:H7, E. coli O18:K1:H7, and E. coli O11/O17/O77:K52:K120, respectively. Further, these serotypes were isolated from the urine and CSF of the patient. The organism isolated was identified as diarrheagenic E. coli (ETEC). Among the extraintestinal pathogenic E. coli strains there are specific clonal groups, which traditionally have been regarded as uropathogenic E. coli (DAEC), enteroinvasive E. coli (EIEC), enteropathogenic E. coli (EPEC), enterohemorrhagic E. coli (EHEC), and enterotoxigenic E. coli (ETEC).

Introduction. Escherichia coli can be classified as commensals, intestinal or extraintestinal pathogens according to their virulence factors and clinical properties. Among the E. coli causing intestinal diseases (diarrheagenic E. coli) there are six different pathotypes: enteroaggregative E. coli (EAEC), adherent-invasive E. coli (AIEC), enteroinvasive E. coli (EIEC), enteropathogenic E. coli (EPEC), enterohemorrhagic E. coli (EHEC), and enterotoxigenic E. coli (ETEC). Among the extraintestinal pathogenic E. coli strains there are specific clonal groups, which traditionally have been regarded as uropathogenic E. coli (DAEC), enteroinvasive E. coli (EIEC), enteropathogenic E. coli (EPEC), enterohemorrhagic E. coli (EHEC), and enterotoxigenic E. coli (ETEC). These pathotypes have distinct pathogenic properties.

Summary:

Objective: Eosinophilic esophagitis (EE) is a clinical entity characterised by a set of symptoms and eosinophilic infiltration of the oesophageal epithelium. Recent reports indicate that EE is increasingly diagnosed in paediatric patients. We aimed to estimate the incidence of pediatric EE in a European population. Methods: In a prospective study infants and children in the Region of Southern Denmark referred for evaluation of symptoms of gastroesophageal reflux disease (GERD) were investigated by endoscopy, 24-hour pH-metry, histology of biopsies from the upper GI-tract and allergological investigations. Results: Of 78 referred patients we found 28 with GERD. Six children had more than 15 eosinophils per high power field in mucosal biopsies from the esophagus and qualified for the diagnosis of EE. The median age at diagnosis was 9.6 years. In 4/6 food allergy mainly towards cow/ls milk, hen/ls egg and wheat flour was diagnosed by double-blind placebo controlled food challenge. In the Southern region of Denmark with a population of 256,164 between 0-16 years of age an annual incidence of EE of 0.16/10.000 could be estimated. Conclusion: We report the first European prospective study of eosinophilic esophagitis in infants and children. EE was documented in six of 78 patients with symptoms of GERD using strict diagnostic criteria with an annual incidence of 0.16/10.000 infants and children.

P0312

Title:
Gastroesophageal reflux disease versus eosinophilic esophagitis in infants and children. A prospective, population based study with esophageal pH, multiple intraluminal impedance and endoscopic ultrasound

Kasper Dalby 1, Rasmus G Nielsen 1, Søren Kruse-Andersen 2, Claus Fenger 3, Jesper Durup 4, Steffen Husby 1
1) Dep. of pediatrics, Odense University Hospital, Odense, Denmark 2) Gastrointestinal Motility laboratory, Odense, Denmark 3) Dep.of Pathology, Odense, Denmark 4) Dep. of Surgical Gastroenterology, Odense, Denmark

Summary:

Objective: Eosinophilic esophagitis and gastroesophageal reflux disease in childhood share aspects of symptomatology but pathophysiology, clinical signs and treatment differs between the two diseases. In the present study of infants and children with symptoms of gastroesophageal reflux disease, we aimed prospectively to evaluate the differences between patients with EE and GERD in esophageal pH, multiple intraluminal impedance (MII) and esophageal wall thickness as evaluated by endoscopic ultrasound (EUS). Design: Infants and children (0-15 years) with typical symptoms of gastroesophageal reflux disease persisting after a 14-days proton pump inhibitor trial were included in a prospective study protocol. Upper endoscopy and EUS of the esophageal wall was performed in general anaesthesia and combined MII/pH measurement was subsequently recorded for 24 hours. Results: A total of 78 infants and children were investigated. Three clinical groups could be defined based upon endoscopy, histology and 24-hour pH metry. An EE group (n=6) was characterized by esophageal biopsies with more than 15 eosinophils per HPF. A GERD group (n=28) had a pathological reflux index and/or esophagitis, and a group of infants and children had normal investigations (n=44). The GERD group showed significantly higher number of acid reflux episodes, (p=0.004) but not of non-acid reflux (p=0.9) In all patients gastroesophageal reflux as measured with MII extended above the proximal esophagus and probably into the pharynx. EUS in EE patients (n=4) indicated an increased thickness of the mucosal layers both in the distal and in the proximal part of the esophagus and in the muscularis propria for the proximal part when compared to the group with normal investigations. Conclusions: Esophageal MII measurements indicated that neutral reflux episodes are not of frequent occurrence in pediatric GERD nor in EE. In EE patients no changes in MII reflux parameters were demonstrated as compared to controls. MII in combination with pH-metry demonstrated that the majority of reflux episodes in GERD, EE and patients with a normal investigation passed into the proximal esophagus. EUS suggested in EE patients a thickened mucosa both in the distal (p=0.05) and the proximal esophagus (p=0.01) as compared to controls. This phenomenon seems to be specific for the eosinophilic inflammation as it was not seen in the pediatric GERD patients.

P0313

Title:
A case of persistent diarrhea caused by an usually extraintestinal pathogenic Escherichia coli O11:H18

Katia R S Aranda 1, Ulysses Fagundes-Neto 1, Isabel C A Scaletsky 1
1) UNIFESP, São Paulo, Brazil
fever, to the emergency room of a private hospital in the city of São Paulo in March, 2005. The fecal isolate was an Escherichia coli O11:H18 which presented aggregative adherence (AA) to HEp-2 cells and carried pAA gene sequences (aggR, aap, shf, pet, astA), which are characteristics of the EAEC pathotype. The strain was found to be resistant to ampicillin, ciprofloxacin, chloramphenicol, nalidixic acid, tetracycline, and trimethoprim-sulfamethoxazole, but susceptible to ceftriazone, which was the drug used for treatment. Conclusion. We recommend that E. coli O11:H18 should be taken into account as a potential cause of persistent diarrhea, due to its EAEC property, revealed in the present study.

P0314

Title: Production of a cytotoxin affecting Vero and rabbit intestinal cells by diffusely adherent Escherichia coli strains

Katia R S Aranda 1, Ulysses Fagundes-Neto 1, Isabel C A Scaletsky 1
1) UNIFESP, São Paulo, Brazil

Summary:
Introduction. Diffusely adherent Escherichia coli (DAEC) strains are currently considered to constitute a putative sixth group of diarrheagenic E. coli, but little is known about its pathogenesis. The secreted autotransporter toxin (Sat) produced by a DAEC causes intestinal damage in animal model assay and acts as a virulence factor in some DAEC strains by promoting lesions in the tight junction of polarized epithelial cells. Sat belongs to the family of serine protease autotransporters of Enterobacteriacea (SPATEs), which has specific and distinct functions, identified only in pathogenic bacteria, and includes a variety of toxins such as Pet, Pic, EspC, SigA, SepA, Tsh, and EspP. Objective. The purpose of this study was to search for the occurrence of Sat and toxin production in 112 DAEC strains isolated from children in a case-control study (61 from patients and 51 from healthy control subjects). Methods. Strains were tested for the presence of the sat gene by colony hybridization with a DNA probe obtained from PCR amplification product from the prototype DAEC strain C1845. Cytotoxin and enterotoxin production were detected in monolayers of cultured Vero cells and rabbit ileal loop assay. Results. The sat gene was present in about half (46%) of the diarrheic strains and very low rate (6%) in isolates from controls. Eight strains isolated from six patients and two controls showed a cytotoxic effect on Vero cells after 3-h incubation. Three of these strains isolated from patients induced fluid accumulation in the rabbit intestinal loop assay. Supernatant filtrate of two of those strains induced destructive lesions in the rabbit ileal loops as observed in the histological examination. None of these two strains presented the sat gene or other genes related to the SPATE family. Conclusion. This study provides evidence for a new secreted factor with toxigenic activity in DAEC strains, which is under investigation.

P0315

Title: CYTOMEGALOVIRUS INFECTION SHOULD BE CONSIDERED IN CHILDREN WITH STEROID-REFRACTORY ULCERATIVE COLITIS

Katsuhiro Arai 1, Aki Gen 2, Sachi Koinuma 1, Shigeo Nishimata 1, Atshuko Nakagawa 3
1) Div. of Pediatric Gastroenterology, National Center for Child Health and Development, Tokyo, Japan 2) Dept. of Interdisciplinary Pediatrics, National Center for Child Health and Development, Tokyo, Japan 3) Div. of Pathology, National Center for Child Health and Development, Tokyo, Japan

Summary:
Objective: Cytomegalovirus (CMV) is known to cause serious infection in immunocompromised host. Recently, adult cases of CMV colitis complicated with severe ulcerative colitis (UC) have been reported worldwide. However, there are few pediatric case reports. We report a case of CMV colitis in a child with steroid-refractory UC. Methods: Case report Results: A thirteen year-old Japanese boy was diagnosed to have UC (pan-colitis). His bloody diarrhea worsened with use of mesalazine, and corticosteroids (CS) was required to induce remission of his UC. Sairei-to(TJ-114), Japanese herbal medicine, was also started to maintain remission. With discontinuation of CS, his UC relapsed. CS was restarted with concomitant use of azathiopurine. He responded poorly to 1mg/kg/day of CS, and the dose of CS was raised to 2mg/kg/day. With continuous use of high dose CS, his colitic symptoms worsened with severe abdominal pain and frank bloody stool. CMV infection was evaluated with CMV antigenemia, and the result was positive. Initiation of ganciclovir significantly improved his colitis. Flexible sigmoidscopy, performed 6 days after initiation of ganciclovir, revealed punched-out lesion with deep ulcers. Inclusion body with active colitis was confirmed in the histology. Plasma and tissue polymerase chain reaction (PCR) assay for CMV also proved CMV infection. Ganciclovir was discontinued after 2 weeks with negative CMV antigenemia. PCR assay for both plasma and tissue also turned to negative. With treatment of CMV colitis, CS was successfully tapered off, and the remission of his UC was maintained with Azathiopurine and Sairei-to. Conclusions: CMV colitis should be considered in children with steroid-refractory UC. Treatment of CMV infection might avoid further immunosuppressive treatment or colectomy. CMV antigenemia is useful to detect CMV infection.

P0316

Title: Unusual Clinical Manifestations in Children with Perforated Appendicitis
Objective: Acute appendicitis is a common pediatric problem and appendiceal perforation may lead to severe morbidity and mortality. However, the definite diagnosis of perforated appendicitis is difficult to make due to the various clinical presentations. The purpose of this study is to evaluate and determine the frequency and characteristics of atypical clinical features of perforated appendicitis among pediatric patients who were less than 18 years old. Methods: This is a retrospective study by reviewing all the charts of 66 patients who were admitted from January 2002 to December 2007 with the diagnosis of perforated appendicitis. A controlled group of 92 patients who were diagnosed as acute appendicitis without perforation on the same studied period were compared. Statistical methods used were Mann-Whitney U test, Fisher's exact test, Chi-square test and Student T test (SPSS). Results: The various clinical presentations of acute appendicitis were compared between the studied and controlled groups. Clinical features such as age, sex, presence of McBurney's point tenderness, Rovsing's sign, obturator sign, fever, nausea or vomiting, pyuria, white blood cell counts and C-reactive protein levels were found to have no statistical differences between these two groups. On the other hand, the clinical presentations such as hospitalization day, duration of abdominal pain, rebound pain, muscle guarding, psoas sign and leukocytosis with left shift were found to be statistically significant in the studied group. Aside from this, we found out some unusual clinical manifestations which were rarely mentioned in other studies such as diarrhea or tenesmus in 15 patients (23%), mucoid stool in 8 patients (12%), dysuria in 5 patients (8%) and suprapubic tenderness in 4 patients (6%). Conclusion: Some pediatric patients with perforated appendicitis have various unusual clinical manifestations. To prevent the possibility of delayed diagnosis, perforated appendicitis should be considered if there is atypical course of prolonged abdominal pain accompanying by diarrhea, mucoid stool, dysuria or suprapubic tenderness.

P0317

Title: Different methods of assessment of bacterial flora in children with IBD

Kinga Kowalska-Duplaga 1, Andrzej Wedrychowicz 1, Magdalena Strus 2, Malgorzata Sladek 1, Piotr B. Heczko 2, Krzysztof Fyderek 1
1) Department of Pediatrics, Gastroenterology and Nutrition, Jagiellonian University, Medical College, Krakow, Poland 2) Chair of Microbiology, Jagiellonian University Medical College, Krakow, Poland

Summary:
4.13) were included into the study: 12 with ulcerative colitis (UC), 22 with Crohn's disease (CD), 3 with indeterminate colitis (IC) and 27 control subjects. All patients received the preparation prior to colonoscopy with oral sodium phosphate and bowel cleaning. During this time 3 fractions of stools were collected. Culture and FISH were performed separately for every fraction. Intestinal biopsy specimens from inflamed and non-inflamed mucosa of IBD patients and from healthy controls were cultured under aerobic and anaerobic conditions. Results: The ratios of different bacterial groups found in inflamed and non-inflamed mucosa of IBD patients and controls were specific for particular disease. The differences were statistically significant (Eq2 test; p<0.0001). Streptococcus spp. was predominant in samples taken from inflamed mucosa of CD patients (80% of all bacteria). UC patients showed a presence of mainly Lactobacillus spp. (90%). Lower number of bifidobacteria was observed in the whole IBD group in comparison to controls. Similar results come from investigation of stools samples. The number of different bacterial groups and species alternate depending of following fractions (from I to III): number of Bifidobacterium decreases while aerobic and microaerobic streins shows the growing tendency; the differences were statistically significant (Chi2 test; p<0.0001). In healthy controls, the bacterial microflora remains stable both in stool fractions and biopsy specimens. Conclusions: IBD children generally did not show more numerous populations of total bacteria in comparison to controls, however a predominance of some aerobes and facultative aerobes was noted. By investigation of stool's fractions we find out the quantitative changes in the composition of bacterial flora from the lumen of the bowel (fraction I and II) throughout the microbes close to the mucose layer (fraction III), up to mucosa-associated microflora (tissues specimens). These results allow a better understanding of changes in composition of bacterial flora in IBD patients and underlain the importance of mucosa-associated flora.

P0318

Title: Influence of CARD 15 and TLR-4 polymorphism on bacterial microflora in children with inflammatory bowel disease

Kinga Kowalska-Duplaga 1, Andrzej Wedrychowicz 1, Urszula Jedynak-Wasowicz 3, Magdalena Strus 2, Piotr B. Heczko 2, Krzysztof Fyderek 1
1) Department of Pediatrics, Gastroenterology and Nutrition Medical College of Jagiellonian University, Krakow, Poland 2) Chair of Microbiology Medical College of Jagiellonian University, Krakow, Poland 3) Department of Children's Diseases, Medical College of Jagiellonian University, Krakow, Poland

Summary:
Objective: The objective of our study was assessment of influence of CARD 15 and TLR-4 polymorphism and bacterial microflora in children with
inflammatory bowel disease (IBD). Methods: Thirty-five children (18 girls, 17 boys, mean age 14.1 yrs, range 4-18 yrs) with IBD were included into the study. The Crohn's disease (CD) group consisted of 20 children, ulcerative colitis (UC) group consisted of 11 children and 4 patients were with diagnosis of indeterminate colitis (IC). Asp299Gly polymorphism of TLR-4 gene was assessed using PCR-RLFP method. Three main polymorphisms of CARD 15 gene, R702W, G908R and 1007fs were assessed using allele-specific PCR and PCR-RLFP. Intestinal biopsy specimens from inflamed and non-inflamed mucosa of IBD patients were cultured under aerobic and anaerobic conditions. Stool samples were collected into sterile plastic bags in 3 fractions during cleaning prior to colonoscopy: I - after first enema, II – after oral administration of sodium phosphate and III – after 3rd enema. Culture and FISH were performed separately for every fraction of stool. Results: We found statistically significant differences in distribution of different bacterial groups between patients with (homozygotic and heterozygotic) and without polymorphism of CARD 15 and TLR-4. Those differences were highest in I and II stool fraction (p<0.0001) both for CARD 15 and TLR-4 polymorphisms. The similar changes were observed in results of culture from III stool fraction and from biopsy specimens from inflamed and non-inflamed mucosa (p<0.0001). Conclusions: The presence of CARD 15 and TLR-4 polymorphisms are associated with different distribution of cultured bacteria as compared with IBD patients without polymorphism. The differences were noticed both in bacteria present in the lumen of the bowel (I and II fraction), in flora located closer to the mucosa layer (III fraction) and mucosa-associated microflora (tissues specimens). This results may support the genetic influence on composition of bacterial flora and pathogenesis of IBD.

P0319

Title: Long-term outcome after a 12 months weight reduction program for a cohort of 10-14 y old obese German children

Klaus-M. Keller 1, Ulrike Müller 1, Otmar Ullrich 1, Sigrid Hohorst 1
1) German Clinic for Diagnostics, Wiesbaden, Germany

Summary:
Aim: Long-term weight reduction programs for obese children are scarce and not convincingly successful. Therefore, financial support by health insurance companies is often lacking. We report on the long-term results 3 years after an intensive multimodal program. Methods: 105 obese children (female 46; 10-14y old; BMI>97.perc; 41 children from single parent families; 48% low education mothers) underwent an intensive multimodal program including dietary counselling, structured exercises twice a week and psychological support, when necessary (according to the recommendations of AGA, the working group obesity in children in Germany; www.a-g-a.de). Results: 68 finished the whole 1y-program, the others (controls) the initial part only. Table: Conclusions: Even in disadvantaged families intensive weight reduction programs may result in sustained normal weight or overweight in almost half of the adolescents. A multidisciplinary stable team dedicated to a multifactorial disease is obligatory. Reimbursement by health insurance companies seems justified and very helpful. The study was supported by the Leopold-Klinge-Stiftung, Germany.

P0320

Title: Efficacy of human rotavirus vaccine RIX4414 (Rotarix™) in infants from Singapore during the first two years of life

Kong B Phua 1, Fong S Lim 2, Seng-Hock Quak 3, Bee-Wah Lee 4, Yee-Leong Y Teoh 5, Htay H Han 5
1) KK Women’s and Children’s Hospital, Singapore, Singapore 2) National Healthcare Group Polyclinics, Singapore, Singapore 3) National University of Singapore, Singapore, Singapore 4) Mount Elizabeth Medical Centre, Singapore, Singapore 5) GlaxoSmithKline Biologicals, Rixensart, Belgium
Objective: Rotavirus (RV) is the leading cause of severe diarrhea disease in infants and young children worldwide. GlaxoSmithKline Biologicals has developed a live attenuated human rotavirus oral vaccine RIX4414 (Rotarix™) that has been shown to be highly effective for the prevention of RV gastroenteritis (GE) in Europe and Latin America. Infants participating in a phase III, double-blind, randomized, placebo-controlled and multi-centre trial conducted in Singapore, Hong Kong and Taiwan (e-track107070, 107072, 107076/ NCT444563/028/029/030) were followed up to approximately 2 years of age to assess protection against severe RVGE. The individual results for Singapore are presented here. Methods: 6542 healthy infants 11–17 weeks of age at Dose 1 were enrolled in Singapore and randomized into two groups (1:1) to receive 2 doses of RIX4414 vaccine or placebo at a 0.1 month schedule (3, 4 months of age). Routine vaccinations were given concomitantly. Vaccine efficacy (VE) was calculated from 2-weeks post-Dose2 until approximately 24 months of age. Severity of RVGE was assessed using the 20-point Vesikari scale (severe RVGE ≥ 11). Diarrhoeal stool samples were analyzed for RV by ELISA and typed by RT-PCR based method. Safety data was collected throughout the study. Results: The demographic profile of RIX4414 and placebo group was similar. During the efficacy follow-up period (mean duration of 18 months), significantly fewer subjects in the RIX4414 group reported severe RVGE caused by the circulating wild-type RV compared to the placebo group: 1 in the RIX4414 group and 16 in the placebo group (p-value < 0.001). The dominant G-types during this efficacy follow-up period are G1, G3 and G9. The efficacy of the vaccine in terms of protection against severe RVGE due to circulating wild-type RV was 93.8% (95%CI:59.9;99.9). There was no evidence for a clinically meaningful difference between the two groups for SAEs reported during the study. Conclusions: These results demonstrate that in Singapore two oral doses of RIX4414 (Rotarix™) offer high and sustained protection against severe RVGE during the first two years of life when the disease burden is highest. These data are in line with efficacy results obtained for the overall study in Asia and Europe.

P0321

Title:
Colonic mucosal cytokines and pANCA, ASCA in unfavorable course of inflammatory bowel disease (IBD) in children

Elena Kornienko 1, Ekaterina Lomakina 1, Natalja Kalinina 1, Ludmila Chinenova 1
1) Pediatric Academy, St-Petersburg, Russia

Summary:
Aim: to assess a level of pro- and anti-inflammatory cytokines in colonic mucosa and serum autoantibody pANCA and ASCA in children with Crohn’s disease (CD) and ulcerative colitis (UC) according the course of disease. Material and methods: The level of pro-inflammatory (IL-6, IL-8, INF-£^, TNF-€^-) and anti-inflammatory (RaIL-1) cytokines in biopsies of colonic mucosa was studied by IFA in 60 8 - 17 year old children: 20 with CD, 20 with UC and 20 with IBS (control group (CG)). pANCA and ASCA were assessed in serum of the CD and UC patients. 13 CD and 11 UC patients were in an active phase, 7 CD and 9 UC patients had an inactive phase of disease. 10 UC and 11 CD patients had unfavorable course of disease according following criteria: no remission more than 6 months or relapse of disease during 1 year despite correct treatment. Results: The level of all studied cytokines in colonic mucosa, except IL-8 and TNF-fN in CD, was increased in several times in all IBD patients compared to CG (p<0.05). In the active phase of CD and UC the level of pro-inflammatory cytokines was higher, than in the remission. INF-fE^- was especially high in active CD (530,0±117,9 pg/ml), in the remission it decreased to 113,2±b72,6 pg/ml. An unfavorable course of CD had a tendency to keep the high level of INF-fE^-; TNF-fN was lower, than other pro-inflammatory cytokines. The level of RaIL-1 was much higher, than pro-inflammatory cytokines in all IBD patients, especially in active UC (1188,6±b347,8 pg/ml). In CD RaIL-1 was lower than in UC, but had a tendency to increase in the remission. RaIL-1 was higher in the patients with unfavorable course of CD and UC (925,2±b76,3 and 1692,2±b17,4 pg/ml respectively). 13 (65%) UC patients and nobody with CD had increased level of pANCA. ASCA was increased only in 8 (40%) patients of CD and none of UC. As in CD, as in UC, unfavorable course of disease was accompanied by increase of ASCA or pANCA in 80%, favorable course only in 0-10%. In case of high autoantibody level disease had extraintestinal signs and complications. Conclusion: ASCA or pANCA have strong specificity for CD and UC respectively. High level of anti-inflammatory cytokines (RaIL-1), ASCA or pANCA can predict an unfavorable course of IBD.

P0322

Title:
THE PROBLEM OF HELICOBACTER PYLORI ERADICATION IN CHILDREN IN THE REGION OF HIGH RESISTANCE TO CLARITROMYCINE.

Elena Kornienko 1, Natalja Parolova 1, Alexander Suvorov 1, Marina Dmitrienko 1
1) Pediatric Medical Academy, St-Petersburg, Russia

Summary:
The Maastricht 3-2005 Consensus Report recommends PPI-based triple therapies with clarithromycine (C) and metronidazole (M) as preferable in children in less than 40% M and 15-20% C resistance. Despite good early results of H.pylori eradication with that therapies in Europe, its results and antimicrobial resistance of H.pylori in Russian children are unknown. Aim: to work out suitable therapies of H.pylori in children according the resistance to clarithromycine. Material and methods: 88 children from 12 to 17 years old with H.pylori chronic gastritis (64) and ulcer disease (24)
were studied with PCR for 23SrRNA mutation in gastric biopsies. H. pylori was also recognized by histology, rapid urease test, and ammonia UBT (Helic-test). Every patient was examined for H. pylori twice: before and 6-8 weeks after treatment. According to the treatment scheme all patients were divided on 4 following groups:
1. n=25, omeprazole (O) 20mg bd + C 500mg bd + M 500mg bd 10 days – ECM 10.
2. n=20, omeprazole (O) 20mg bd + amoxicillin (A) 1000mg bd + bismuth subcitrate (BSC) 240mg bd 7 days – OAB 7.
3. n=23, omeprazole (O) 20mg bd + amoxicillin (A) 1000mg bd + bismuth subcitrate (BSC) 240mg bd 10 days – OAB 10.
4. n=20, omeprazole (O) 20mg bd + bismuth subcitrate (BSC) 240mg bd 10 days + amoxicillin (A) 1000mg bd during the first 5 days and then josamycin (J) during the last 5 days - OBAJ (consequent).

Results: The resistance to clarithromycine was recognized in 25 (28%) children. Eradication rate of ECM 10 was 14%, OAB 7 – 40%, OAB 10 – 75%, OBAJ – 85%. In case of H. pylori sensitivity to C efficacy of ECM 10 was 71%, in case of resistance to C – 3%. Efficacy of OBAJ didn’t depend on resistance to C, it was equal high in both subgroups (86% and 85%). Conclusion: In population with high antimicrobial resistance H. pylori 10 day triple therapy with PPI, BSC and amoxicillin or consequent scheme with amoxicillin and josamycin may be preferable.

P0323

Title:
ABDOMINAL SONOGRAPHY MASS SCREENING IN NEWBORNS

Lau Beng Huat 1, Su Ya Yun 1, Chen mei mei 1, Lee Jing sheng 1
1) Shin-kong memorial hospital, Taipei, Taiwan

Summary:
OBJECTIVES: Since April 2002, abdominal sonography was started to be a newborn screen program in our hospital. This report is to describe the common findings and the essentiality of mass screen in healthy newborns. MATERIAL/METHODS: Between April 2002 and January 2008, 7261 fullterm newborns underwent abdominal sonography screen in our hospital. Newborns who were ill or suspected with abdominal abnormalities by prenatal sonography were excluded. Most of them were examined within 72 hours after birth, and the others were between 3 to 30 days. The machines were Phillip Envisor C and Toshiba SSA 250. RESULTS: Hepatobiliary system: 80 cases has common bile duct or intrahepatic duct dilatation. 4 cases showed portal vein or hepatic vein abnormalities. Two case had liver parenchyma abnormality, one case with hematoma and the other is liver tumor. Gastrointestinal system: 26 cases showed marked gaseousness, and 2 of them were diagnosed lactose intolerance later. In 120 cases, gastroesophageal reflux was detected. Others systems: There were 29 cases of adrenal hemorrhage, 2 cases of unilateral kidney agenesis, and 3 cases of paraspinal mass. Early operation was done in one of the kidney agenesis due to contralateral duplication and neuroblastoma. Otherwise, 25 cases of ovarian cysts were found during the period. CONCLUSIONS: Abdominal sonography is an effective tool to disclose the structure information. By using it as a newborn screen, variable lesions maybe detected and managed early.

P0324

Title:
GENETIC POLYMORPHISM OF THIOPURINE METHYLTRANSFERASE IN ARGENTINE PATIENTS WITH AUTOIMMUNE HEPATITIS. A PRELIMINARY REPORT

Laura E Laróvere 1, Valeria Lorenc 1, Isidoro J Kohn 2, Nora Agüero 2, Verónica Petri 2, Raquel Dodelson de Kremer 1
1) CEMECO- Hospital de Niños; Clínica Pediátrica, Fac. Cs. Médicas, Universidad Nacional de Córdoba, Córdoba, Argentina 2) Servicio de Gastroenterología, Hospital de Niños de Córdoba, Córdoba, Argentina

Summary:
BACKGROUND/AIMS. The thiopurine methyltransferase (TPMT) catalyzes the S-methylation of thiopurine drugs as azathioprine which is used in the treatment of autoimmune hepatitis. TPMT shows a genetic polymorphism that is an important factor responsible for large individual differences in thiopurine toxicity and therapeutic efficacy. Ethnic variations in biochemical phenotype (enzymatic activity) and genotype (allele variants) have been identified in several population studies. In a previous stage we studied the TPMT polymorphism in a normal Argentinean population which showed a 10% of individuals in heterozygote state with partial TPMT deficiency. In the present report we investigate this polymorphism in patients with autoimmune hepatitis in order to know the incidence in this risk group and to contribute of the application of a preventive health program. METHODS. TPMT enzymatic activity was measured in erythrocytes using liquid chromatography and TPMT genotypes were determined by PCR-restriction fragment length polymorphism-based assays. RESULTS. The range of TPMT activity (pmoles/10 7 RC/h) in normal subjects (n=175) was 3.9-18.6 (MEAN±SD=9.43±2.99) and in the pathological group (n=23) was 3.5-21.3 (MEAN±SD=12.8±3.54), considering normal activity >7.1. Only one patient presented one abnormal allele, although it is necessary to extend the number of patients in order to obtain statistical significance. The prevalent abnormal allele in both groups was TPMT*3A. CONCLUSION. The pharmacogenetic screening for TPMT polymorphism in patients with autoimmune hepatitis before beginning azathioprine therapy allows the dose adjustment in order to prevent severe hematotoxicity. The investigation of TPMT polymorphism is an example of genomic medicine application which goal is an individual, predictive and preventive medical practice.
Gliadin stimulates SLAM expression on human monocytes

Laura Guillén 1, Natalia Periolo 1, Marcos Barboza 1, Alejandra Cherñavsky 1
1) Laboratorio de Inmunogenética, Hospital de Clínicas “José de San Martín”, Buenos Aires, Argentina

Summary:
Objectives: The induction of inappropriate immune reactions to normally harmless dietary antigens by the innate immune system is involved in the triggering of celiac disease. Coestimulatory molecules such as SLAM (signaling lymphocytic activation molecule) are involved in the development of the immune response. Gliadin stimulates human monocytes (Mo) to produce chemokines and proinflammatory cytokines. Our aim is to evaluate the expression of SLAM on monocytes after stimulation with gliadin. Materials/methods: Buffy coats from four normal healthy volunteers were processed for the isolation of Mo using standard gradients of Ficoll-Hypaque followed by centrifugation by Percoll. LPS (100 µg/ml), urea 2M, zein (100 µg/ml) and α-chemotripsy-digested gliadin (5-100 µg/ml in 0,1M NH4HCO3 / urea 2M) were separately incubated with Mo suspensions (70% CD14- positive, 10^6 cells/ml) for 24h in complete RPMI -1640, followed by double immunofluorescence staining using anti-CD14 PE and - SLAM FITC, and flow cytometric analysis. Interleukin (IL)- 8 was measured in cell culture supernatants collected after 24 hs by ELISA using a commercial kit according to the manufacturer's instructions (BD Biosciences). Reagents were tested by Limulus Amebocyte Lysate test for LPS contamination. Results: IL-8 was spontaneously released by Mo suspensions (12.2 ± 2.1 ng/ml) and further stimulated by zein (19.5 ± 3.2 ng/ml) and gliadin (57.9 ± 5.0 ng/ml) but not by urea. SLAM expression was also evaluated after different incubation conditions and representative results of four independent experiments were expressed both as CD14+SLAM+ double positive (DP) subpopulation and mean fluorescence intensity (MFI). Baseline levels of SLAM were observed on fresh Mo (DP:3.6 %, MFI:18,03), and after 24h of incubation with RPMI ( DP: 3.8%, MFI: 2.26), urea (DP: 1.8%, MFI: 29.60) and zein (DP: 2.4 %, MFI: 24.37). Interestingly, SLAM was similarly induced by LPS (DP: 36,9 %, MFI: 107.03) and gliadin (25ug/ml) ( DP: 32,28%, MFI: 102.72). Conclusions: The up regulation of SLAM by Mo suggests its involvement during the innate responses to gliadin. The selective induction of SLAM by gliadin, and also the reinforced effect on IL-8 production over zein, other food component, suggests a potential contribution of SLAM to pathogenic responses. The role of SLAM in celiac disease remains to be elucidated.

An uncommon clinical characteristic of an infant with cystic fibrosis: Case Report

Laura R L Belem 1, Andrea A Contini 1, José S C Junior 1, Lidia A G M Torres 1, Regina Savamura 1, Maria I M Fernandes 1
1) Faculdade de Medicina de Ribeirão Preto, Universidade de São Paulo, Ribeirão Preto, Brazil

Summary:
Introduction: Cystic fibrosis (CF) is a multisystemic disease with an incidence of approximately 1:2500 live births. Despite its frequency, the diagnosis of the disease is delayed and today there is a tendency to look for more rare diagnoses. Case Description: A male patient aged 5 months and 22 days presented adequate weight and height development up to 3 months of age, when he started to show intense pallor, nausea and diarrhea culminating with dehydration and hospitalization. An important clinical finding was the presence of discolored hair 1 cm from the root and dark at the tip, in addition to extreme skin pallor, edema, pasty turgor, apathy, and lower limb hypotonia. The patient was investigated for inborn errors of metabolism, immunodeficiencies (including Griscelli syndrome = immunodeficiency and absence of melanin) and by computed tomography, and magnetic resonance, in addition to being submitted to subsidiary tests of other organs and systems. All results were within normal limits, except for an altered IRT. Since he experienced a progressive worsening of diarrhea associated with dyspnea, he was referred to our service. During patient evaluation, his parents mentioned intense sudoresis and salty sweat. Sweat chloride was tested and found to be 83.2 mEq/L. Appropriate treatment for CF was started (enzyme replacement, antibiotic therapy, oxygen therapy, physiotherapy) with a clear improvement of feces consistency, weight recovery and improved hair color. Conclusion: An early diagnosis of CF permits the identification and treatment of the pancreatic disease and of protein-calorie malnutrition, with a reduction of morbidity and mortality and of pulmonary involvement. It is important to analyze the signs and symptoms as a whole and not to consider only some clinical data even though, at first sight, they may be the most evident ones.
Bone mineral density in children and adolescents with type 1 Diabetes mellitus and screening-identified celiac disease

Daniel R. Diniz-Santos 1, Luis Adan 1, Flávia Brandão 1, Eliézer J. Vicente 1, Agnaluce Moreira 1, Luciana R. Silva 1

CEGHP -Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil

Objective: To evaluate the impact of clinically unrecognized celiac disease (CD) on the bone mineral density of pediatric patients with type 1 diabetes mellitus. Methods: Twelve children and adolescents with DM1 and screening-identified celiac disease were enrolled (six had silent CD [SCD]; six had potential CD [PCD]). SCD was defined by positive anti-tissue transglutaminase (anti-tTG) and endomysial (EMA) antibodies plus villous atrophy on duodenal biopsy. PCD was defined by positive anti-tTG and EMA serology plus HLA typing consistent with CD in the absence of villous atrophy. Twelve patients with DM1 and normal anti-tTG and anti-transglutaminase antibodies levels were enrolled as controls. Bone mineral density was measured by dual energy X-ray absorptiometry (DEXA) in all patients and both groups were compared to the controls and between themselves using Mann-Whitney and Fisher’s tests, as appropriate. Results: The three groups were comparable regarding age, sex, duration of DM1 and glycated hemoglobin levels. BMI (median, range) was –1.52 (–2.16 to 0.42) in patients with SCD, –1.28 (–3.49 to 0.43) in patients with PCD, and 0.14 (–1.15 to 1.27) in controls. The difference was statistically significant between SCD and controls (P<0.03) and between PCD and controls (P<0.05), but not between SCD and PCD (P=0.94). BMD < –1 was found in four (66.7%) patients with SCD (P<0.03 versus controls; P=1.0 versus PCD), three (50.0%) with PCD (P=0.08 versus controls) and one (8.3%) control. Discussion: DM1 is associated with impaired bone mineralization. Provided that patients with DM1 and SCD or PCD present lower BMD than their non-celiac peers, it is possible that unrecognized CD is an additional factor to prevent patients with DM1 to achieve their optimal peak bone mass. The statistically significant difference on the BMD between patients with PCD and controls suggest that the presence of CD-related antibodies might be a maker of an ongoing pathologic process rather than just the potential to develop it. Conclusion: Given the importance of optimal bone accrual in puberty, this finding may provide a rational basis for justifying the screening and early treatment of CD in patients with DM1.

Eosinophilic esophagitis: clinical and laboratorial manifestations of patients followed at a pediatric reference center for food allergy

Luciana M A Ribeiro 1, Daniela G M Oliveira 1, Vanessa Z C Frucchi 1, Antonio C Pastorino 1, Ana Paula B M Castro 1, Cristina M A Jacob 1

1) Allergy and Immunology Unit - Department of Pediatrics - Faculdade de Medicina - Universidade de Sao Paulo, Sao Paulo, Brasil

Summary:
Eosinophilic esophagitis (EoE) is a chronic inflammatory disease characterized by eosinophilic infiltration of the esophagus, without a known cause. EoE is an emerging disorder in pediatric practice and represents a diagnosis of exclusion. The aim of this study was to describe the clinical and laboratorial manifestations of patients followed at a pediatric reference center for food allergy. In this cohort, 42 patients were diagnosed with EoE. The median age at diagnosis was 6.6 years (range: 1.7 to 18.6). The male:female ratio was 1:1. The most common symptoms were dysphagia (76%), heartburn (12%), and vomiting (7%). Other symptoms included regurgitation (19%), respiratory symptoms (14%), and stridor (14%). The most common laboratory findings were eosinophilia (74%) and anemia (31%). The most common food allergens were cow milk (76%), egg (36%), soy (31%), and wheat (19%). The majority of patients (88%) showed a complete response to the elimination diet. The most common complications were stricture formation (15%), reflux symptoms (12%), and Barrett’s esophagus (3%). These findings highlight the importance of early recognition and treatment of EoE to prevent complications.
INTRODUCTION: Eosinophilic esophagitis (EE) is characterized by digestive clinical manifestations and the presence of high numbers of eosinophils (>15 high power field - HPF) in the esophagus mucosa. The estimated prevalence in childhood is 4.3:1000 and it has increased over the last 10 years. It is more common in boys (2/3 of cases), with variable clinical manifestations: vomiting, abdominal pain and food impactation among others. OBJECTIVE: To describe the clinical and laboratory findings of pediatric patients followed at Brazilian reference center for food allergy. PATIENTS AND METHODS: Thirteen of 158 food allergy patients fulfilled the criteria for EE and were submitted to a protocol including epidemiological, clinical and laboratory data. RESULTS: Thirteen children were evaluated (11 male) and at diagnosis, their age ranged from 3 mo to 133 mo (median of 37 mo). The most frequent clinical manifestations were: abdominal pain (n=9), vomiting (n=7), anorexia (n=4), alone or in association. The age of the first symptom ranged from 1 mo to 9 y (median 1 y), with a delay between the onset of clinical manifestations and the esophageal endoscopy about 2 years. Among all patients 10 presented allergic disease being rhinitis and asthma the most frequent and 9 received a previous GERD diagnosis with insatisfactory evolution. The endoscopy of 4 patients was compatible with EE (chronic esophagitis, thickened mucous, longitudinal grooves and whitish points). The IgE levels was higher than 120UI/L in 4 cases and eosinophilia >500 cels/mm3 was observed in only 3. Eight of twelve patients submitted to specific IgE presented sensitivity to one of more of the follow allergens: cow’s milk, soybean, cashew nut and white egg. One of the children presented a latex allergy with cross reactions for papaya, carrot and apple. CONCLUSIONS: The association with food sensitization was detected in this series and many patients with diagnosis of GERD done previously were observed. The symptoms of GERD and EE are similar and the lack of clinical symptoms improvement with usual anti-reflux treatment should be considered a warning sign for EE suspicion even in infants. The carefully diagnosis should be done with multiples samples of esophagus mucosa and evaluation of eosinophils count in the HPF.

P0330

Title: Gastrointestinal manifestations as initial presentation of acute leukemias in children and adolescents

Tereza Cristina Martins Vicente Robazzi 1, José Henrique S. Barreto 2, Núbia Mendonça 2, Luciana R. Silva 1
1) CEGHP-Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil
2) Pediatric Oncology Unit, Salvador, Brazil

Summary: Objective: To determine the prevalence and characteristics of the gastrointestinal manifestations on initial clinical presentation of acute leukemias (AL) in childhood. Methods: This is a retrospective and descriptive study that assessed medical records of 354 patients with AL from January 1995 to December 2004. Results: Acute lymphoid leukemia (ALL) has been diagnosed in 273 (77.1%) patients and acute non-lymphocytic leukemia (AML) in 81 (22.9%). There were 210 males (59.4%) and 144 females (40.6%). The most common presenting features were: abdominal pain (19.5% in ALL and 11.8% in AML), nausea and vomiting (14.9 in ALL and 14% in AML), abdominal distention (18.5 in ALL and 8.6% in AML; p 0.024), constipation (5% in ALL and 6.5% in AML), diarrhea (3.6% in ALL and 11.8% in AML; p 0.03%), and gastrointestinal bleeding (7.9% in ALL and 9.7% in AML). Ultrasound scanning was performed in 61.1% of the cases and hepatomegaly was found on 33.6% and esplenomegaly on 28.5% of the patients with AL. Seventy-seven (21.7%) and 15 (4.2%) patients received nonsteroidal anti-inflammatory drugs and glucocorticoids before AL was diagnosed. An association is well defined between abdominal symptoms such as nausea, vomiting and pain and the use of this therapy, but this association did not occur in this study. Conclusions: Gastrointestinal manifestations are not very well documented as initial manifestations of leukemia in children and should be considered on the differential diagnosis of gastrointestinal symptoms of unknown etiology in children.

P0331

Title: How the Otorrinolaryngology Exam can suggest the diagnosis of Gastroesophageal Reflux Disease

Luciana R. Silva 1, Pricilla Nunes Ortiz 1, Naraiana Nunes 1, Natasha Andrade Braça 2, Joseni S. Conceição 1
1) CEGHP-Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil
2) Otorrinolaringology Center of Portuguese Hospital, Salvador, Brazil

Summary: Objective: Describe the correlation of Otorrinolaryngology exams (OE) and the Gastroesophageal Reflux Disease (GERD). Methods: The exams of 72 patients from 0 to 19 years old were analyzed (mean 8, SD ±5,32) by The same Otorrinolaryngologist from 2002 to 2008. Chi-square test by SPSS 9.0 was used for statistical analysis. Results: Indications for OE were: repeated upper respiratory tract infection in 9 patientes (26.4%); repeated pneumonia (7.9%); stridor (5% in ALL and 6.5% in AML), diarrhea (3.6% in ALL and 11.8% in AML; p 0.03%), and gastrointestinal bleeding (7.9% in ALL and 9.7% in AML). Ultrasound scanning was performed in 61.1% of the cases and hepatomegaly was found on 33.6% and esplenomegaly on 28.5% of the patients with AL. Seventy-seven (21.7%) and 15 (4.2%) patients received nonsteroidal anti-inflammatory drugs and glucocorticoids before AL was diagnosed. An association is well defined between abdominal symptoms such as nausea, vomiting and pain and the use of this therapy, but this association did not occur in this study. Conclusions: Gastrointestinal manifestations are not very well documented as initial manifestations of leukemia in children and should be considered on the differential diagnosis of gastrointestinal symptoms of unknown etiology in children.
and treat GERD. Conclusion: GERD may be presented as atypical or hidden way and may be investigated by a group of specialists.

P0333

Title:
Pseudo-obstructive acute abdomen caused by strongyloidiasis in a child: case report

Paula Azi 2, Lara Torreão 1, Vinicius Cruz 2, Fábio Zattar Guêrios 2, Renata Cruz 2, Luciana R. Silva 1
1) CEGHP -Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil 2) Intensive Care Pediatric Unit Aliança Hospital, Salvador, Brazil

Summary:
Objective: To report an uncommon case of intestinal pseudo-obstruction caused by a massive Strongyloides stercoralis. Methods: Case report. Results: A 7-month-old previously healthy female patient was admitted to the pediatric intensive care unit because of refractory vomiting, irritability, abdominal distention and absence of elimination of gas and feces. She was hemodynamically stable, dehydrated and laboratory analysis revealed: pH 7.42, PCO2 41 PO2 49 HCO3- 26 Base excess +2, hemoglobin 9.4g/% hematocrit 30%, white blood cell count 7,700 (neutrophils 42%, lymphocytes 45%, monocytes 12%, eosinophils 1%) TGO 31, TGP 22, albumin 3.5mg/dL, FA 232, GGT 9, PCR <7, Na+ 136 mg/dL, K+ 3.6 mg/dL, lactate 1.1. A plain radiograph of the abdomen revealed liquid levels and the absence of air in the lower quadrants. After a rectal examination, the patient eliminated a large volume of feces and the abdominal distention ameliorates. A computed tomography scan ruled out surgical causes for the process and the patients remained asymptomatic on oral nutrition. Stool examination was positive for larvae of Strongyloides stercoralis. Specific anti-helminthic therapy was started. Discussion and Conclusion: Most cases of strongyloidiasis are asymptomatic, chronic and benign. Gastrointestinal and respiratory symptoms are the most frequent in symptomatic cases, but the disease may also evolve to a severe and disseminated picture. Disseminated strongyloidiasis has been increasingly recognized in immunocompromised patients, especially those taking corticosteroids continuously. Parasite-associated intestinal obstruction (or pseudo-obstruction) is generally caused by Ascaris lumbricoides, but strongyloidiasis has already been reported to cause intestinal obstruction and other severe complications such as acute colocolitis, bowel perforation, peptic ulcer, ulcerative colitis, toxic megacolon and pulmonary abscesses. We highlight that, in spite of the high prevalence of intestinal parasitoses in our country and of the frequency of obstructive pictures caused by them, it is very uncommon to observe an otherwise healthy, immunocompetent infant develop strongyloidiasis-induced intestinal obstruction.

P0334

Title:
COMBINED MULTICHANNEL INTRALUMINAL IMPEDANCE (MII) AND PH MONITORING IN THE EVALUATION OF GASTRO-ESOPHAGEAL REFLUX (GER) IN SYMPTOMATIC PRETERM NEWBORN

Luigi Corvaglia 1, Elisa Mariani 1, Arianna Aceti 1, Marianna Ferlini 1, Barbara Battistini 1, Giacomo Faldella 1
1) Department of Preventive Pediatrics and Neonatology - S.Orsola-Malpighi Hospital - University of Bologna, Bologna, Italy

Summary:
Objective: GER is common in preterm newborns. MII is a new technique able to detect GER episodes as electrical impedance changes inside esophageal lumen. Combined MII-pH monitoring allows the detection of acid and non-acid GER episodes and could be useful in preterm newborn whose gastric pH is often buffered by frequent milk meals. We aimed to describe GER features in preterm newborns with symptoms of GER, and to highlight differences in GER detection between MII and combined MII-pH monitoring. Methods: Fifty-three preterm newborns (mean GE 29ws, range 24-33 weeks; mean BW 1283g, range 500-2250g) having frequent regurgitations and/or post-prandial desaturations underwent 24-h recording of simultaneous MII/pH-monitoring. For each infant, we calculated the number and the duration of GER episodes detected by pH monitoring and by MII: MII-detected episodes were then divided into acid and non-acid according to pH value. Results: The mean number of pH-detected episodes was 53.11; MII detected a mean of 53.13 episodes (acid: 12.85; non acid: 41.83). Mean acid esophageal exposure was 11.23% (0.45% detected by MII and 10.79% by pH-monitoring), while mean non-acid esophageal exposure was 2% (detected only by MII). Conclusions: Combined MII-pH monitoring represents the best choice to diagnose GER in preterm newborn, allowing the detection of a significantly higher number of GER episodes than MII alone. pH monitoring can detect all the acid GER. MII monitoring can also recognize non-acid episodes reaching the second electrical dipole (4.45 cm above LES): its major limitation is the incapability to detect short segment non-acid episodes. This limitation is relevant in preterm newborn, whose esophageal length is usually between 6 and 10 cm: for this reason, the incidence of non-acid episodes and the exposure of distal esophageal mucosa to non-acid GER risk to be significantly under-considered. Thus, in preterm newborn we suggest the combined use of MII and pH monitoring; we also suggest MII software to be further improved to be able to detect also short segment non-acid episodes.
Title: EVIDENCE OF A TEMPORAL RELATIONSHIP BETWEEN GASTROESOPHAGEAL REFLUX AND APNEA IN VERY PRETERM INFANTS:

Luigi Corvaglia 1, Arianna Aceti 1, Elisa Mariani 1, Monica Spizzichino 1, Vittoria Paoletti 1, Giacomo Faldella 1
1) Department of Preventive Pediatrics and Neonatology - S.Orsola-Malpighi Hospital - University of Bologna, Bologna, Italy

Summary:
Objective GER is common in preterm newborn, due to some promoting factors such as the almost fixed lying position, the large fluid enteral intake, the frequent nurse handling and the use of permanent feeding tubes. Twenty-four-hour pH-monitoring, which recognizes GER episodes as a pH drop <4, has traditionally represented the gold standard for GER detection, but it is unable to identify non-acid GER episodes. Multichannel intraluminal impedance (MII) is a new technique which detects GER episodes as electrical impedance changes occurring inside esophageal lumen. It can also identify the height reached by each GER episode above LES. Combined MII-pH monitoring allows the detection of both acid and non-acid GER episodes, and thus it can be useful in preterm newborns whose gastric pH is often buffered by frequent milk meals. The first therapeutical choice for GER treatment in newborn is conservative (diet and/or postural treatment). Pharmacological options have not been enough tested in newborn and have shown some important side effects. At present, Sodium alginate (Gaviscon®) is used in child, but there are no available data about its efficacy in newborn. The aim of our study is to test by combined MII-pH monitoring the effect of Gaviscon® on GER characteristics in preterm newborns.

Methods Twelve preterm newborns (GE<33 weeks) with symptoms attributable to GER (frequent regurgitations, post-prandial apneas) underwent a 24-hour recording of combined MII-pH monitoring. During the study period, they were fed 8 times, and received Gaviscon® after 4 meals (1st, 3rd, 5th, 7th). GER characteristics in the post-prandial periods with drug administration were compared with those of the four drug-free post-prandial periods. Results After Gaviscon® administration we detected a mean number of 23.2 acid GER and 21.4 non-acid GER, and a mean duration of 2076.2 sec for acid GER and of 492.1 sec for non-acid GER. In the drug-free periods we detected a mean number of 32 acid GER and 21.8 non-acid GER, and a mean duration of 3163.4 sec for acid GER and of 547 sec for non-acid GER. The difference was not statistically significant. Conclusions In our study, Gaviscon® reduces the frequency and the duration of GER episodes, without statistical significance. The study population needs to be enlarged in order to confirm this result.

P0336

Title: EFFICACY OF SODIUM ALGINATE IN REDUCING APNEA RELATED TO GASTROESOPHAGEAL REFLUX IN PRETERM INFANTS EVALUATED BY pH-IMPEDEANCE INTRALUMINAL MONITORING AND POLISOMNOGRAPHY

Luigi Corvaglia 1, Daniele Zama 1, Silvia Gualdi 1, Valentina Alberghini 1, Monica Spizzichino 1, Giacomo Faldella 1
1) Department of Preventive Pediatrics and Neonatology - S.Orsola-Malpighi Hospital - University of Bologna, Bologna, Italy

Summary:
Objective Gastroesophageal reflux (GER) and apnea of prematurity (AOP) are two clinical events that commonly occur in preterm infants. The existence of a causal relationship is still controversial. Our recent data highlight an increase of apnea frequency in the period after a GER, suggesting that AOP can be temporally related to GER. Aim of this study is to evaluate the efficacy of sodium alginate (Gaviscon®) in reducing frequency of AOP related to GER in preterm infants. Methods Twelve preterm infants (GA:28+3 wks; BW=1124g) were studied as they had recurrent apneas. Newborns suffering from sepsis, NEC, intraventricular haemorrhage or major congenital abnormalities were ruled out. They underwent a 6-hour simultaneous and synchronized recording of polysomnography and pH-impedance monitoring (pH-MII). Polysomnography detects and characterizes apneas, by recording of breathing movement, nasal airflow, electrocardiogram, pulse oximeter saturation and videoregistration. All respiratory events, characterized by the presence or the absence of the treatment with sodium alginate (2cc/kg) after the meal. Data registered during the two post-prandial periods (with or without treatment) were compared. Results During the 72 hours of registration we found 373 apneas (207 CA, 127, MA, 39 OA) and 385 GERs. Comparing data found after the treatment with those registered during free-treatment periods we found no differences in number of total apneas, type of apnea and related events. A non significant reduction in the number of GERs after the use of Sodium Alginate was observed, mostly related to acid episodes. Conclusions Preliminary data suggest that Sodium Alginate reduces the number of GERs, in particular the acid ones, but not significantly. We observed that the frequency of respiratory events do not change after the treatment with Sodium Alginate. These data can be explained by the poor efficacy in reducing non acid GERs, particularly relevant in preterm infants.

P0337

Title: EVIDENCE OF A TEMPORAL RELATIONSHIP BETWEEN GASTROESOPHAGEAL REFLUX AND APNEA IN VERY PRETERM INFANTS:
EVALUATION BY SIMULTANEOUS COMBINED MULTICHANNEL INTRALUMINAL IMPEDANCE AND PH-MONITORING (pH-MII) AND POLYSOMNOGRAPHIC STUDY

Luigi Corvaglia 1, Daniele Zama 1, Silvia Gualdi 1, Elisa Mariani 1, Arianna Aceti 1, Giacomo Faldella 1
1) Department of Preventive Pediatrics and Neonatology - S.Orsola-Malpighi Hospital - University of Bologna, Bologna, Italy

Summary:
Objective Apnea of prematurity (AOP) is a perplexing disorder of respiratory control, very common in preterm infants. Both gastroesophageal reflux (GER) and apneas frequently occur during post-prandial period but the existence of a relationship is still controversial. Aim of our study is to evaluate the temporal linkage between GER and AOP. Methods Twenty-six preterm infants (GA≤32 weeks; mean BW=1247g) were studied as they had recurrent apneas. They underwent a 6-hour simultaneous and synchronized recording of polysomnography and pH-impedance monitoring (pH-MII). Polysomnography detects and characterizes apneas, by recording of breathing movement, nasal airflow, electrocardiogram, pulse oximeter saturation. All apnoeas lasting more than 5 seconds were considered and classified as central (CA), obstructive (OA) and mixed apnea (MA). pH-MII is the state-of-the-art methodology for GER detection in preterm newborns. By pH-MII monitoring we registered acid/non acid GER, swallows (antegrade flow inside the esophagus) and impedance decrease in the distal couple of electrodes (suspected to be short non-acid GER: SGER). GER and apnea were considered temporally related if both started within 30 seconds of each other. Results One-hundred-fifty-four events, out of 1136 apneas and 1065 GER, were temporally related. Frequency of apnea during the one-minute time around the onset of GER was significantly higher than the one detected in the GER-free period (p=0.03). Moreover, frequency of apnea in the 30-seconds after GER was greater than that detected in the 30-seconds before(p=0.01) Fig1. Conclusion Our data show that AOP can be temporally related to GER. They add scientific evidence to the clinical perception of a causal relationship. Thus we suggest a conservative or pharmacological treatment for GER to be attempted in very preterm infants with AOP.

P0338

Title:
ESOPHAGEAL IMPEDANCE-PH MONITORING IN PEDIATRIC PATIENTS

Daniel González-Santana 1, Luis Peña-Quintana 1, Juan Carlos Ramos-Varela 1, Ramiro Rial-González 1, María Jiménez-Toledo 1, Pilar Bas-Suárez 1
1) Unit of Pediatric Gastroenterology and Nutrition. Complejo Hospitalario Universitario Insular Materno-Infantil, Las Palmas, Spain

Summary:
BACKGROUND Multichannel intraluminal impedance (MII) depends on changes in resistance to alternating current between two metal electrodes produced by the presence of liquid or gas bolus inside the esophageal lumen. Combined twenty-four-hour multichannel intraluminal impedance and pH (MII-pH) esophageal monitoring allows detection of acid, weakly acidic and non-acid reflux episodes. OBJECTIVE To describe the preliminary results using MII-pH to study gastroesophageal reflux in pediatric patients in our hospital. PATIENTS AND METHODS Eighteen patients (12 males and 6 females, aged 9 months to 11 years) with suspected gastroesophageal reflux (GER) underwent 24-hour esophageal pH-impedance monitoring (Sleuth Monitoring System, Sandhill). Vandenplas Composite Score was used for infants aged 0-11 months, Boix-Ochoa Composite Score for children aged 12 months-9 years, and DeMeester Score for older than 9 years. A symptom index (SI) more than 50% was considered for a significant association between symptoms (cough, regurgitation, pyrosis) and reflux events. RESULTS Nine patients (50%) were referred with typical GER symptoms, and other 9 (50%) presented atypical symptoms (chronic cough, dysphonia, asthma). Pathologic percent time distal pH<4 and pathologic score (Vandenplas, Boix-Ochoa or DeMeester) were found in 7 patients (39%). Although all the patients had non-acid refluxes, in 3 patients (17%) non-acid percent time was longer than acid percent time. Three patients (17%) had a positive SI for cough (one of them with predominant non-acid refluxes), 3 patients (17%) had a positive SI for regurgitations and 5 patients (28%) for pyrosis. CONCLUSION Non-acid refluxes were more frequent than acid ones in 17% of patients, and they allow the diagnosis of one case of GER with atypical symptoms. -MII-pH provides more information about the composition and pH of reflux episodes and improve the diagnosis of GER.

P0339
Title: Is always necessary an intestinal biopsy for the diagnosis of Celiac Disease?

Ortigosa L 1, González M 1, Castro V 2, Vázquez C 3, Aguirre-Jaime A 4
1) Universitary Hospital Ntra Sra de Candelaria - Pediatric Gastroenterology Unit, Tenerife, Spain 2) Universitary Hospital Ntra Sra de Candelaria - Pathology Department, Tenerife, Spain 3) Universitary Hospital Ntra Sra de Candelaria-Biochemistry and Allergy-Immunology Department, Tenerife, Spain 4) Universitary Hospital Ntra Sra de Candelaria-Research Unit, Tenerife, Spain

Summary: Background and aim. Current diagnostic criteria for the diagnosis of Celiac Disease (CD) strongly recommend a small bowel biopsy to confirm the suspicion [1]. The aim of our study is to evaluate if intestinal biopsy should be avoided in specific cases of children with classic CD clinical presentation, and in certain on-risk groups for CD (first-degree relatives [FDR-CD] or subjects with associated and/or autoimmune related diseases), using in combination with positive determination of HLA DQ2/DQ8, serologic CD markers, and good response (both clinical and serological) to gluten withdrawal. Patients and methods. Retrospective study, including 165 children and adolescents (1-19) years old, 62% female, with intestinal biopsy performed because CD suspect, and determinations of CD clinical manifestations, associated diseases, serologic CD markers, HLA DQ2/DQ8 and response to gluten withdrawal. The diagnostic rule to proof was (CD clinical manifestation or CD related diseases) and (positive antidiomendism [EMA] and/or positive antitansglutaminase [TGAl) antibodies) and (Major histocompatibility complex class II antigens HLA DQA1*0501-DQBI*02 (DQ2) or DQA1*0301-DQB1*0302 (DQ8) or DQ2/DQ8) using the intestinal biopsy results as gold standard. Negative predictive value (NPV), sensitivity (Se), false negative (FN), positive predictive value (PPV), specificity (Sp) and false positive (FP) for clinical rule were estimated. All calculations were performed with SPSS 15.0 software statistical package. Results. According to intestinal biopsy results 158 patients suffer CD and 7 not. Independently applying the clinical diagnostic rule 156 patients were CD classified and 9 not. The validity characteristics of the rule were: NPV Se 78% 99% 1% 100% 100% 0% Summary and conclusions. Children showing classic CD clinical presentation, and in certain on-risk groups for CD, such as first-degree relatives (FDR-CD) or subjects with associated and/or related autoimmune diseases, with positive HLA DQ2/DQ8 and positive serologic CD tests (antiendomiasium and/or antitansglutaminase antibodies), and with a good response to gluten withdrawal (negativization of CD antibodies, and clinical recovery in those with clinical symptoms), CD diagnosis should be confirmed without needing an intestinal biopsy. More extensive studies are necessary in larger paediatric and adult population in order to corroborate this conclusion and new revised diagnostic Criteria

P0340

Title: Cholelithiasis, Choledocholithiasis and Sludge in Children

Susana Petit de Alfieri 1, Susana Petit de Alfieri 1, Mabel Zacur de Jiménez 1, Mabel Zacur de Jiménez 1, Hugo Arza 1, Hugo Arza 1, Liliana Laman 1, Liliana Laman 1, Alfredo Recalde 1, A Recalde 1
1) Departamento de Pediatría Hospital Nacional Itauguá, Itauguá, Paraguay

Summary: Introduction: Cholelithiasis and sludge, once considered uncommon in infants and children, currently are being diagnosed more frequently. Therefore it is important to Pediatricians to know more about the clinical presentation and predisposing factors of these entities in this age group. Objective: To present the experience on cholelithiasis and sludge in children and adolescents of a Pediatric unit. Method: Retrospective analysis of clinical records of all patients (1month to 16 years of age) with Cholelithiasis, Choledocholithiasis and/or Sludge, diagnosed at the Department of Pediatrics, Hospital Nacional de Itauguá, Paraguay, between 1998 and 2006. Results: Thirty five patients with Cholelithiasis, Choledocholithiasis and/or Sludge were found, mean age 9 years, 19/35 (54.2%) were >10 years of age and 8/35 (22.8%) < 36 months. F/M: 21/14 (F/M ratio 1.5/1). 29/35 (82.8%) had cholelithiasis, mean age 9.1 years (17 multiple and 12 single stones) 9/35 (25.7 %) had sludge (mean age 6.1 years), 3/35 patients had Choledocholithiasis and sludge, and 3/35 also had Choledocholithiasis. Abdominal pain was present in 26/35 (74.2%) (right upper quadrant 12/26, epigastrum 8/26, non specified or generalized 6/26), postprandial abdominal pain 11/26 (42.3%); Vomiting 13/35 (37.1%), Nausea 7/35 (20%), Fever 7/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaundice 5/35 (14.2%). In 4/35 diagnosis was an ultrasound finding. Laboratory tests: leukocytosis and neutrophilia 7/28 cases, mild anemia 6/28, raised transaminase levels 9/20; elevated conjugated bilirubin 5/11, hyperamylasemia 5/12, hyperamylasuria 4/12. Nutritional state: 25/35 (20%), jaun...
Title: Prevalence of IgA Tissue Transglutaminase Antibody in relatives of Coeliac Patients in Paraguay

Idalina Dalles de Semidei 1, Maria Elena Chamorro de Aguiler 1, Raul Real Delor 1, Mabel Zacur de Jiménez 2, Susana Petit de Alfieri 3, Lidia Garcele de Aguer 2

1) FUPACEL, Asuncion, Paraguay 2) FCM Universidad Nacional de Asunción, Asunción, Paraguay 3) Hospital Nacional- Itaugua, Itaugua, Paraguay

Summary: Introduction: Coeliac Disease is a common autoimmune condition, characterized by a gluten induced enteropathy in genetically susceptible persons. The clinical presentation of the disease can range from classic malabsorption syndrome to silent disease. The detection of these asymptomatic forms is recommended, particularly in certain risk groups like relatives of known coeliac patients. Objective: 1- To determine the prevalence of IgA Tissue Transglutaminase Antibody (IgA tTGAb) in relatives of coeliac disease patients. 2- To determine the frequency of selective IgA deficiency in the same group. Method: Prospective cross sectional study that includes 595 subjects, first and second degree relatives of known coeliac patients, mean age 27.2 ± 19.2 years, (range 1 - 85 years of age), M/F: 246/349, who accepted to participate in the annual screening test for coeliac disease offered to relatives, by the Coeliac´s Paraguayan Foundation (FUPACEL) from year 2003 to 2007. The presence of serum IgA tTGAb was measured by ELISA (The Binding Site LTD, England) and the level of serum IgA by radial immunodiffusion (The Binding Site LTD, England) Results: Forty six positive cases were found ((IgA tTGAb>4 U/ml) yielding a prevalence of 7.7%. Eighty-four percent of positive cases were female (p ≤ 0.001 Chi 2 test). Ten subjects had serum IgA levels below normal range for age (< 22mg/dl in <12years of age and <70 mg/dl in adults), prevalence of selective IgA deficiency 1.6%. Conclusion: The prevalence of IgA tTGAb in first and second degree relatives of known coeliac patients was high. Autoantibodies were more frequent en females than in males. Selective IgA deficiency was detected in a small number of cases. Screening for celiac disease in relatives is frequently done using just one serologic marker, usually of the IgA subclass. Testing simultaneously for Selective IgA deficiency avoids false negative results in this high risk, often asymptomatic group.

P0342

Title: The frequency and distribution of NOD2/CARD15 gene polymorphisms in children with Crohn disease and their families.

Maciej Dadalski 1, Jaroslaw Kierkus 1, Piotr Socha 1, Hartmut Schmidt 2, Jozef Ryzko 1, Jerzy Socha 1

1) The Clinic of Gastroenterology, Hepatology and Immunology, Children’s Memorial Health Institute, Warsaw, Poland 2) Transplantationshepatologie, Universitätsklinikum Münster, Münster, Germany

Summary: Background: The presence of NOD2/CARD15 gene polymorphisms seems to be a risk factor of Crohn disease (CD). There is very limited data concerning their frequency in Poland. Aim: The aim of the study was to assess the frequency and distribution of NOD2/CARD15 gene polymorphisms in children with CD and their families and to compare them to control group. Patients and Methods: 69 children with CD, 72 their healthy parents and 29 their healthy siblings were involved to the study. The control group was 32 healthy volunteers with no family history of CD. They all had molecular test for presence of three (SNP13 3020insC; SNP8 R702W; SNP12 G908W) NOD2/CARD15 gene polymorphisms performed. Results: The presence of NOD2/CARD15 gene polymorphisms was detected in 32 (46%) patients with CD, in 36 (50%) parents (NS vs. patients), in 18 (62%) siblings (NS vs. patients) and in 2 (6%) healthy volunteers (p<0.05 vs. patients). 34 alleles 3020insC, 4 G908W and 5 3020insC were found in patients with CD and respectively: 31, 2 and 4 in parents; 15, 2 and 2 in siblings; 1, 1 and 0 in control group. Two alleles with polymorphisms present were found in 11 patients, 0 parents (p<0.05 vs. patients), 1 sibling (NS vs. patients) and 0 volunteers (p<0.05 vs. patients). Conclusions: 1. The frequency of NOD2/CARD15 gene polymorphisms in polish patients with CD is high and similar to that observed in other countries in Middle Europe (Hungary – Bene et al. 52%). 2. The presence of NOD2/CARD15 gene polymorphisms facilitates CD development. 3. The presence of more than one NOD2/CARD15 gene polymorphisms is a risk factor of CD.

P0343

Title: The frequency and distribution of NOD2/CARD15 gene polymorphisms in children with ulcerative colitis and their families.

Maciej Dadalski 1, Jaroslaw Kierkus 1, Piotr Socha 1, Hartmut Schmidt 2, Jozef Ryzko 1, Jerzy Socha 1

1) The Clinic of Gastroenterology, Hepatology and Immunology, Children’s Memorial Health Institute, Warsaw, Poland 2) Transplantationshepatologie, Universitätsklinikum Münster, Münster, Germany
Summary:
Background: The presence of NOD2/CARD15 gene polymorphisms seems to be a risk factor of inflammatory bowel diseases. There is very limited data concerning their frequency in Poland. Aim: The aim of the study was to assess the frequency and distribution of NOD2/CARD15 gene polymorphisms in children with ulcerative colitis (UC) and their families and to compare them to control group. Patients and Methods: 66 children with UC, 84 their healthy parents and 16 their healthy siblings were involved to the study. The control group was 32 healthy volunteers with no family history of UC. They all had molecular test for presence of three (SNP13 3020InsC; SNP8 R702W; SNP12 G908W) NOD2/CARD15 gene polymorphisms performed. Results: The presence of NOD2/CARD15 gene polymorphisms was detected in 14 (21%) patients with UC, in 16 (19%) parents (NS vs. patients), in 2 (13%) siblings (NS vs. patients) and in 2 (6%) healthy volunteers (NS vs. patients). 9 alleles 3020InsC, 4 G908W and 1 3020InsC were found in patients with UC and respectively: 13, 2 and 1 in parents; 1, 1 and 0 in siblings; 1, 1 and 0 in control group. No patient had more than one allele with polymorphisms present. Conclusions: 1. The presence of NOD2/CARD15 gene polymorphisms seems not to be a risk factor of UC.

P0344
Title: PRIMARY INTESTINAL LYMPHANGECTASIA: DIAGNOSIS BY VIDEO CAPSULE ENDOSCOPY; A CASE REPORT
MAHER AL HATLANI 1, ROBERT(BOB)ISSENMAN 1
1) McMASTER MEDICAL CENTER, HAMILTON,ONTARIO, CANADA
Summary:
Introduction: Intestinal lymphangectasia(IL) is a congenital, acquired or inherited disorder of the lymphatic vessels associated with protein-losing enteropathy. Primary lymphangiectasia is less well understood. Endoscopic examination and duodenal biopsy are the standard criteria for the diagnosis; the use of video capsule endoscopy (VCE) in pediatric patients has been documented in only a few cases. Case scenario: We describe an 8 year old girl who had abdominal pain and diarrhea for 8 months associated with lower limb edema. Pertinent laboratory finding were: WBC: 4.8x10, lymphocytes: 0.2x10, albumin: 17g/l, IgA: 0. 4g/l, IgG: 2.0g/l, TSH: 6.8mu/l, freeT3: 5.14(n), antiendomysial antibodies were negative, normal renal function test and electrolytes, urine analysis was negative for proteinuria. 72 hour fecal fat collection yielded a fat content of 7.6 g/day, fecal alpha1antitrypsine was elevated: 299, small bowel follow through showed mild to moderate thickening of mucosal folds in the proximal and mid jejunum. UGI endoscopic biopsies were normal, colonic biopsies showed non-specific inflammation. Low fat, high MCT diet was initiated, and supplemented with parenteral nutrition. Video capsule endoscopy was done 10 days later. White opaque spots on jejunal mucosa indicated dilated lacteal vessels. The serum albumin level increased to 35g/l, diarrhea resolved, and lower limb edema improved after three weeks of dietary treatment and parental nutrition. Conclusion: Video capsule endoscopy provided images of the entire small bowel, and confirmed the diagnosis of intestinal lymphangectasia in the absence of the ability to obtain mid gut specimens.

P0345
Title: Free gluten diet with out of intestinal Biopsies
Mahmoud Bozo 1
1) Damascus Hospital, Damascus, Syria
Summary:
Objective many clinicians are trying to put the diagnosis of the celiac disease (CD)and start free gluten diet(FGD)avoiding the intestinal biopsy(IB) for different reasons. study objective is to analyze this cases and confirm the essential role of the IB in the diagnosis ,and determine the frequency of the CD in this situation. Material and method 3 years perspective study of, patients under FGD with no IB were followed, the diets were stopped for 3 months at least, growth and antiendomysial antibodies(AEmysA)were controlled at the end of the follow up. The IB was applied in case of positive antibodies or of growth curves retardation( even if the AEmysA are negative). Results 44 patients,25 males,19 females. 65.9% were 12-39 months of age , the rest were distributed in all other ages from 6 months to 11 years. the diarrhea was the symptom in 16 cases,failure to thrive 10cases,and other symptoms (abdominal pain,recurrent diarrhea,abdominal distension). The FGD was based on the D.Xylose test in blood in 24cases, AEmysA in 2 cases, intestinal radio in 3 cases, stool analysis in 4 cases,in the other 11cases there were no tests for the diagnosis and the diets were started based on the clinical symptoms. Regarding the duration of the FGD: 37.5% were more than 12months(from 1-48 months),the rest were for less than 12 months . management After consultations in pediatric gastroenterology : FGD was arrested in 33 patients for 3 months, 5 patients for 4 months, 6 patients for 6-12months. At the end of the follow up,26 cases ameliorated there essential low weight, all of them were AEmysA negative,weight growth continued the same normal level orientation in 16 cases and all of them are AEmysA negative,all of this patients were considered as non celiac patients (41 or 93.2%). The celiac diagnosis was puted in 3 cases (6.8%),in 2cases there was weight curve retardations in association with negative AEmysA (the CD diagnosis is based on IB in this 2 cases and the patients are under challenge test ).In one case The AEmysA is positive with normal growth during the follow up, the celiac diagnosis was confirmed by IB in this case. The diarrhea was not detected in any case after the diet
P0346

Title: Lactobacillus acidophilus yogurt in children with acute diarrhea: A clinical trial

Rafeey M 1, Ostadrahimi A 2, Boniadi M 2
1) Liver and Gastrointestinal Diseases Research Center, Tabriz University of Medical Sciences, TABRIZ, IRAN 2) Tabriz University of Medical Sciences, TBRIZ, IRAN

Summary: Objective: Acute gastroenteritis is a major cause of children morbidity and mortality worldwide. Probiotics like lactobacillus acidophilus (L. ACIDOPHILUS) may be beneficial in treatment of acute diarrhea. This study aimed at comparing the effects of yogurt fermented by L. ACIDOPHILUS (L. ACIDOPHILUS yogurt), L. ACIDOPHILUS supplement, conventional yogurt and placebo added to routine fluid therapy in children with acute non-bloody diarrhea. Methods & Materials: In a randomized clinical trial, one hundred sixty children with acute diarrhea admitted in Tabriz Children Hospital were assessed in a clinical trial. They were randomized in 4 groups: group A received 300 g/day of yogurt fermented by lactobacillus acidophilus, group B received 2 capsules/day of lactobacillus acidophilus supplement, group C received 300 g/day of conventional yogurt and group D received placebo material (control group). The standard fluid therapy was administered in all patients. Age, sex, duration of diarrhea before admission, weight on admission and discharge and its change, frequency of stool passing on days 1, 2 and 3 post-admission and their changes, type of diarrhea, signs and symptoms on admission and day 3 and duration of hospital stay were determined in each patient. Results: One hundred (62.5%) males and 60 (37.5%) females, with the mean age of 18.36±6.47 (12-48) months enrolled in the study. Four groups were matched considering the baseline characteristics. The mean frequency of stool passing on day 3 post-admission and the mean amount of decrement in stool passing frequency 72 hours after hospitalization were significantly higher and lower in group A, respectively (p=0.015 and 0.029, respectively). Dehydration rate on day 3 was significantly lower in groups A and B (p<0.001). The mean duration of hospital stay was significantly shorter in group B (p=0.037). Conclusion: L. ACIDOPHILUS yogurt and L. ACIDOPHILUS supplement would diminish the severity of acute non-bloody diarrhea in children.

P0347

Title: Acute Non-outbreak Shigellosis: 10 Years Experience in Southern Taiwan

Mao-Meng Tiao 1, Chi-Hung Wu 2, I-Fei Huang 3, Jien-Wei Liu 4, Kao-Pin Hwang 1
1) Department of Pediatrics; Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan 2) Department of Pediatrics, Chang Gung Memorial Hospital, Chiayi, Taiwan 3) Department of Pediatrics, Kaohsiung Veterans General Hospital, Kaohsiung, Taiwan 4) Department of Internal Medicine, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan

Summary: Aim: We conducted a retrospective study of shigellosis for both the clinical and laboratory characteristics in Southern Taiwan. Methods: We collected the shigella dysentery cases at Kaohsiung Chang Gung Memorial Hospital and Kaohsiung Veterans General Hospital from 1996 to 2005. Fifteen children and twelve adults were enrolled and their clinical presentations analyzed. Results: Patients with watery diarrhea group were prevalent (63.0%) in this study. Although C-reactive protein (CRP) level was higher in patients with bloody diarrhea than those with watery diarrhea (123.5 ± 73.4 mg/L vs. 40.5 ± 36.7 mg/L, p=0.005). However, there was no significant difference for duration of hospital stay (p=0.072) and total fever days (p=0.981) between these 2 groups. The white blood cell (WBC) and neutrophil counts were significantly lower in Shigella flexneri (S. flexneri) than Shigella sonnei (S. sonnei) enterocolitis (p=0.038 and p=0.001). The WBC count lower than 13,500/ mm3 (OR=3.17, 95%CI: 1.63-6.14, p=0.005) and neutrophil count lower than 9,400/ mm3 (OR=12.00, 95%CI: 1.63-6.14, p=0.005) were more likely to be encountered in infections caused by S. flexneri than S. sonnei. The resistance to trimethoprim-sulfamethoxazole (TMP-SMX) was the highest (56%), and ampicillin (28%) the second. There was no significant difference between children and adults in total fever days (p=0.532), incidence of bloody diarrhea (p=1.000), WBC count (p=0.177), CRP level (p=0.858), and the duration of hospital stay (p=0.734). Conclusion: Shigellosis should be considered for patients with watery diarrhea even without contact history. There was a lower blood WBC and neutrophil counts in S. flexneri than in S. sonnei enterocolitis. The use of TMP-SMX and ampicillin should be cautious because of high resistance. There was no specific difference between children and adults with shigellosis in clinical and laboratory presentations.
Title: Efficacy of Biological Therapy in CD and UC in Children and Adolescents at a Brazilian Reference Center.

Maraci Rodrigues 1, Aderson O.M.C Damião 1, Andre Z.A Leite 1, Carmen L.Ortiz-Agostinho 1, Maria Laura L.Lordello 1, Aytan M.Sipahi 1
1) Clinical Gastroenterology Departmen HCFMUSP, São Paulo, Brazil

Summary:
Prevalence of IBD in Brazil is lower when compared with the USA and European countries. This work aimed at evaluating the indication, efficacy and time of efficacy related to the type of disease (CDAI and Lichtiger Index), associated drugs and Infliximab collateral effects. All patients underwent PPD and chest Rx, pre-medication (corticoids and diphenidramine) and Infliximab (5 mg/Kg/dose). Infliximab indications: inflammatory disease (24%), fistula disease (31%), growth alterations (3.4%), steroid dependence (24%), steroid unresponsiveness (10.2%), intense bleeding (3.4%), pyoderma gangrenosum (3.4%). The majority had previously taken aminosalicylate, corticosteroid, azathioprine and antibiotics; 9 out of 25 had been submitted to surgery before. Infliximab was discontinued due to: elective choice (11), loss of efficacy (1), lack of primary response (2) (1 UC was indicated to colectomy and one CD to Methotrexate and Adalumimab after 1 year), allergic reaction (1) during a 45 month follow-up period. All patients received azathioprine (0.25 to 3.4 years)) and 3 out of 29 needed to repeat corticosteroid use. One out of 4 after receiving Infliximab for more than 36 months did not present a clinical response (replaced by Adalumimab) and another with CD received Infliximab associated with Granulokine. Complemented data described in the Table above. Conclusion: Despite the multiracial features and environmental adversities, our response to Infliximab was similar to Literature, although pulmonary Tb prevalence (1 case) is higher, since this disease prevalence is also higher in our society.

P0349

Title: Efficacy of Biological Therapy with Infliximabe (IFX) in Adolescents Quality of Life with Inflammatory Bowel Disease (IBD) at a Brazilian Reference Center.

Maraci Rodrigues 1, Maria Fernanda DÁmico 1, Fátima R. Pâtino 1, Camila Ortiz-Prospero 1, Ieda Nishitokukado 1, Fabiana M.Santos 1
1) Department of Clinical Gastroenterology, São Paulo, Brazil

Summary:
Introduction: IBD can cause strong negative impact in quality of life, meanly when the incidence is during the adolescence period, then we need to introduce therapeutics approaches to improve patient’s life. Objective: We evaluated the impact of IFX therapy in adolescents Health Survey with IBD. Casuistic and Method: 15 IBD patients of Gastroenterology Outpatient, the begining age of disease (years) was 12.06±3; diagnostic age (years) 12.53±7; actual age (years) 16.66±1; male 8 and female 7. A modified Medical Outcome Study 36 Item Short Form Health Survey questionnaire (IBDQ) in Portuguese, divided in 4 domains: gastrointestinal, systemic, social and emotional, was used. The questionnaire was always applied by the same interviewer and shown information from the pre- and pos-IFX (5mg/Kg) induction period. The PCDAI and Lichtiger indexes were calculated to CD and UC patients respectively. Results: All patients stopped the corticoid use in about 10 ±months (m±sdv) and followed using Azathioprine. A clinical remission in 6 of 15 patients, one UC, was observed in a period of 0 to 43 months after IFX induction; 6 of 15 patients became better and 3 of 15 patients did not improve in disease activity. There was a significative improvement (p<0.01) in all analyzed IBDQ domains. Conclusion: A quality-of-life improvement associated with disease activity indexes was observed for IFX therapy in adolescents with IBD to almost all of patients.

P0349-Table:

<table>
<thead>
<tr>
<th>Domain</th>
<th>Pre-IFX Mean</th>
<th>Pre-IFX SD</th>
<th>Post-IFX Mean</th>
<th>Post-IFX SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intestinal Domain</td>
<td>35.46±9.83</td>
<td></td>
<td>60.93±9.67</td>
<td></td>
</tr>
<tr>
<td>Systemic Domain</td>
<td>14.6±2.86</td>
<td></td>
<td>16.66±5.22</td>
<td></td>
</tr>
<tr>
<td>Emotional Domain</td>
<td>20.53±6</td>
<td></td>
<td>29.06±8.62</td>
<td></td>
</tr>
</tbody>
</table>

P0350

Title: A Trend Towards Shorter Time Intervals in Maintenance Infliximab Therapy after Multiple Infusions in Children with...
Crohn’s Disease
Marc Virjee 2, Staffan Eksborg 1, Hans Hildebrand 1, Lena Grahnquist 1
1) Department of Woman and Child Health, Karolinska Institutet, Stockholm, Sweden 2) Karolinska Pharmacy, Karolinska University Hospital, Stockholm, Sweden

Summary:
Objectives. The aim of this study was to investigate the effect of dosage interval of infliximab infusions on the clinical outcome of pediatric Crohn's disease (CD). Methods. Retrospective analysis of medical records of all pediatric patients with CD who had received infliximab since 1999 in two Swedish counties. Results. 29 patients were included in the study. Median age was 12.4 years at diagnose (range 3.2-16.9) and 15.3 years (range 8.1-18.7) at start of infliximab therapy. Time between diagnose and start of infliximab therapy ranged from 2 to 69 months (median 29), time of treatment from 1 to 76 months (median 11) and number of infusions from 2 to 47 (median 8). Efficacy of infliximab was to a high degree correlated to infusion intervals. For all 19 patients receiving more than 5 infusions a significant higher proportion of infusion intervals were below eight compared to exceeding eight weeks (95% CI: 69 [55-81]: 31 [19-45] (six to ten infusions) respectively 95% CI: 69 [59-77]: 31 [23-41] (more than 10 infusions)). Patients receiving more than ten infusions on this shorter dosage interval had a high response rate (86 % respectively 83 % for patients receiving 11 to 15 respectively more than 15 infusions) on this dosage regimen. Conclusions. The majority of patients could not stay in remission when the dosage interval was eight weeks or longer. A shorter interval between infusions was necessary for an optimal efficacy of maintenance infliximab therapy in a subset of children with CD.

P0351

Title:
Infliximab is Safely Administered when a Combination Therapy of Immunosuppressant and Premedication is used in Children with Crohn's Disease
Marc Virjee 2, Staffan Eksborg 1, Hans Hildebrand 1, Lena Grahnquist 1
1) Department of Woman and Child Health, Karolinska Institute, Stockholm, Sweden 2) Karolinska Pharmacy, Karolinska University Hospital, Stockholm, Sweden

Summary:
Objectives. The aim of this study was to investigate infliximab, a monoclonal antibody against TNFα, in terms safety of infliximab during infusion in children with Crohn’s disease under influence of premedication and immunosuppressive medication. This study presents important new clinical features of infliximab. Materials and methods. Retrospective analysis of medical records of all CD pediatric patients who had received infliximab treatment since 1999 in Stockholm and Södermanland County. Results. 29 patients with Crohn's disease were treated with infliximab. Median age at start of infliximab therapy was 15.3 years (8.1-18.7). Number of infusions varied from 2 to 47 (median 8). Totally 333 infusions were given to the 29 patients. Premedication consisted of intravenous or per oral administration of prednisolon and/or clemastine. Immunosuppressants consisted of either azathioprine or methotrexate. 28 (8.4 %) infusion reactions occurred divided on 11 (38 %) patients. 14 (4.2 %) infusion reactions were classified as severe. Greatest risk of experiencing a severe infusion reaction existed without immunosuppressive or premedicating therapy, 14% (95% CI: 0.4 to 58) followed by premedication only, 20% (95% CI: 8.8 to 34.9), immunosuppressive therapy only, 3% (95% CI: 0.9 to 6.3) respectively a combination therapy of immunosuppressants and premedication, 0% (95% CI: 0.0 to 3.5). Conclusions. Combination of immunosuppressive and premedicating therapy offered safe administration of infliximab in children with CD reducing the infusion reactions to zero. Premedication only did not offer any further protection. Further studies on intravenous and oral premedication therapy are warranted in order to optimize safety during infliximab therapy.

P0352

Title:
New mutation of human gene FOXP3 in patient with IPEX syndrome
Marcello Ruiz da Silva 1, Marisia Amaral Toma 1, Marcos Montani Caseiro 1, Dercy José Sá-Filho 1
1) Centro Universitário Lusíada, Santos, Brasil

Summary:
Objectives: To perform a genetic study of a family witch presented two cases of intractable diarrhea and verify the possibility of IPEX (immunedysregulation, polyendocrinopathy, enteropathy, X linked syndrome). MATERIALS AND METHODOLOGY: In 2006 a male infant with 33 days old, third child of a Brazilian family, showed a clinical features of secretory diarrhea, desnutrition and duodenal mucosa atrophy. Three years before, his brother had died with the same symptoms. This couple is healthy and they have a normal daughter. Blood was colected from the family, except from the
first son, and genetic study was performed. DNA was extracted from buffy-coat using QIAamp DNA Blood Mini Kit (QIAGEN Inc.). Amplification of
11 exons of FOXP3 gene was carried out by PCR. Purified PCR products were sequenced bidirectionally. Sequences were corrected and assembled
using Sequencher 4.0 software. Results: DNA sequence analysis was performed in each 11 exons of FOXP3 gene. A replacement of a single base in
exon 1, position nt 364, C→G was detected in the son resulting in the change of amino acid serine (codon: TCT) to cysteine (codon: TGT) at position
59 in relation to FOXP3 protein product. The nucleotide C was found in the father. Mother and daughter were heterozygote, with ambiguity nucleo-
tide C or G. Conclusions: We believe that this genetic modification of the serine to cysteine amino acid, led to a nonfunctional FOXP3 protein product
in the affected soons. We believed that the absence of endocrinopathy is due to a new mutation in FOXP3 gene.

<table>
<thead>
<tr>
<th>Duodenal Mucosa</th>
<th>Total atrophy</th>
<th>Mild atrophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Hypothyroidism</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>Eczema</td>
<td>no</td>
<td>no</td>
</tr>
<tr>
<td>T lymphocytes</td>
<td>normal</td>
<td>normal</td>
</tr>
<tr>
<td>B lymphocytes</td>
<td>normal</td>
<td>normal</td>
</tr>
<tr>
<td>Natural Killer</td>
<td>normal</td>
<td>normal</td>
</tr>
<tr>
<td>Immunoglobulins</td>
<td>normal</td>
<td>normal</td>
</tr>
<tr>
<td>Death</td>
<td>5 months</td>
<td>4 months</td>
</tr>
</tbody>
</table>

Title: ANALYSIS OF SYMPTOM-BASED CRITERIA FOR DIAGNOSING FUNCTIONAL CONSTIPATION IN CHILDREN

Joana C. Maia 1, Igor F. Garcia 1, Lara R. FÁcilix 1, Maria do Carmo B. de Melo 1, Marcia R. Fantoni Torres 1

1) School of Medicine of the Federal University of Minas Gerais, Brazil, Belo Horizonte, Brazil

Summary:

INTRODUCTION: Chronic functional constipation (CFC) is a prevalent condition in childhood and adolescence. Its onset occurs within the first year
of life in about 50% of the patients. Thus, it is important to identify and treat constipation early to decrease its biopsychosocial impact on children
and their families. The following criteria have been proposed for the diagnosis of CFC: WGR 2002, Rome III 2006, and NASPGHAN Clinical Practice Guideline.

AIM: Compare the validity of the above mentioned criteria in constipated children.

METHOD: Using the SPSS version 12.0, we analyzed data collected from a questionnaire applied to constipated children, who were not receiving treatment when they were first admitted into the Pediatric Gastroenterology Clinic from 2003 to 2007. The study was approved by the local ethical committee. RESULT: A total of 63 patients was selected and the following characteristics were found: 57.1% males; mean age of 6.11 ± 3.63 years; a mean of 3.02 bowel movements/week; soiling in 40.5%
and encopresis in 11.9% (n=42); retentive posturing in 56.3% (n=48); fecal abdominal mass in 45.5% (n=33); feces were hard in 88.8% and large in
82.6% (n=63); and 37.9% (n=29) had a history of feces that obstruct the toilet. Applying the Bristol scale, feces were classified, respectively, as type
1, 2 and 3, in 21.4%, 32.1% and 32.1% of patients (n=28). All patients fulfilled the WGR recommendation, since they were first selected using this criterion.
The same was concluded when the NASPGHAN criterion was applied. On the other hand, according to Rome III, only 77.8% of patients were classified
as constipated. CONCLUSION: The NASPGHAN definition is prone to broad interpretation. The WGR criterion is broader when compared with Rome III. The first, due to a better sensitivity, would be more useful for screening in outpatient primary. The last, although recently published, seems to be more specific, rather than sensitive, thus being more valuable for research purposes. Due to the absence of a consensus about what the best criteria for diagnosing CFC is and there is the need for identification in its early stages, physicians must keep updated and use their clinical experience critically to reconcile the different definitions until an ideal concept for the condition is formally defined.
INTRODUCTION: Chronic functional constipation (CFC) accounts for 3% of general pediatric visits. CFC is often perceived as a benign condition with short-term treatment; however, it is associated with complications that if untreated, can develop into more serious complaints such as faecal impaction and incontinence with further impact on healthcare costs and the patient’s quality of life. In Brazil, most low income citizens' health care is provided by the Public Health System (PHS). The PHS provides efficient programs to support chronic diseases, but not constipation. AIM: Evaluate the annual cost of treatment of children with CFC. METHODS: Follow-up of CFC patients at the non profit Pediatric Gastroenterology Clinic of the Federal University of Minas Gerais for a period of 10 to 14 months; approved by the ethics committee. The following parameters were analyzed for each child: number of medical visits; volume of each laxative used, and treatment costs incurred by the child’s family and the PHS. The cost for gastrointestinal procedures and laboratory testing were not considered. No patient was admitted to the hospital for constipation during the study. All constipation medication costs were obtained using average wholesale prices from popular drugstores. RESULTS: Data from 76 chronically constipated children were collected during a period of 12 months. The average patient’s age was 6.68 years and 53% were male. The number of visits per year was 563 and the average annual cost per patient was $42.82. The average annual cost of each drug was: $104.74 for mineral oil, $68.28 for milk of magnesia, $55.83 for polyethylene glycol without electrolytes and $109.17 for lactulose. The total laxative cost per patient was an average of $338.02 and it was paid by the patient’s family. CONCLUSION: In Brazil constipation represents an economic burden for the patient’s family. The costs incurred by the patient’s family annually are seven times greater than the costs incurred by the PHS. Considering that low income families earning minimum wage have an average annual income of $2,613.12 and that constipation treatment costs average $338.02 per year, it is understandable that financial considerations is one of the causes of non-adherence to treatment. To facilitate compliance with the appropriate treatment for CFC, the authors suggest that the Brazilian PHS subsidize the total cost of treatment since constipation prevention programs have demonstrated significant cost saving.

P0355

Title: Association analysis of genetic variants in CARD15, IL23R and ATG16L1 genes with Crohn’s disease in Brazilian patients

Márcia Luiza Baptista 1, Heda Amarante 1, Vera Lúcia Sdepanian 2, Hermenio C. Lima 1, Subra Kugathasan 3, Geraldo Picheth 1
1) Federal University of Paraná, Curitiba, Brazil 2) Federal University of São Paulo, São Paulo, Brazil 3) Medical College of Wisconsin, Milwaukee, Wisconsin

Summary: Background: Although many genetic variants are identified in association with Crohn’s disease (CD), CARD15, IL23R and ATG16L1 association to CD have been firmly confirmed in Caucasians of European ancestry. The prevalence of CD is rapidly rising in developing countries like Brazil, where European ancestry is firmly admixedtured with natives resulting in a heterogeneous population. We investigated the contribution of CARD15, IL23R and ATG16L1 in CD risk in a Brazilian population. Methods: Genotyping for CARD15 (R702W, G908R, 3020insC), IL23R (rs1004819, rs7517847, rs11209026, rs1495965, rs10889677), and ATG16L1 (rs2241880) was performed in 187 children and adults with CD and 255 healthy ethnically matched controls. Clinical records were systematically reviewed, and detailed phenotypic information was obtained. Results: At least one CARD15 risk allele was present in 30% of the CD patients compared with 10% of controls. Variants of CARD15 (3020insC and R702W) and IL23R (rs1004819, rs7517847, rs11209026, rs1495965, rs10889677), and ATG16L1 (rs2241880) was performed in 187 children and adults with CD and 255 healthy ethnically matched controls. Clinical records were systematically reviewed, and detailed phenotypic information was obtained. Results: At least one CARD15 risk allele was present in 30% of the CD patients compared with 10% of controls. Variants of CARD15 (3020insC and R702W) and IL23R (rs1004819, rs7517847, rs11209026, rs10889677) were associated with CD. However, no genotype-phenotype correlations were found among Brazilian CD population with CARD15 or IL23R variants. No significant association was achieved with ATG16L1. Conclusion: CARD15 and IL23R confer susceptibility to CD in Brazilian population. However, presence of these variants did not influence disease phenotype. Further research should be focused on larger sample size with population admixture analysis to better understand the risks and genotype-phenotype correlation in populations like Brazil where the prevalence of CD is rapidly rising.

P0356

Title: FOLLOW-UP OF CHILDREN WITH CHRONIC FUNCTIONAL CONSTIPATION: IMPACT OF TREATMENT IN THE PHYSIOPHATOL-ogy OF THE DISEASE

Joana C. Maia 1, Igor F. Garcia 1, Lara R. Fá Conde 1, Maria do Carmo B. de Melo 1, Marcia R. Fantoni Torres 1
1) School of Medicine of the Federal University of Minas Gerais, Belo Horizonte, Brazil

Summary: INTRODUCTION: Chronic functional constipation (CFC) is a prevalent condition among children (3%). Its physiopathology involves the painful elimination of hard stools and, consequently, retentive maneuvers. At each unattended reflex, stools are progressively retained inside the rectum becoming harder and bigger, and thus reinitiating the cycle. The main objective of treatment is the interruption of this cycle. AIM: Study the impact of laxatives on clinical parameters. METHODS: Follow-up of 95 patients diagnosed with CFC at the Pediatric Gastroenterology Clinic of the Federal
University of Minas Gerais from 2003 to 2007. This study was approved by the University’s Research Ethics Committee. Data was analyzed through SPSS version 12.0. RESULTS: 95 patients were studied. At their first appointment, 78.7% presented hard stools, 74.2% large stools, 66.3% painful defecation, and 56.9% retentive maneuvers. The average frequency of defecation was 3.62 times per week. At entry, 48.4% of the patients were already receiving a laxative drug although the majority of patients were taking doses below their effective dosage. At this time, most patients began using mineral oil (54.35%). By the third appointment, 2 to 4 months following the first visit, 59 patients remained: 34.5% presented hard stools, 25.9% large stools, 28.8% painful defecation; depending on their ages, 43/59 patients were asked about retentive maneuvers and 8.99 (20.9%) answered affirmatively. The average frequency of defecation was 7.53 times per week. On this occasion, 88.1% of the patients were using at least one laxative drug; milk of magnesia was the most used (54.24%) followed by polyethylene glycol without electrolytes (22.03%) and mineral oil (22.03%). 13.46% of these patients were taking a combination of two drugs (mineral oil and milk of magnesia). Between the first and third visits, a significant modification in relation to defecation frequency, consistency, caliber, defecation pain, and retentive maneuvers was observed (p≤0.001). CONCLUSIONS: The laxatives are efficient for the interruption of the physiopathological cycle of CFC. The patients studied showed a significant improvement in stool type, mainly in the caliber and consistency and improvement in the pattern of defecation, decreasing pain and retentive maneuvers. It was also efficient in persistently normalizing bowel movements by not only making defecation easier, but also turning it into a non-traumatic experience for the child.

P0357

Title: PRECIPITANT FACTORS OF CONSTIPATION DURING CHILDHOOD: PRELIMINARY RESULTS

Joana C. Maia 1, Igor F. Garcia 1, Lara R. FAÇOLI 1, Maria do Carmo B. de Melo 1, Marcia R. Fantoni Torres 1
1) School of Medicine of the Federal University of Minas Gerais, Belo Horizonte, Brazil

Summary:
INTRODUCTION: Childhood constipation is a common problem that accounts for 3% of the visits to general pediatric clinics and for as much as 30% of the visits to pediatric gastroenterologists. Few studies have focused on the underlying causes of constipation. AIM: Study the possible precipitants factors of childhood constipation. METHODS: 44 children were recruited when they were first admitted to the Pediatric Gastroenterology Clinic of the Federal University of Minas Gerais. All parents were given a questionnaire and asked to indicate which of the listed events had happened within 6 months before the onset of constipation. This study was approved by the University’s Research Ethics Committee. Data was analyzed using SPSS version 12.0. RESULTS: The average age of the patients was 6.65 years and most of the symptoms began at the age of 2.25 years. Among these patients, 42.5% had previously received treatment and 27.5% were using at least one medication at admission. 63.8% of patients had a family history of constipation and 62% of those patients reported the family member to be a close relative. According to the parents’ report, the most frequent events that occurred before the onset of constipation were: hard stools (47.7%); painful defecation (36.4%); family relocation (20.5%); birth of a sibling (20.5%); parental conflict (15.9%) or divorce (13.6%); change of eating habits (15.9%) or transition from breast feeding to bottle (3.6%); starting school (13.6%); use of any kind of medication (13.6%); death of close relatives (13.6%); and physical or psychological trauma related to using the bathroom (6.8%). CONCLUSIONS: There are many factors proposed as precipitants of constipation, however, few studies have analyzed their frequency and importance. The events that were found in this preliminary study could already be utilized in making pediatricians aware of the risk of the disease, particularly in children undergoing toilet training. Further investigation is necessary in order to establish the real impact of each factor. It will then be possible to recognize the problem, work towards an appropriate solution, and prevent chronic constipation in children.

P0359

Title: ARE PATIENTS WHO WERE DIAGNOZED CELIAC IN THEIR INFANCY SHORTER?

Rojkes Ester 1, Toca Maria del Carmen 1, SOSA PATRICIA 1, SIMONE ANGELA 1, FARIAS SAENZ MACARENA 1
1) Hospital Alejandro Posadas, Buenos Aires, Argentina

Summary:
Introduction: The failure to thrive is frequent in celiac disease (CD) patients, and it is well defined the fact that shorter height might result in its only clinical evidence. After gluten free diet (GFD) onset, a significant growth rate increase. Recovery is not always full, due to an accelerated bone maturity rate coming with a fast growth rate increase. Objective: To assess the final height reached by our patients diagnosed as celiac patients during their infancy. To compare it to height of a control group. To relate final height with celiac disease diagnosis age and adherence to GFD up to maturity rate coming with a fast growth rate increase. The z score height reached by parents who took their children for pediatric control was taken as control group. Height lower than 2 DS were assumed shorter height according to the age and sex tables. Results: 51 patients were studied, median age 22 years. 34 women (66%;7%). At diagnosis: Median age
24 months, < 6 years: 39 (76%) and between 6 and 16 years: 12 (24%). Classical clinical conditions for CD patients 45 (88.2%). With z-score height m: -1.77. Shorter height 30/51 patients (59%). Total adherence to GFD: 98% the two first years of follow-up and 67% patients up to 16 years. Celiac adult patient: Median age 22 years, with a z-score height m: -0.93 and BMI m: 22 Shorter height: 3/51 patients (6%). 2 patients diagnosed before 3 years of age and 1 when she was 46 months. 2/3 patients did not fully adhere GFD during follow up. Control group: 90 female and 45 male. Median age 24 years, with a z-score height m: -0.11. Shorter height: 8/135 (6%) The height was not different between celiac adults and the control group. t-test (p < 0.2876). Conclusion: 94% patients reached a normal height with no significant difference compared to a normal similar population. 76% of patients included in this study were diagnosed before the age of 6 years. We infer that early assistance together with an adequate adherence to GFD helped in height recovery.

**P0360**

**Title:**  
Celiac disease fifteen years after diagnosis

**TOCA MARIA DEL CARMEN 1, FASSANO JUAN 1, SOSA PATRICIA 1, SIMONE ANGELA 1, ROJKES ESTER 1, Fiorucci Miriam 1**  
1) Hospital Alejandro Posadas, Buenos Aires, Argentina

**Summary:**

Objective: To assess evolution of patients with celiac disease (CD) after 15-25 years of diagnosis. Materials and Methods: Retrospective, descriptive, transversal study. The data were analyzed with t-test. Patients diagnosed between 1980 and 1990 were cited. Clinical history information at disease onset was analyzed. Pathological records, intestinal and/or extra intestinal symptoms, autoimmune illnesses and/or malignant diseases were verified through interrogation. Patients completed a food record and a questionnaire. Hemogram, liver enzymes, calcium, total immunoglobulin A, serological tests, thyroid hormone, antibody test and thyroid echography were performed. Patients were classified into two groups: Group 1) ongoing gluten free diet (GFD) and Group 2) patients who abandoned gluten free diet. Results: 51 patients were analyzed, average age 22 years old, 34 females (66.7%) 45 patients (88.2%) presented typical gastrointestinal symptoms of CD at disease onset. 15 women had undergone 25 pregnancies, 88% of them with GFD, 2 abortions performed in 2 patients who had abandoned the diet. 76.4% of teenagers did not follow the diet. Only 15,7% of all patients had been controlled by adult gastroenterologist. Group 1: GFD fully compliant, 16 patients (31.4%). Only 3 patients (5,8%) presented the extra digestive symptoms. Group 2: Not adhere to diet, 35 patients (68.6 %). Classic symptoms were presented in 9 patients (17,6%) and 8 (15,6%) presented extra digestive symptoms. 5 patient presented diarrhoea, two of them recurrent diarrhoea, one bloody diarrhoea; one entered hospital. 4 patients presented ferropenic anaemia. Hypothyroidism was found in 4 patients. Dermatitis herpetiformis in 1 patient and pathological bone fracture in another one. There were no significant differences in body mass index between groups. Small intestine biopsy was taken in 4 patients from group 2, all 4 patients with normal serological tests, 3 of them presented villous atrophy and one was normal. One low endoscopy performed in a patient with bloody diarrhoea with a normal result. Conclusions: The dietary compliance in this group is very low (31.4%). The clinic picture of CD changed in adults who did not undergo diet; it was differed from those at disease onset. Most of patients with CD did not receive medical or dietary control after adolescence. Better medical dietary support is necessary to prevent complications.

**P0361**

**Title:**  
ELASTASA TEST TO INVESTIGATE PANCREATIC INSUFICIENCY IN CHILDREN

**SIMONE ANGELA 1, TOCA MARIA DEL CARMEN 1, SOSA PATRICIA 1, ROJKES ESTER 1, FARIAS SAENZ MACARENA 1, FIORUCCI MIRIAM 1**  
1) Hospital Alejandro Posadas, Buenos Aires, Argentina

**Summary:**

Introduction: Fecal elastase concentration (FEC) is used for the noninvasive screening of exocrine pancreatic insufficiency. FEC predicts severe pancreatic insufficiency with 95% sensitivity and 85% specificity. Objective: To describe the results obtained in fecal elastase tests in patients suspected to have pancreatic insufficiency. Materials and Methods: This is a descriptive and retrospective study. Clinical records from patients coming to our pediatric gastroenterology and nutrition unit, suspected to have pancreatic insufficiency, were analyzed. They were divided into 3 groups: Group 1: patients with higher levels of fecal fat and suspected of cystic fibrosis (CF). Group 2: patients with Immunoreactive trypsinogen analysis (ITR) + in neonatal screening for CF. Group 3: patients with respiratory pathology and suspected of CF. Fecal Elastase 1 Test (FET) and Van de Kamer (VK) fecal fat test were performed. Results: 116 patients, 62 (53,4%) male, median age 36 months (1 month to 16 years) Group 1: 86/116 patients had an increased VK. Group 2: 17/116 patients had a (+) ITR. Group 3: 13/116 had had a respiratory pathology and were suspected of CF. Low FET values in 42 (36%) patients. Final diagnosis as follows: Group 1: Very low FET values: 21 patients. Cystis fibrosis 21/22. 1 patient had normal FET values. Low FET values:17 patients. Malnutrition (MN) 1/10. Celiac disease (CD) 9/20. Cow milk allergy (CMA) 2/8. Other diagnosis 5/10. Normal FET values: Giardia lambla 5, AIDS 3, Postenteritis syndrome 8 patients. The infants whith CD, CMA, and MN had abnormally low values, but after a median of days 180, all of them showed normal levels. Those 5 patients with other diagnosis: 1 infant has a pancreatic insufficiency unknown cause.1 premature...
with hyaline membrane disease, apnea and a doubtful TIR. 1 patient with chronic pancreatitis. 1 patient with toxic cholestatic hepatitis and another one with meconial plug. Group 2: Low FET 3/17 (+) ITR, confirmed CF in 3 patients. Group 3: Low FET 1/13. 1 patient with respiratory pathology and decreased FEC values; repeated later with a normal value. Conclusions: Fecal elastase concentration is a simple, non-invasive, useful tool for the diagnosis of pancreatic insufficiency in children with cystic fibrosis and those with growth failure or chronic diarrhea. Nevertheless, low values may be found in diseases with enteropathy.

P0362

Title: Endoscopic Features Of Duodenum In Childhood Celiac Disease (CD)

Reynoso Ricardo 1, Varela Amanda 1, Messere Gabriela 1, Vidal Jorge 1, Toca Maria del Carmen 1
1) Hospital Alejandro Posadas, Buenos Aires, Argentina

Summary:
Objectives: Duodenal alterations of CD are well known in adults patients, but poorly in pediatric age. We studied endoscopic duodenum pattern in CD children regarding the age and clinical manifestations. Patients and Methods: 51 patients were studied with histopathology diagnosis of CD. Before the endoscopy we measure antibodies: EMA IgA and Ig G and/or anti tTg IgA, all of them with positives results. Age: 10 month-16yr, median 73,6month. Sex: female: 26. They were divided in three groups A (<5yrs =22), B (5-10yrs =22), C (10-16yrs=7). Period of evaluation: between September 2007-february 2008. All patients, underwent endoscopy with multiple duodenum biopsies, six specimens were taken (I and II/III portions), after appropriate sedation. Instrumental: A Pentax Eg 2940 Videendoscopy and an EPM-3500 video processor. Endoscopic markers studied were: mucosal mosaic pattern, scalloped folds, patchy images, visible duodenal vasculature, loss of folds and normal appearance. Results: Endoscopic Markers (TABLE) Clinical presentation: symptomatic patients = 45 (8/45 normal endoscopy), silent = 6 (2/6 normal endoscopy), and 5/6 silent patients were first-degree with CD family. Histopathology: 50/51 patients showed Marsh II or III, but Marsh I only one (clinical silent, normal endoscopy and CD family). Conclusions: typical endoscopy CD patterns may be observed at any age and normal endoscopy image could also be present. The predominant endoscopic patterns are mosaic mucosa and escalloped folds; visible vasculature are difficult to evaluate. The absences of folds are present in elder children. Damage patchy could be present in the fourth part of these patients. The endoscopy is the best tool to evaluate and to manage the taking of duodenal samples in the diagnosis of CD.

<table>
<thead>
<tr>
<th>Age low 5 yrs</th>
<th>5 - 10 yrs</th>
<th>10 - 16 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Images n:</td>
<td>22 n: 22  n: 7</td>
<td></td>
</tr>
<tr>
<td>mosaic</td>
<td>13 10 5</td>
<td></td>
</tr>
<tr>
<td>scalloped folds</td>
<td>14 9 4</td>
<td></td>
</tr>
<tr>
<td>patchy</td>
<td>5 6 1</td>
<td></td>
</tr>
<tr>
<td>visible vasculature</td>
<td>5 5 2</td>
<td></td>
</tr>
<tr>
<td>loss of folds</td>
<td>0 1 2</td>
<td></td>
</tr>
<tr>
<td>normal</td>
<td>3 6 1</td>
<td></td>
</tr>
<tr>
<td>51 patients</td>
<td>A B C</td>
<td></td>
</tr>
</tbody>
</table>

P0363

Title: HAS CELIAC DISEASE CHANGED IN THE LAST THREE DECADES?

TOCA MARIA DEL CARMEN 1, SOSA PATRICIA 1, SIMONE ANGELA 1, ROJKES ESTER 1, FARIAS SAENZ MACARENA 1
1) Hospital Alejandro Posadas, Buenos Aires, Argentina

Summary:
Objectives: To investigate retrospectively if the clinical picture of celiac disease (CD) has changed in the last 30 years. Materials and methods: Retrospective, descriptive study. Fisher test. Clinical records from children who were diagnosed CD from 1975 to 2007 were analyzed. Age, clinical picture, weight, height, weight/height (W/H) and fecal fat test (Van Kamer) at disease onset were compared. Results: The 884 patients, 548 (62%) females, were classified in groups. Group 1: 1975 – 1979: 189 patients Group 2: 1980 – 1989: 275 patients Group 3: 1990 – 1999: 216 patients Group 4: 2000 – 2007: 204 patients 16 celiac siblings diagnosed in a study of prevalence during 1987 and 36 celiac siblings diagnosed in a study during 2000 were assessed. Other 30 children with type 1 diabetes, plus 14 children with Down Syndrome, under treatment from1990 to 2007 were included as a separate group. In our hospital, antigliadin antibodies test began in 1990; anti-endomysium test in 2000; and anti tissue transglutaminase in 2004. Conclusions: Clinical evidence of CD in children has changed in the last two decades, since 1990. Serologic markers allowed the identification
of subjects with silent or atypical clinical evidence. This evidence more often appeared in schoolchildren and adolescents, thereby increasing the median age at diagnoses moment.

<table>
<thead>
<tr>
<th>Age Height</th>
<th>W/H Clinics</th>
<th>Forms</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median</td>
<td>Low Pc 10</td>
<td>Low Pc 10 Typical Atypical Silent Van Kamer</td>
<td></td>
</tr>
<tr>
<td>Group 1</td>
<td>2y 9m 63%</td>
<td>78% 98% 2% 0% 90%</td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td>3y 50%</td>
<td>81% 89% 9% 2% 72%</td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td>4y 10m 39%</td>
<td>45% 79% 13% 8% 42%</td>
<td></td>
</tr>
<tr>
<td>Group 4</td>
<td>5y 7m 18%</td>
<td>35% 64% 16% 20% 40%</td>
<td></td>
</tr>
<tr>
<td>Siblings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1987</td>
<td>5y 1m 25%</td>
<td>44% 75% 25% 0% 31%</td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>7y 2m 25%</td>
<td>35% 50% 36% 14% 22%</td>
<td></td>
</tr>
<tr>
<td>Tipe 1 Diabetes</td>
<td>10y 2m 18%</td>
<td>25% 37% 8% 55% 28%</td>
<td></td>
</tr>
<tr>
<td>Down Syndrome</td>
<td>9y 2m 11%</td>
<td>33% 44% 11% 45% 33%</td>
<td></td>
</tr>
</tbody>
</table>

P0364

Title: Bone mineral density in pediatric patients with celiac disease on a gluten-free diet

Maria Eugênia F A Motta 1, Maria Eduarda N Faria 1, Gisélia A P Silva 1
1) Federal University of Pernambuco, Recife, Brazil

Summary: Background: Low bone mineral density is a common finding in pediatric patients with celiac disease on a gluten-free diet. There are still contradictory data regarding bone density in these patients. This study aimed to measure bone mineral density in patients on a gluten-free diet according to age at the diagnosis, duration of dietary treatment and relapses of gluten-free diet. Methods: Thirty-one patients with celiac disease on a gluten-free diet were enrolled. Bone mineral density was measured at the lumbar spine by dual-energy X-ray absorptiometry. Age at diagnosis and duration of dietary treatment were confirmed according to bowel biopsy, relapses of gluten-free diet was investigated by direct question and detection of anti-transglutaminase antibodies IgA to ensure confirmation of dietary compliance with gluten-free diet. Results: Lumbar spine by dual-energy X-ray absorptiometry values evidenced osteopenia in 12 out of 31 (38,7%) and osteoporosis in 3 out of 31 (9,7%) patients. At diagnosis, 21 out of 31 (67,7%) patients were aged four years old or more and 13 out of 21 patients (61,9%) had low bone mineral density. Sixteen patients out of 31 (51,6%) were on a gluten-free diet for four years or less, 11 out of 16 (68,7%) had low bone mineral density. Relapses of gluten-free diet were confirmed by 13 out of 30 patients; 6 out of 30 (20%) had low bone mineral density. Anti-transglutaminase antibodies IgA was positive in 8 patients; 4 of them had low bone mineral density. Conclusion: Pediatric patients with celiac disease in treatment are at risk for reduced bone mineral density, even on gluten-free diet. Early diagnosis and duration and relapses of the dietary treatment were directly implicated on bone density normalization.

P0365

Title: Evaluation of gastroesophageal reflux and treatment response with the 24 hour Multichannel Intraluminal–pH probe in asthmatic children.

Gabriela Donato Bertoldi 1, Marina Orsi 1, Judith Cohen 1, Alejandro Tepper 2, Viviana Rodriguez 2, Daniel Dagostino 1
1) Hospital Italiano Buenos Aires, Buenos Aires, Argentina 2) Hospital de Niños R. Gutierrez, Buenos Aires, Argentina

Summary: Objective: To study gastroesophageal reflux (GER) behavior before and after treatment with omeprazole in children with non controlled asthma and to evaluate the effect of PPI therapy on asthma symptoms and pulmonary function. Material: Since May 2005 to December 2007, 49 children (6 -14 yrs; mean 9.4 yrs) from the Respiratory Unit at the Children’s Hospital with persistent asthma were evaluated. The Multichannel Intraluminal Impedance-pHmetry (MII-pH) was performed with a Sleuth Recorder. If the study was abnormal children were given omeprazole 1.2 mg / kg /d bid maximum dose of 40 mg /day. After 2 months on PPI treatment, a second MII-pH was done. We divided the children: G1: normal study, G2: Pathologic study, G3: Under PPI treatment. The effect of GER treatment was evaluated comparing the asthma control day (% ACD) and functionally
(spirometry and methacholine provocation test) in a 30 days run-in period. Results: 19/49 (38.7%) GERD in asthmatic children. One child abandoned without the IMM-pH control. (Table) G1: presented less events of acid and non acid reflux. (p <0.04). G3: On PPI therapy the clearance and pH score improved, the number of acid episodes decreased but non acid events increased. (p <0.05) The ACD was 54.2 ±29 and 90.9 ±13 (p <0.04), % predictive FEV1 was 88 ±17 and 88 ±22 (NS), and methacholine logPC20 was -0.875 ±0.6 and -1.009 ±0.6 (NS) in the run-in and after adding omeprazole respectively. Conclusions: Most patients on PPI showed less acid exposure and reduced the number of days without symptoms and requirements of asthma medication although no differences in FEV function was seen. Those with persistent or increased non acid reflux need another therapeutic approach.

| score pH Nº Acid events Nº Non Acid events Total events Clearence Full column |
|---|---|---|---|---|---|---|
| G1(n:29) | 3,2 (1-15) | 12,72 (8) | 12,27 (7,6) | 24,96 (10) | 18,29 (3) | 63% |
| G2(n:19) | 25 (3-89) | 35,3 (16) | 18,5 (20) | 54 (27) | 17,8 (4,2) | 65,50% |
| G3(n:18) | 5 (1-14) | 17,7 (16,4) | 31,2 (22) | 49 (27) | 15,33 (3,3) | 53,70% |

P0366

**Title:**
New antigliadin A2 antibodies to diagnose celiac disease

Maria Gabriela Donato Bertoldi 1, Marina Orsi 1, Nestor Litwin 2, Teresa Davila 3, Julieta Gallo 1, Daniel Dagostino 1
1) Hospital Italiano, Buenos Aires, Argentina 2) Laboratorio analisis clinicos Litwin, Buenos Aires, Argentina 3) Laboratorio Anatomia Patologica Dra Davila, Buenos Aires, Argentina

**Summary:**

Aim: To evaluate the behavior of antigliadin A2 and antitransglutaminase with duodenal biopsy in celiac children. Material: Since September 2007 to February 2008 all patients suspected of celiac disease were analyzed for the deamidated gliadin peptides antigliadin A2 (DPG); the antitransglutaminase IgA- IgG (Atg) and with duodenal biopsies taken by endoscopy. The blood samples were processed by an analytical method to detect and quantify circulating IgA or IgG antibodies to DPG. Deamidated gliadin peptides bound to ELISA microplates were used as antigens to test the presence of antigliadin antibodies using commercial polystyrene microplates. Horseradish peroxidase labelled anti-human IgA/IgG were added to the microwells. This complex binds to the solid-phase attached antigliadin antibodies. After washing away the unbound enzyme-IgG complex, the remaining enzyme activity was developed by adding a chromogenic substrate, and the color was measured spectrophotometrically using an automatic ELISA Statfax reader at 450/620nm dual bichromatic wavelength. The results were expressed in ELISA units with a cut-off of 20 ELISA units. The antitransglutaminase were also analyzed by Elisa and the cut off was 20 units. The duodenal biopsies were informed by 2 different pathologists in a blinded manner and informed with Marsh categories. We divided the children: G1: Celiac children confirmed by biopsy, G2: normal biopsy. Results: 36/49 children were diagnosed as celiacs; 2 of them were excluded from G 1 because of demonstrated IgA deficiency. G1: 36 children, 2 IgA deficiency. 1/36 low dosage antitransglutaminase with high levels of DPG Ig A/G. G2: 13 children normal biopsy, 2/13 antitransglutaminase positive, low dosage DPG A/G. (Table). Conclusions: In this study, the DPG A resulted a very specific test for celiac diagnosis similar to previous investigations with antiendomisium antibodies with the advantage that being an Elisa test it is not operator dependant and is also much cheaper(< 30-40%). The antitransglutaminase antibodies are very good as a screening test because of its high sensibility with a much lower cost. In children with IgA deficiency, the DPG G seems to be an excellent method to select children for duodenal biopsy. More studies are necessary to see if these new antibodies will be able alone or together with the antitransglutaminase to avoid intestinal biopsy or at least be able to select only difficult cases.

| Atg A % DPG A % DPGG% |
|---|---|---|
| Sensibility 97 91 100 |
| Specificity 84 100 92 |
| Positive Pred Val 94 100 97 |
| Negative Pred Val 91 81 100 |

P0367

**Title:**
10-Year follow-up after mass screening for coeliac disease
Summary:

Introduction: Mass screening for coeliac disease (CD) is controversial. The purpose of this study was to perform a long-term follow up on children with proven CD identified by screening in 1998 to elaborate whether early detection of CD improved their health status and health-related quality of life (HRQoL). Methods: The intention was to randomly allocate 32 children (2-4 yrs) with proven CD to a gluten free diet or to normal gluten containing diet. A 10-year follow-up was performed assessing 6 times the general health status, CD associated symptoms, anti-endomysium titters and HRQoL using the DUX25 questionnaire. Results: CD was successfully treated in 81% of the children. Early diagnosis and treatment led to improvement of symptoms in 69% of the children: in 44% by early treatment and in 25% by treatment later in the follow-up. In 19% of the children treatment would have not improved their health status, since they have remained asymptomatic while consuming gluten. In 12% the effect of the GFD on the symptoms can not be assessed since they were asymptomatic at screening and they have remained so while adhering to the diet. After 10 years 95% of the patients included in the study are adhering to a GFD. At diagnosis the HRQoL of the symptomatic children was lower than that of the reference population and it improved significantly after 1 year of GFD. 10 years after both the parents and the children reported a good HRQoL comparable to the one in a healthy reference population. Conclusion: Early diagnosis and treatment by mass screening leads to health improvement in the majority of the study population without deterioration of the HRQoL. Some children with proven CD remain asymptomatic and should possibly only be treated in case of development of symptoms.

P0368

Title:
Gluten peptide P31-43 presents in trans IL15.

M. Vittoria Barone 1, Sara Santagata 1, Giuliana Lania 1, Mieke ten Elakelder 1, Valentina Discepolo 1, Riccardo Troncone 1
1) Pediatric Department (ELFID), Naples, Italy

Summary:

Background: We have previously showed that gliadin peptide P31-43 induces proliferation due to delayed degradation of the active EGF receptor. An effect relayed to P31-43 interference with endocytic vesicles maturation. Here we show that P31-43 increases IL15 levels on the surface of Caco2 cells interfering with its vesicular trafficking. IL15 so presented functions as a growth factor and P31-43 induced proliferation can be prevented by inhibitors of both EGFR and IL15 pathway activation. Aim: To test P31-43 effects on IL15 induction at level of transcription, translation, intracellular trafficking and its role in P31-43 induced proliferation. Methods: Semi-quantitative and real time PCR were employed to investigate P31-43 effects on IL15 mRNA levels. Protein levels and distribution was analyzed by Facs and Elisa. Stat5 and IL15R alfa activation has been examined by WB. Proliferation was analyzed by BrdU (Bromodeoxiuridine) incorporation. Results: In Caco 2 cells P31-43 does not increases of IL15 mRNA levels. IL15 protein was found increased only on the cells surface. This form of IL15 is linked to the receptor, is not dependent on new protein synthesis and functions as a growth factor. Stat 5 and the IL15 receptor alfa (IL15Ra) are activated after P31-43 treatment. Anti-IL15 blocking antibodies can prevent P31-43 induced increase of proliferation in Caco2 cells and in enterocytes of biopsies from CD patients. Conclusion: P31-43 presents IL15 in trans interfering with vesicular trafficking. Justacrine signaling of the IL15/Il15-receptor-alfa contributes both to cell proliferation and activation of innate immunity.

P0369

Title:
Celiac Disease: clinical features and nutritional status of patients diagnosed at a pediatric referral center in southern Brazil.

Karin Knabben de Souza 1, Mário C. Vieira 1, Giovana Stival da Silva 1, Jocemara Gurmini 1, Danielle Reis Yamamoto 1
1) Hospital Pequeno Príncipe, Curitiba, Brazil

Summary:

Objective: Celiac disease is a chronic and permanent disorder occurring in genetically susceptible individuals after previous gluten exposure leading to malabsorption syndrome. The objective of this study is to report the experience with the diagnosis of patients with celiac disease regarding demographic characteristics, main clinical manifestations and nutritional status at a pediatric tertiary hospital in southern Brazil. Methods: The medical records of patients diagnosed as having celiac disease from January 1995 and August 2007 at the Hospital Pequeno Príncipe - Curitiba, Brazil were retrospectively reviewed. Clinical information was collected and analyzed. The nutritional status at time of diagnosis was expressed as Z scores for weight for age (Wt/Age), height for age (Ht/Age) and weight for height (Wt/Ht) according to NCHS standards. Results: One hundred and twenty patients who were diagnosed as having celiac disease between January 1995 and August 2007, who had complete information on their medical
EVALUATION OF SUPERIOR MESENTERIC ARTERY BLOOD FLOW IN HEALTH PREMATURE NEONATES

Y C Chang 1, M C Falcão 1, J E B Cabral 2, L G Hartmann 2, M M Galvão Fº 2, L Abreu L Jr 2
1) Department of Pediatrics School of Medicine University of São Paulo, São Paulo, Brazil 2) Neonatology Service Hospital and Maternity São Luiz São Paulo, São Paulo, Brazil

Summary:
Objective: to describe the evaluation of Doppler velocimetry of the superior mesenteric artery in healthy premature neonates on the first, third, seventh days, and then weekly, until six weeks of life. Methods: a prospective cohort study, including appropriate for gestational age neonates with gestational age between 27-34 weeks and excluding neonates in unstable hemodynamic conditions, needing assisted ventilation with high parameters, large deformations or clinical syndromes, feeding intolerance or diagnosis of necrotizing enterocolitis, and conditions that alter the mesenteric flow. The Doppler velocimetric examination was done by means of the Logiq Book 8C-RS (GE-USA), using a 8 MHz imaging transducer, with the pulsed color Doppler by sonographic waves at 4 MHz. The blood flow curves were recorded after a sequence of five stable measurements, obtaining the measurements: peak systolic velocity(PSV), end diastolic velocity(EDV), average flow velocity, Pourcelot Index:[peak of systolic velocity–end diastolic velocity]/peak of systolic velocity, which represents a resistence index(RI), and pulsatility index(PI). The values were expressed in averages and standard deviations. The exams were done prior to feeding (up to 30 min) and after feeding (between 15-60 min). The exams were done on the first day (between 6-24 hours/life), third, seventh days, and then weekly, until six weeks of life. Results: a total of 77 neonates were studied and realized 125 exams. The table below represents the results obtained. Conclusions: healthy premature neonates with gestational age between 27 and 34 weeks presents an improvement in peaks of systolic and diastolic velocity, and improvement in vasodilation in response to feeding. These results suggest the Doppler velocimetry of superior mesenteric artery blood flow as specific and preventive evaluation method for each premature neonate, as a way to a safer introduction and progression of feeding, reducing the prevalence of gastrointestinal inflammatory diseases, and decreasing morbidity and mortality.
Days of life  Systolic velocity peak pre prandial  Systolic velocity peak post prandial  End diastolic velocity peak pre prandial  End diastolic velocity peak post prandial

<table>
<thead>
<tr>
<th>Days</th>
<th>Systolic velocity peak pre prandial</th>
<th>Systolic velocity peak post prandial</th>
<th>End diastolic velocity peak pre prandial</th>
<th>End diastolic velocity peak post prandial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>60,51+/−22,24</td>
<td>59,6+/−24,14</td>
<td>18,85+/−6,09</td>
<td>20,63+/−6,89</td>
</tr>
<tr>
<td>14th</td>
<td>95,33+/−18,11</td>
<td>121,95+/−24,18</td>
<td>22,02+/−8,50</td>
<td>29,02+/−10,05</td>
</tr>
<tr>
<td>28th</td>
<td>96,96+/−12,18</td>
<td>126,07+/−18,17</td>
<td>22,24+/−8,02</td>
<td>32,02+/−8,45</td>
</tr>
<tr>
<td>42th</td>
<td>58,12+/−9,78</td>
<td>96,12+/−8,98</td>
<td>12,05+/−5,12</td>
<td>21,15+/−3,43</td>
</tr>
</tbody>
</table>

**P0372**

**Title:**
MULTIPLE PANCREATIC CYSTS MIMICKING GASTRO ESOPHAGEAL REFLUX DISEASE

MARISE ELIA DE MARSILLAC 1, VERONICA SANTOS DE OLIVEIRA 1, MYRNA SANTOS ROCHA 1, LORENA DE MELLO ABELEIRA 1, TATIANA FAZECAS 1, NICANOR MACEDO 1
1) HOSPITAL MUNICIPAL JESUS, RIO DE JANEIRO, BRAZIL

**Summary:**
Objective: to report a rare case of multiple pancreatic cysts
Methods: SSM, 1 year old, male, white, referred to pediatric clinic for evaluation of Gastro-esophageal reflex(GER) since birth age even at exclusive breast-feeding, that worsened at 6 months of age when it was introduced cow milk in his dietary. The patient begins to vomit after every meal, maintaining normal nutritional status. Physical examination was completely normal. Cow’s milk allergy was suspected at that time and goat milk was begun. The physician begins treatment with anti-emetic drug (domperidone) and anti-H2 blocker when he was 9 months old, with clinical improvement. At 10 months of age, the drug was suspended and vomiting returns. He was referred to a hospital to perform ultra-sound investigation. The exam demonstrated innumerous hypoechoics images in topography of an enlarged pancreas. Upper gastro-intestinal barium study showed a partial obstruction at duodenum’s second portion. At abdominal computer tomography scan, multiple cystic lesions at topography of pancreas (parenchyma almost absent)and gastric empting delayed. Pediatric gastroenterologist evaluation was completed with laboratory tests: normal amylases, lipases, AST, ALT, GGT, Bilirubin metabolism, BUN, renal function. Last clinical evaluation continued to be normal at 1 year of age. Conclusion/Discussion: Multiple pancreatic cystic is a rare disease in pediatric patients and differential diagnosis between benign and malign lesions is mandatory, even in children. Von Hippel-Lindau (VHL) disease, for instance, is one of inherited tumor susceptibility syndromes (autossomic dominant) and is either associated with multiple cystic lesions of the pancreas, with an estimated prevalence of 2-3 per 100,000 persons and patient has to be always reevaluated . GER is a prevalent disease in infancy and a routine investigation in children without improvement should be performed before changing diet in order to discard anatomy problems.

**P0373**

**Title:**
PATIENTS WITH GASTRITIS ATTENDED AT THE PEDIATRIC GASTROENTEROLOGY OUTPATIENT CLINIC OF HOSPITAL DOS SERVIDORES DO ESTADO (HSE-RJ)

BERNARDA SILVA FERREIRA 1, GISELE PODKAMENI 1, EUGENIA FIGUEIREDO COSTA LACERDA 1, MARIA NOEMI PINTO MAC CULLOCH 1, MARISE ELIA DE MARSILLAC 1, HELENA EVANELHLO BUARQUE 1
1) HOSPITAL DOS SERVIDORES DO ESTADO-MINISTÉRIO DA SAÚDE, RIO DE JANEIRO, BRAZIL

**Summary:**
Objective: To evaluate clinical features, endoscopic and histological findings in patients with gastritis seen at our ambulatory unit in order to improve their clinical assistance.
Methods: A retrospective study from medical records of 34 children who have gastritis at HSE-RJ, Brazil from January 2006 to August 2007. Results: We reviewed 34 records (47%M; age range 2-18 years) with a history of abdominal pain in 100%, followed by a combination of abdominal pain and vomiting in 53%, nausea (26%), constipation (23%) and heartburn in 20 % of cases. 38% of the children had family history for gastric diseases. Before endoscopic exam, the symptomatic treatment of pain prescribed was the proton pump inhibitor (50% of children) and the H2 receptor antagonist (18% of children). Only 33% of patients improved their symptoms (total symptoms relief in 15% and partial relief in 18%). Gastric endoscopy was performed in symptomatic 28 patients with normal aspect in 32%. Urease test was performed in 4 patients. Only histological data of 19 children were rescued: normal histology in 5% and gastritis in 90 % (65% of mild gastritis). Helicobacter pylori (Hp) infection investigation was made in 82% of upper endoscopy. Histological examination was positive in 68%. Among Hp positive patients, 92% had evidence of gastritis for histological examination. Approximately 77% of patients with histological examination positive for Hp were treated. Among those treated, 60% achieved clinical improvement total,20% partial improvement,10% reported no improvement,10% no other continued monitoring, and
no patient complained of worsens symptoms. Conclusion: At 19 biopsies found, 17 had histological confirmation. All patients had abdominal pain, and 5 cases presented total or partial response to symptomatic treatment, without specific treatment of Hp. The Hp was linked to 13 biopsies, and 2 with positive unease test without histology, totaling 15 patients with Hp positive, corresponding to 44% of the records studied. The only patient with clinical worsening, histological examination was normal and the pain disappeared after psychotherapy. The prevalence of peptic disease in children is rare, but when associated with Hp it is almost 5% in children under 10 years, reaching 60% in developing countries. We found Hp in 44% of our symptomatic population, consistent with the literature data.

P0374

Title:
PEDIATRIC GASTROENTEROLOGY AND HEPATOLOGY OUT PATIENT PROFILE OF HOSPITAL DOS SERVIDORES DO ESTADO –RJ – BRAZIL

ISA CRISTINA NUNES 1, BERNARDA FERREIRA 1, GISELE PODKAMENI 1, MARIA NOEMI PINTO MAC CULLOCH 1, MARISE ELIA DE MARSILLAC 1, HELENA EVANGELHO BLARQUE 1
1) HOSPITAL DOS SERVIDORES DO ESTADO-MINISTÉRIO DA SAÚDE, RIO DE JANEIRO, BRAZIL

Summary:
OBJECTIVE: To appreciate the profile of children attended in the pediatric and hepatology out patient clinic of HSE from August 2006 to August 2007. The goals of the project were to acquire and review appropriate patient information data including age, sex and diagnosis / complaints. METHODS: a retrospective review of the charts of children treated from August 2006 to August 2007 in our ambulatory. RESULTS: 509 children and adolescents were attended, their age ranged from 1 month(m) -19 years(y) and 274 (53,8%) were male(M): 102 patients with constipation diagnosis (ages range 6 m-17 y; 60 M). 09 patients had anal conditions (5); fecal incontinence (1); tumor (1). (ages range 3 m-8 y; 6 M): 67 patients had hepatobiliary diseases( age range 1m-17y; 30 M): viral (17) and auto immune hepatitis (12); cholelithiasis/ cholangitis(11); neonatal cholestasis (9); inborn metabolic diseases (7); choledocal cyst (4); portal thrombosis (3); extra hepatic bile duct atresia (2); Gilbert's disease (1); hepatic abscess (1). 63 patients had abdominal pain complaints (age range 1 year-16 y; 30 M). 54 patients had peptic disease which included epigastric pain, gastritis and peptic ulcer (age range 11y-17 y; 21 M). 52 patients had food allergy, which included patients with diarrhea, abdominal pain, vomit, atopic dermatitis, lymphoid nodular hyperplasia (age range 2 m-11 y; 34 M).47 patients had GER disease, including one girl with hiatal hernia (age range 1 m-12 y; 22 M), 9 patients had other esophageal disorders (age range 2 m-15 y; 3 M) as disphagia (3), stenosis (1), esophageal atresia(3), Mallory- Weiss Sd (2). 24 patients had failure to thrive (age range 6 m-9 y; 18 M). 12 patients had IBD, (age range 5y-19 y; 8 M). Crohn's disease in 8. 9 patients had Graft versus host disease (2); leukemia (3); lymphoid nodular hyperplasia (age range 2 m-11 y; 34 M).47 patients had GER disease, including one girl with hiatal hernia (age range 1 m-12 y; 22 M), 9 patients had other esophageal disorders (age range 2 m-15 y; 3 M) as disphagia (3), stenosis (1), esophageal atresia(3), Mallory- Weiss Sd (2). 24 patients had failure to thrive (age range 6 m-9 y; 18 M). 12 patients had IBD, (age range 5y-19 y; 8 M). Crohn's disease in 8. 9 patients had gastrointestinal polyps (age range 4 y-14 yrs old, 7 M). 8 patients had nausea and vomiting complaints including 1 with intra cranial hypertension and 4 with cyclic vomiting (age range 4y-12 y; 4 M). 8 patients had parasitic infestations. (4 M). Others 43 pts with different disorders like irritable bowel sd (6); obesity (5) and lactose intolerance (4) Conclusion: The profile of our patients included 20 % of intestinal constipation, 9,25% of GER, 10,2% of food allergy, 23 % with abdominal pain (53,9% abdominal pain and 46,1% abdominal pain with gastritis) and 2,35% with inflammatory bowel disease. These are the preliminary evaluation of our unit and are similar to medical literature.

P0375

Title:
Gastrochisis Revisited: a twelve-year experience

Marta Moniz 1, Marta Moura 1, Manuel Brito 1, Mafalda Castro 1, Piedade Sande Lemos 1, Maria Lurdes Torre 1
1) Fernando Fonseca Hospital, Amadora, Portugal

Summary:
Objective- Gastrochisis is a rare congenital anomaly with an overall survival rate over 90% but with a high morbidity rate. The aim of this study was to review and evaluate the outcome of patients with gastrochisis in our unit and to identify risk factors predicting morbidity and mortality. Methods- A retrospective review of newborns with gastrochisis admitted to the Paediatrics department of Fernando Fonseca Hospital between June 1996 and March 2008 was conducted. Specifically the parameters: maternal age, maternal smoking, antenatal diagnosis, mode of delivery, gestational age, gender, birth weight, presence of associated anomalies, type of closure, intestinal complications, and long term complications were recorded. Time to full enteral feeding (TFE) and length of hospital stay (LHS) were defined as outcome measures. SPSS was used for statistical analysis. Results- Forty-four newborns with gastrochisis were studied. Nine (64%) were female. Antenatal diagnosis was made in 71% of cases, mean maternal age was 22 years, mean gestational age was 35.8 weeks and mean birth weight was 2270g. Three (21%) patients had associated anomalies, including 2 undescended or exteriorized testes and 1 with periventricular leukomalacia. Eleven patients (79%) were delivered by cesarean section. Primary repair was performed in 13 cases (93%) and in 1 case a silo patch was applied. Intestinal complications (necrosis, malrotation, suboclusion and dilatation) were present in 5 (36%) patients. The median TFE was 28 days. The mean of LHS was 33 days. Overall survival was 93%, 1 patient died of sudden cardiac arrest. Between 6 to 26 months of follow up, 6 patients had other pathologies, including 3 gastroesophageal reflux, 1 intestinal...
suboclusion, and 3 hernias (umbilical, incisional and inguinal). No statistically significant correlation was demonstrated between patients’ parameters and outcome measures. Conclusion- In our patient population there was a high rate of caesarean deliveries. Hospital stay and TFE were long but overall survival was excellent. Complications occurred but had no significant clinical impact. Further national clinical and epidemiological studies are needed to identify the most important factors affecting morbidity and mortality in gastroschisis.

P0376

Title:
Late presentation of infantile hypertrophic pyloric stenosis

Marta Moniz 1, Antonio Figueiredo 1, Maria Lurdes Torre 1
1) Fernando Fonseca Hospital, Amadora, Portugal

Summary:
Introduction: Infantile hypertrophic pyloric stenosis (IHPS) has an incidence of 2 – 3.5/1.000 live births. With the development of accurate and accessible imaging modalities the classical presentation is becoming rarer. Once the gold standard, upper gastrointestinal series (USG) is now virtually never performed as an initial study for IHPS, being recommended to rule out other conditions. Case report: Four-month old boy, first child, born after an unremarkable full-term pregnancy (birthweight in the 50th percentile), that presents with intermittent non-bilious vomiting since the second week of life. The abdominal ultrasound at two-months showed a pyloric muscle length of 13 mm, with a transversal diameter of 8 mm. He is admitted when he was four months for evaluation of failure to thrive (weight below the 5th percentile) and vomiting. The physical examination revealed a malnourished child, with normal blood pressure, without palpable abdominal masses. He had a hypochloremic (Cl- 96.1 mmol/L) metabolic alkalosis (pH 7.48, HCO3- 33.4 mmol/L, BE 8.9) and a hypokalemia (K+ 3.39 mmol/L). Other causes besides HPS were considered due to the former abdominal ultrasound. The following were all unremarkable: sodium, calcium, magnesium, renin, aldosterone, total IgE, specific IgE for milk proteins, urinary sediment and culture, sweat test; the urinary excretion of potassium was elevated. The renal ultrasound revealed a pyelic dilation. The UGS showed a hyperkinetic and distended stomach without passage of barium through the pylorus. Later, the ultrasound confirmed a pyloric muscle thickness of 6 mm, with a muscle length of 18mm and with a transversal diameter of 16mm. A Ramstedt pyloromyotomy was successfully performed. Comments: This case remembers that, although rare, IHPS has to be considered in infants older than four months that present with intermittent non-bilious vomiting and for which no other cause is obvious.

P0377

Title:
National Register of Pediatric Inflammatory Bowel Disease in Argentina

Marta Wagener 6, José A. Ruiz 1, Marina Orsi 2, Vilma Aliboni 3, Román Bigliardi 4, Norma Balcarce 5

Summary:
Objectives Estimate the incidence and prevalence of IBD in our country on 18 years-old minors. Determine the characteristics of the disease.

Materials and methods Prospective and multicentric register from 11/01/06 to 12/02/07. All gastroenterologic pediatric centres of the country were invited to include their diagnosed patients younger than 18 years-old, including those with previous diagnose that assisted to medical follow-up and those who were diagnosed during the register period. Patients older than 19 years-old that were still being followed-up by the same center were also included. Results There were 401 patients registered on 18 centres of 8 states. Ciudad Aut. Bs. As., Gran Buenos Aires and La Plata included 80.8% and Santa Fe, Córdoba, Tucumán, Corrientes, Chaco, Salta and Tierra del Fuego 19.2%. The prevalence and incidence of the first group was 5.77 and 0.7/100,000, being this number lower on the rest of the country. 56% were males. 62% were diagnosed as UC, 23% as CD and 15% as IC, being this proportion kept on both sexes but with male predominance on CD (p=0.0032). The actual mean age was 14 years 7 months. The mean debut age was 8 years 5 months (range, 3 months-17 years) and the diagnose one was 9 years 4 months. The mean between debut and diagnose was 11 months (range, 3 months-7 years). Since 1996 the number of diagnosed cases increased. 68% of the patients attend to hospitals and 32% to private centers. 50% were exclusive breastfed and 26% received both breast and bottle. 58% didn't ingest fast food. 15% of the patients had family history of autoimmune diseases: 53% were first degree relatives and 47% second degree. The most frequent symptoms were diarrhea and abdominal pain for the three groups; CD patients showed more frequency of weight loss, growth failure and perianal disease. Diarrhea was the most frequent symptom and pus and blood association was exclusively related with UC. 24% of the patients with UC presented hepatic associated diseases. Conclusions 1-Our IBD prevalence is lower than in US and Europe. 2-There is an increase in diagnosed cases on the last 10 years. 3-UC is the most frequent disease. CD is more frequent on males. 4-Age at diagnose is the same as in other registers and delay on diagnose is 1 year. 5-An association with hepatic diseases is observed in quarter of UC patients. 6-It is necessary to continue with this register, include the missing centres and extend it to Latin America.
P0378

**Title:**
The role of the CXCL9 and CXCL11 genes in children and adolescents with inflammatory bowel disease (IBD)

**Summary:**
Background: The etiology of Inflammatory Bowel Disease (IBD) is unknown. An actually accepted hypothesis for the etiopathogenesis suggests that in genetically predisposed persons environmental and dietary factors together with bacterial antigens cause a dysregulation of the immune System. Since the discovery of the NOD2/CARD15 gene in 2001 over 10 total genome scans have been performed and a large number of other susceptibility loci have been described. This data have been obtained in adult patients. Therefore, the aim of this study was to identify new candidate genes associated with early onset of CD and UC in a pediatric cohort. Methods: Subjects: 154 white Caucasian children with IBD (105 CD, 43 UC, 6 indeterminate colitis, one pair of dizygotic twins with one CD and one UC) and 168 ethnically matched healthy adult blood donors. Gene expression analysis: Determination of mRNA expression of 88 genes from different biological contexts (signal transduction, inflammation, cell cycle and apoptosis) in large bowel biopsies of selected IBD patients and controls using a real-time PCR assay in 96-well format. Real-time PCR SNP Genotyping: Pre-designed TaqMan® SNP Genotyping Assay (Applied Biosystems, Foster City, CA, USA). Investigation of G/A polymorphism in the intron 1 of the CXCL9 gene and a A/G polymorphism within the intron T-2 of the CXCL11 gene on chromosome 4q21. Results: In the gene expression analysis various genes of the CXCR3 chemokine axis were highly expressed in 9 of 11 CD and all UC patients. Genotyping for polymorphic variations in the gene coding for the CXCL9 ligand revealed significant differences in the genotypes between CD patients and controls (p<0.05), in the CXCL11 ligand differences were marginal not significant (p=0.06). Subgrouping for phenotypes according to disease localization and behaviour showed no significant differences in the frequency of the genotypes. Conclusion: Our analysis within the CXCL9 and CXCL11 genes indicate that genes of the CXCR3 axis are strongly expressed in colon of IBD patients and one polymorphism within the CXCL9 gene is associated with pediatric onset of IBD. Although the exact relation between CXCR3 ligands and IBD remains to be elucidated, our data may contribute to a better understanding of the pathophysiology underlying IBD.

P0379

**Title:**
Randomized controlled double-blind study on the safety and effectiveness of thalidomide in the treatment of refractory Crohn's disease and ulcerative colitis: preliminary results.

**Summary:**
Objective: To evaluate the efficacy and tolerability of thalidomide in children, adolescents, and young adults with untreatable IBD. Methods: Patients aged 2-20 with moderate-severe Crohn's disease (CD) or ulcerative colitis (UC) despite steroids and immunosuppressive drugs are eligible. The study is divided in two phases. Phase I: Randomised double-blind placebo-controlled trial. Patients are classified as responders if at week 4 they achieve a 25% clinical response, and if at week 8 they achieve remission or at least a 75% clinical response. Responders to thalidomide and non-responders to placebo are enrolled to thalidomide open-label with a follow up of 52 weeks (Phase II). Estimated sample size is 126 children. Results: Thirty two patients were enrolled in the study (22 CD, 10 UC). Baseline characteristics: age 7-19 years; mean disease duration 3.5 years; extraintestinal manifestations 15/32 (42%); adverse effects to previous therapy 23/32 (70%). Twenty seven patients completed Phase I and 15 entered Phase II. Overall remission was achieved with thalidomide in 14/23 (60%) patients vs 1/13 (7%) with placebo (p<0.001). Remission rates in thalidomide were not significantly different in Phase I from Phase II. All patients who achieved remission with thalidomide are maintaining remission, with different follow up. Mild alteration of electromyography occurred in four patients, without clinical symptoms. One patient experienced mild oedema of the lower limbs. Conclusion: Preliminary results of the ongoing study show that thalidomide is effective in inducing remission in children and adolescents with IBD refractory to other immunosuppressive therapies. *A.Ventura1, M.Lazzerini1, S.Martellossi1, F.Marchetti1, M.Maschio1, M.Magazzù2, C.Ruggeri2, A.Barabino3, A.Calvi3, M.Fontana4, P.Lionetti5, F.Mangiantini5, M.Lorusso5, G.Palla6, G.Maggiore6, V.Villanacci7, F.Bartoli8, G.Decorti8, S.de Iudicibus8, M.Montico9, L.Ronfani9, R.Paparazzo10. 1Clinical Pediatrics, Institute for Child Health IRCCS Burlo Garofolo, Triest. 2CF and Ped. GI Unit, University of Messina. 3.Pediatric Gastroenterology Unit, IRCCS Gaslini, Genoa. 4Department of Pediatrics, Ospedali Buzzi, Milan. 5Department of Pediatrics, Ospedale Meyer, Florence. 6Gastroenterology and Hepatology, University of Pisa. 7Institute of Anatomy and Histology, University of Brescia. 8Pharmacology Unit. 9Clinical Epidemiology and Biostatistics Unit, IRCCS Burlo Garofolo, Trieste. 10Pharmacy Unit, IRCCS Burlo Garofolo, Trieste.
**Title:** Thalidomide induces mucosal healing in Crohn’s disease

Marzia Lazzerini 1, Massimo Maschio 1, Stefano Martelossi 1, Grazia Di Leo 1, Alessandro Ventura 1
1) Institute for Child Health IRCCS Burlo Garofolo, Trieste, Italy

**Summary:**
Background Thalidomide was reported to induce clinical remission in adult and children with Crohn’s disease (CD) in several open label studies. Methods We report a case of and adolescent affected by CD experiencing mucosal healing after thalidomide. The patients is part of an ongoing randomised double-blind placebo-controlled study on efficacy and safety of thalidomide in untreactable inflammatory bowel diseases in children and adolescents. Results The patients was diagnosed to have CD at age of 6 years. At study entry he had 9 years, he presented ileal and gastro-duodenal disease in moderate activity (PCDAI =25) despite previous therapy with enteral nutrition, several steroid courses, and azathioprine. Video capsule endoscopy showed diffuse, whole region erythema, edema, and nodularity, and multiple patchy long segment irregular ulcerations on the proximal and distal ileum (Figure 1). He started thalidomide double-blind as a part of a randomised placebo-controlled study on efficacy and safety of thalidomide in untreactable inflammatory bowel diseases in children and adolescents. After 8 weeks of therapy he was in clinical remission (PCDAI = 7). Following study protocol randomisation code was opened, he was finded to be in the thalidomide treatment group, and he continued thalidomide open–label. He was followed up for 52 weeks, and he mantained complete clinical remission. At week 52 video capsule endoscopy showed only localised short segment erythema and few, short segment nodularity of the distal ileum (Figure 2). Conclusion More research is needed to evaluate the role of thalidomide in inducing clinical and endoscopical remission in adult and pediatric patients with IBD.

**P0381**

**Title:** Gray-scale and color Doppler sonography in the evaluation of children with suspected bowel inflammation: correlation with colonoscopic and histologic findings.

Matias Epifanio 1, Jose Vicente Spolidoro 1, Matteo Baldisserotto 1, Sidiane Ferreira 1, Juliana Eloi 1
1) Hospital São Lucas, Porto Alegre, Brazil

**Summary:**
OBJECTIVES To evaluate the correlation of gray-scale and color Doppler sonography with colonoscopy and histology to detect bowel inflammation in children. METHODS Records of 72 patients with suspected bowel inflammation were reviewed retrospectively. Patients were included in the study if sonography had been performed up to 30 days before colonoscopy. Gray-scale and color Doppler US evaluated bowel wall thickness and vascular- ity for the detection of distal bowel inflammation. Findings were correlated with colonoscopic and histologic findings. The sensitivity and specificity of sonographic wall thickness to detect inflammation was determined. The Spearman coefficient was used to determine the correlation of Doppler findings with colonoscopy/histology. RESULTS The main clinical indication to include patients in this study were: blood stools (36%), abdominal pain (32%), chronic diarrhoea (19%), symptoms of known IBD (8%), others (5%). Sonograms of 372 bowel segments were evaluated and results were correlated with colonoscopic and histologic findings of 352 segments. We found high sensitivity and specificity of sonographic bowel thickness to detect inflammation in the terminal ileum and the right colon; in the other bowel segments, specificity was high but sensitivity was low. The correlation of Doppler US with colonoscopy and histology to detect inflammation in the terminal ileum was strong (rs=0.84 p<0.001) and in the other segments, weak to moderate. Correlation was stronger in all bowel segments when the interval between exams was shorter than 10 days. Abnormal jejunoileal bowel segments were found in 12 of the 74 (16%) sonographic studies. Of these 12 colour Doppler sonographic studies, 9 had abnormal findings only in the jejunoileal segment, and colonoscopy and histology were normal. The other 3 patients had abnormal sonographic, colonoscopic and histological findings. CONCLUSION This retrospective study showed that there is a strong correlation of sonographic findings with colonoscopy and histology of terminal ileum and right colon in the investigation of bowel inflammation in children. Colour Doppler sonography is also useful in the diagnosis of inflammatory diseases that affect only the small bowel and when colonoscopic findings are normal. Therefore, we recommend that colour Doppler, in addition to grey-scale sonography, be routinely used to investigate inflammatory diseases, particularly IBD in children.

**P0382**

**Title:** Helicobacter pylori eradication does not induce gastroesophageal reflux disease in children

Matjaž Homan MD MSc 1, Marjeta Sedmak MD 1, Jernej Brecelj MD 1, Rok Orel MD PhD 1
1) Department of Gastroenterology, Division of Pediatrics, University Medical Center, Ljubljana, Slovenia

**Summary:**
Aim: The aim of this prospective study was to evaluate the relationship between Helicobacter pylori (H. pylori) infection and gastroesophageal reflux disease in children. We evaluated the effect of eradication of the H. pylori on oesophagitis. Methods: Forty-two paediatric patients, who were endoscopically diagnosed with H. pylori infection (range 2-18 years, mean age 12 years, 24 girls and 18 boys), were included in the study. Infection was confirmed by identifying the bacteria in gastric biopsy specimens. Oesophagitis was diagnosed endoscopically when erosions of the oesophageal mucosa were found. We determined the level of oesophageal inflammation by using Los Angeles grading system. The second procedure was performed six months after the completion of the antibiotic treatment of H. pylori. At the second endoscopy, we re-evaluated oesophageal mucosa according to the same criteria. Before the first and second endoscopy, the patients were also evaluated by questionnaire for gastroesophageal reflux symptoms, such as: vomiting, heartburn, regurgitation, retrosternal pain and dysphagia. Results: H. pylori was successfully eradicated in 32 of 42 (76%) patients. Esophagitis was recorded in 7 of 32 (22%) children with successful treatment at the first endoscopy procedure. At the second endoscopy, esophagitis was still present in 6 of 7 patients, and in two of them, the level of esophageal inflammation increased. In 25 patients with normal oesophagus at the beginning of the study, four cases of esophagitis were observed after H. pylori eradication. The group of 10 children with persistent infection served as a control group. In this group, two patients had esophagitis of the same level at the first and also second endoscopy. We concluded that the number of patients of the first group with newly developed or worsened esophagitis six months after successful eradication compared to the control group was not statistically significant (p=0.157). In addition, in almost all of the included children, the gastroesophageal symptoms were improved or disappeared after the successful treatment of H. pylori infection. Summary and conclusion: The results of our study suggest that eradication of H. pylori is not cause of exacerbation or de-novo peptic oesophagitis.

P0383
Title: Collagenous colitis in children: A launchpad report for a worldwide case-hunt
Matti Verkasalo 1, Cristina Camarero 2, Peter Lewindon 3, David Suskind 4
1) Hospital for Children and Adolescents, University of Helsinki, Helsinki, Finland 2) Hospital Ramon y Cajal, Madrid, Spain 3) Royal Children’s Hospital, Brisbane, Australia 4) Seattle Children’s Hospital and Regional Medical Center, University of Washington, Seattle, USA
Summary: Collagenous colitis (CC) has been reported in 9 paediatric patients since 1989. The small number of cases precludes good clinical description of the entity whether it is an independent disease or a rare reactive response to a variety of stimuli. CC is a histological diagnosis; on colonoscopy the mucosa usually looks normal. It occurs at any age, affecting predominantly females, and is associated with collagenous or eosinophilic gastritis, anaemia, autoimmune disorders and infections. Of reported treatments most consistent positive results were obtained with steroids. There is a lack of long-term follow-up data. In an attempt to find more information one of the authors put a notice on the electronic bulletin-board of NASPGHAN, and within a week received eleven e-mail replies of unpublished paediatric CC patients. Three were eligible for presentation as new cases. It is likely that there are more single cases of CC treated by individual specialists. They remain unpublished because single case reports are rarely accepted by journals. Our cases have a better outcome and better response to treatment than previously reported (table). We believe a joint effort of the international paediatric gastroenterology community would find enough cases to consolidate the knowledge of paediatric CC to permit a clinically relevant description of the entity. We propose any clinician treating a child with CC to contact us and submit their experience (matti.verkasalo@hus.fi), with the aim of presenting the collected data at the next WCPGHAN meeting. We also suggest that similar launchpad reports for other rare diseases be encouraged at future WCPGHAN meetings.

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Associated diseases</th>
<th>Response: Steroid S+</th>
<th>Mesalazine M+</th>
<th>well and off medication</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 y</td>
<td>7 M</td>
<td>Haemolytic anaemia</td>
<td>S+ M+</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>2 y</td>
<td>F</td>
<td>Collagenous duodenitis</td>
<td>S+ M+</td>
<td>yes</td>
<td></td>
</tr>
<tr>
<td>17 mths</td>
<td>Collagenous gastritis</td>
<td>S+ yes</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P0384
Title: Anorectal manometry in children with chronic constipation and cerebral palsy
Indhira Ribeiro de Almeida 1, Soraia Tahan 1, Vera Lucia Sdepanian 1, Ulysses Fagundes-Neto 1, Mauro Batista de Morais 1
1) Universidade Federal de São Paulo, São Paulo, Brazil
Summary:
Objective: Evaluate the characteristics of anorectal manometry in children with chronic constipation and cerebral palsy, including the determination of the inhibitory rectal-anal reflex to define if there is any association with Hirschsprung’s disease in these patients. Methods: Twenty-eight children aged from 10 months to 17 years (Mean 7.1 ± 3.9 years) with chronic constipation and cerebral palsy were included in this study. All of the patients were administered and expired air collected after 15, 30, 45, 60, 90, 120, 150 and 180 minutes. SIBO was considered present for an H2 concentration above 10 ppm up until 180 minutes. Methane production was considered for a CH4 concentration in expired air higher than 3 ppm. The inhibitory rectal-anal reflex’s duration after 20 ml and 40 ml of air insufflated in the rectal balloon in children with cerebral palsy (13.3 ± 4.4 and 16.6 ± 5.0 seconds) was longer (p=0.05) than found in the functional constipation groups: 1. without retentive fecal incontinence: 10.9 ± 4.4 and 13.3 ± 4.4 seconds, respectively, and 2. with retentive fecal incontinence (10.7 ± 3.2 and 12.4 ± 3.4 seconds). The duration of the relaxing and recovery phases of inhibitory rectal-anal reflex did not show any statistically significant difference. Conclusion: The anorectal manometry did not identify any patient with Hirschsprung’s disease in the group with cerebral palsy. The duration of the inhibitory rectal-anal reflex was longer in patients with cerebral palsy than in functional chronic constipation with and without retentive fecal incontinence.

P0386

Title: 
D-xylose absorption and the hydrogen breath test as indicators of asymptomatic environmental enteropathy in children pertaining to two socio-economic classes

Carolina Santos Mello 1, Soraia Tahan 1, Ligia Cristina F. L. Melli 3, Miriam Silva C. Rodrigues 2, Ulysses Fagundes-Neto 1, Mauro Batista de Morais 1

1) Pediatric Gastroenterology Division, Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil 2) Foundation Institute of Education for Osasco - University Center FIEO (UNIFEO), Osasco, Brazil 3) Health Secretary - City Hall of the City of Osasco and Foundation Institute of Education for Osasco - University Center FIEO (UNIFEO), Osasco, Brazil

Objective: In 1985, Peled et al (JPGN;4:575) affirmed that: “Methane production still remains a mystery”. Currently, after almost 25 years, one can ask: Is breath methane still a mystery? This study has as its objective the analysis of methane production and its relationship to small intestinal bacterial overgrowth (SIBO) in slum children. Methods: Some 84 slum children, aged between 6 and 10 years, from the city of Osasco, Sao Paulo State, were studied. Hydrogen (H2) and methane (CH4) breath tests were carried out. After a fasting sample had been collected, 10 g of lactulose were administered and expired air collected after 15, 30, 45, 60, 90, 120, 150 and 180 minutes. SIBO was considered present for an H2 concentration greater or equal to 20 ppm in relation to the fasting in the samples collected up to 60 minutes. The non-production of H2 was considered for a concentration below 10 ppm up until 180 minutes. Methane production was considered for a CH4 concentration in expired air higher than 3 ppm. H2 production was also expressed as an area under individual curves: 1. during the first hour (relative to the small intestine) and 2. between 60 and 180 minutes (colon production). Results: Of the 84 children, 53 (63.0%) were CH4 producers. No child showed signs of constipation or soiling. The absence of H2 production was observed in 13 (15.5%) children. CH4 production was observed in 9 (69.2%) of the 13 who were non-producers of H2 and in 44 (62.0%) of the 71 H2 producers (p=0.852). The presence of SIBO was observed in 20 (28.2%) of the 71 H2 producers. In 9 (45.0%) of the 20 children with SIBO and in 39 (76.5%) of the 51 without SIBO, CH4 production was observed (p=0.023). On the analysis of the area under the H2 curve (ppm x min) second to the presence of CH4 production, between 0-60 min, there was no difference in the medians (p=0.182) of the CH4 producing [360.0 (266.2-498.7)] and the non-methane producing children [487.5 (268.1-605.6)]. Between 60 and 180 min, the production of 41 times less H2 (p<0.001) was observed in the CH4 producing children [105.0 (60.0-187.5)], when compared to those non-producers [4320.0 (3948.7-5426.2)]. Conclusion: With the methane producers children, lower H2 production in the colon phase (60-180 min) was observed for the breath test. In the first phase of the test (0 to 60 min), the inhibitory effect of CH4 on H2 production was less expressive and the study’s statistical analysis did not show any significant difference.

P0385

Title: 
Breath Methane: The mystery continues?

Carolina Santos Mello 1, Soraia Tahan 1, Ligia Cristina F. L. Melli 3, Miriam Silva C. Rodrigues 2, Ulysses Fagundes-Neto 1, Mauro Batista de Morais 1

1) Pediatric Gastroenterology Division, Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil 2) Foundation Institute of Education for Osasco - University Center FIEO (UNIFEO), Osasco, Brazil 3) Health Secretary - City Hall of the City of Osasco and Foundation Institute of Education for Osasco - University Center FIEO (UNIFEO), Osasco, Brazil

Summary:
Objectives: In 1895, Peled et al (JPGN;4:575) affirmed that: “Methane production still remains a mystery”. Currently, after almost 25 years, one can ask: Is breath methane still a mystery? This study has as its objective the analysis of methane production and its relationship to small intestinal bacterial overgrowth (SIBO) in slum children. Methods: Some 84 slum children, aged between 6 and 10 years, from the city of Osasco, Sao Paulo State, were studied. Hydrogen (H2) and methane (CH4) breath tests were carried out. After a fasting sample had been collected, 10 g of lactulose were administered and expired air collected after 15, 30, 45, 60, 90, 120, 150 and 180 minutes. SIBO was considered present for an H2 concentration greater or equal to 20 ppm in relation to the fasting in the samples collected up to 60 minutes. The non-production of H2 was considered for a concentration below 10 ppm up until 180 minutes. Methane production was considered for a CH4 concentration in expired air higher than 3 ppm. H2 production was also expressed as an area under individual curves: 1. during the first hour (relative to the small intestine) and 2. between 60 and 180 minutes (colon production). Results: Of the 84 children, 53 (63.0%) were CH4 producers. No child showed signs of constipation or soiling. The absence of H2 production was observed in 13 (15.5%) children. CH4 production was observed in 9 (69.2%) of the 13 who were non-producers of H2 and in 44 (62.0%) of the 71 H2 producers (p=0.852). The presence of SIBO was observed in 20 (28.2%) of the 71 H2 producers. In 9 (45.0%) of the 20 children with SIBO and in 39 (76.5%) of the 51 without SIBO, CH4 production was observed (p=0.023). On the analysis of the area under the H2 curve (ppm x min) second to the presence of CH4 production, between 0-60 min, there was no difference in the medians (p=0.182) of the CH4 producing [360.0 (266.2-498.7)] and the non-methane producing children [487.5 (268.1-605.6)]. Between 60 and 180 min, the production of 41 times less H2 (p<0.001) was observed in the CH4 producing children [105.0 (60.0-187.5)], when compared to those non-producers [4320.0 (3948.7-5426.2)]. Conclusion: With the methane producers children, lower H2 production in the colon phase (60-180 min) was observed for the breath test. In the first phase of the test (0 to 60 min), the inhibitory effect of CH4 on H2 production was less expressive and the study’s statistical analysis did not show any significant difference.
Summary:

Objective: To evaluate and compare in children aged from 6 to 10 years, and within two socio-economic classes: 1. D-xylose absorption and hydrogen breath test using lactulose in research into small intestinal bacterial overgrowth (SIBO) as indicators of environmental enteropathy; 2. malnutrition and obesity. Methods: Some 85 children from an urban slum and 43 from a private school in Osasco, Sao Paulo State, were studied. After fasting and the collection of expired air, 10 g of lactulose were administered. Breath samples were collected after 15, 30, 45, 60, 90, 120, 150 and 180 minutes. H2 and methane were analyzed in the Quintron instrument. SIBO was considered to be present for an H2 concentration was greater or equal 20 ppm in relation to the fasting result and those up until 60 minutes. The non-production of H2 was considered for a concentration below 10 ppm up until 180 minutes. Methane production was considered for a CH4 concentration in expired air higher than 3 ppm. The 5 hour D-xylose absorption test was performed after the oral administration of 5 g of the sugar. Weight and height were related with the NCHS values. The economic class was evaluated. The level of contamination of the slum children’s water samples was evaluated for total and fecal coliforms. Results: In the slum 68.2% of the children were in classes D or E (the lowest), and 31.8% in class C. In the school, 95.3% were from classes A or B (highest). In the slum the presence of total and fecal coliforms was observed in 65 (77.4%) and 41 (48.8%) respectively, of the 84 water samples analyzed. Among the children, 1/85 from the slum and 2/43 from school did not carry out the H2 breath test; 13/84 (15.5%) from the slum and 7/41 (17.0%) from school were considered as non-producers of H2. Other results are described in the table below, considering: number of positive cases / total number of children evaluated, found described in their respective boxes. Conclusion: The unfavorable environmental conditions of the slum were responsible for a higher number of children with abnormalities for their H2 breath test, with a reduction in their D-xylose absorption and methane production.

Title:
High-performance inulin and oligofructose prebiotics increase intestinal absorption of iron in rats with iron deficiency anemia

Karine C Freitas 1, Olga M S Amancio 1, Ulysses Fagundes-Neto 1, Mauro B de Morais 1
1) Federal University of Sao Paulo, Sao Paulo, Brazil

Summary:

Objective: The objective of this study was to evaluate the effect of HP-inulin (high-performance inulin) and oligofructose (OF) prebiotics and a blend of OF plus HP-inulin (synergy 1), on intestinal iron absorption, for dietary intake, body growth, cecum and colon weight and caecal pH in rats with iron deficiency anemia when compared to those with iron deficiency anemia without dietary fiber. Methods: Male Wistar rats (n=48) weaned at 21 day were fed with AIN93-G feed without iron for 2 weeks in order to induce iron deficiency anemia. Then 36 day old anemic rats were divided into four groups: (1) HP-inulin (100 g/kg of diet) group; (2) Synergy 1 (100 g/kg of diet) group; (3) Oligofructose (100 g/kg of diet) group; (4) Control group, dietary fiber was replaced by corn starch. All the diets had 25 mg of elemental iron/kg of diet added in order to recover from iron deficiency anemia. This recovery period was 3 weeks. Results: After 3 weeks, the final hemoglobin values in g/dL, for the HP-inulin, synergy 1, oligofructose and the control group were, respectively: 9.8 (9.4 – 9.9); 8.3 (8.1 – 9.2); 10.0 (9.0 – 11.4) and 7.7 (7.2 – 8.1), with statistically significant differences between the oligofructose and the control group (p<0.05) and HP-inulin and the control group (p<0.05). Parent iron intestinal absorption was, respectively: 68.2 ± 17.7%; 56.7 ± 22.7%; 72.0 ± 15.3% e 46.8 ± 19.1% (p=0.01), with significant statistical differences between the oligofructose and the control group and the HP-inulin and the control group. The levels of hepatic iron, in µg/g of dry tissue, in the same order, were, respectively: 225.0 ± 79.3; 215.2 ± 70.6; 212.7 ± 49.4 and 180.7 ± 77.2 (p=0.454). The content of the cecum and the tissue weight of the cecum and of the colon were higher in the groups that consumed prebiotics in relation to the control group (all cases, p<0.05). The caecal pH was also lower (p<0.001) in the prebiotics groups. The four groups consumed similar quantities of diet. The changes in weight and in body length were similar in the four groups studied. Conclusion: The ingestion of HP inulin and OF led to greater intestinal iron absorption, taking into account a more effective recovery of hemoglobin mass.
P0389

Title:
Iron absorption of infant formula and iron fortified cow’s milk: an experimental study in weanling rats

Marina de Lima Costa 1, Karine de Cássia Freitas 1, Olga Maria Silvério Amancio 1, Ângela Tavares Paes 1, Mauro Batista de Morais 1
1) Federal University of Sao Paulo-UNIFESP, Sao Paulo, Brazil

Summary:
Objective: To compare the iron absorption of infant formula and cow’s milk added in the same quantity and type of formula’s iron salt in weanling rats. Methods: Twenty four three-week-old weanling Wistar rats were maintained in adapted metabolic cages, with two drinking places, during the experiment (10 day). At the start of the study, the animals were divided into 3 similar groups as to their weight, hematocryte and hemoglobin: Group 1: powdered infant formula; Group 2: powdered whole cow’s milk fortified with iron; Group 3: powdered whole cow’s milk not fortified with iron. The daily offered diets (150mL) amounted to 111.5 Kcal and contained 12.5g and 7.5 g of carbohydrate; 2.0 g and 4.9 g of protein; 6.0 g and 6.9 g of fat; 11.2 mg and 0.0 mg of vitamin C; 688.8 mg and 188.2 mg of calcium in Groups 1 and 2, respectively. The amount of iron was the same in Groups 1 and 2 (1.33 mg). The nutritional composition of Groups 2 and 3 were identical except for the iron level. Deionized water and the diet were offered ad libitum. The feeds were reconstituted using deionized water in accordance with the manufacturer’s instructions and the diets were substituted 3 times per day, at the same moment, and the volume consumed measured. Weight, hematocryte, hemoglobin and hepatic iron levels were also measured at the end of the study. Results: The mean diet consumption of Group 1 (450.5±26.50mL) was lower (p<0.001) when compared with those of Groups 2 (658.8±53.73mL) and 3 (532.7±19.06mL). The table below shows the means and standard deviations of weight, hematocryte, hemoglobin and hepatic iron levels: Legend of the table: *Variance analysis. Variables with different letters on the same line: p<0.05. †n = 6. Conclusions: There was no statistically significant difference in weight between the three groups in spite of the greater consumption of those fed with fortified or unfortified cow’s milk. Despite the lower consumed volume, the group that received the infant formula showed better iron absorption in relation to fortified cow’s milk, based upon the values of the body iron indicators.

Infant formula (n=7) Fortified cow’s milk (n=8) Unfortified cow’s milk (n=7) p*

Weight (g) 60.3±6.64 68.9±13.63 64.1±11.50 0.342
Hemoglobin (g/dL) 12.1±1.13a 9.6±1.59b 6.2±0.97c <0.001
Hematocryte (%) 39.0±2.83a 30.7±3.28b 18.7±2.98c <0.001
Hepatic iron (mcg/g) 688.6±244.63a 173.0±63.78b 99.7±13.99b† <0.001

---

**P0390**

**Title:**
Lactobacilli and bifidobacteria in children feces of two social-economic levels: children from a slum and children from a private school

Ricardo Martin Pereira de Mello 1, Mauro Batista de Morais 1, Ligia Cristina Fonseca Lahoz Melli 3, Miriam Silva do Carmo 2, Carolina Santos Mello 1, Isabel Cristina Afonso Scaletsky 1

1) Pediatric Gastroenterology Division of the Federal University of Sao Paulo, Sao Paulo, Brazil 2) University Center Fieo - Foundation of Institute of Education for Osasco - UNIFIEO, Osasco, Brazil 3) City Hall of the City of Osasco and University Center Fieo - Foundation of Institute of Education for Osasco - UNIFIEO, Osasco, Brazil

**Summary:**
Objective: Lactobacillus and bifidobacterium are bacteria genders regarded to be important in the healthy colonic microbiota composition. The objective of this study was to determine the colonies forming units (CFU) of lactobacilli and bifidobacteria in feces of children belonging to two social-economic levels. Methods: Spontaneously eliminated feces samples of children aging between 6 and 10 yo that had not shown gastro-intestinal (GI) symptoms for more than four weeks or used antibiotics for over two weeks were analyzed. The first group was constituted by 86 children living in a slum in “Colinas D’Oeste” in Osasco town (C, D and E social-economic level, according to Brazil’s criteria). Nutritional status was evaluated using body mass index (BMI) according to NCHS reference values. The second group was constituted by 36 children enrolled in a private school (A and B social-economic level). The bacteria colonies isolation was done in specific culture means and under anaerobiosis conditions during 48 or 72 hours, at 37°C and the number of colonies was determined from plaque counting. The research about fecal and total fecal colifformes (Escherichia coli) in the water they used for self-consume of the group of the slum was done using the defined substrate method (Colilert®, IDEXX, Sorvering, Brazil). Results: The CFU median of lactobacilli (1.125 x10⁹) and bifidobacteria (1.675 x10⁹) in the private school was superior to the one of the group of the slum children (lactobacilli = 0.250 x10⁹ and bifidobacteria = 0.350 x10⁹), being the differences significant (p<0.001). Colifformes were found in 76.7% of the samples of consumed water in the slum houses, and a statistically significant association was not found between the lack of contamination in the consumed water in the houses and bigger number of lactobacilli and bifidobacteria in the feces of the children. In the slum group, children (n=28) with BMI ≤1.0 score Z presented lower CFU median of lactobacilli (0.100 x10⁹) and bifidobacteria (0.095 x10⁹) than children (n=58) with BMI ≥-1.0 SD (lactobacilli = 0.370 x10⁹ and bifidobacteria = 0.460 x10⁹) respectively. Conclusion: The plaque count of lactobacilli and bifidobacteria were superior in the children that live in adequate environment comparing with the children that live in slum. In the slum group, an association between weight deficit and lower plaque counts of lactobacilli and bifidobacteria was observed.

**P0391**

**Title:**
Lactose malabsorption and intolerance in Japanese-Brazilian children and adolescents

Adriana T Hioki Shimamoto 1, Lilian C S Medeiros 1, Ulysses Fagundes-Neto 1, Mauro B de Morais 1

1) Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil

**Summary:**
Objective: To determine the prevalence of lactose malabsorption and intolerance in Japanese-Brazilian children and adolescents and to assess the influence of any lactose malabsorption and intolerance on calcium intake. Methods: A cross-sectional study was performed with 90 Japanese-Brazilian subjects between 5 and 14 years in Sao Paulo, Brazil. Lactose malabsorption was diagnosed using the breath H2 test. Lactose (2 g/kg up to 50 g) was administered in a 20% aqueous solution. Breath samples were collected before ingestion and 15, 30, 45, 60, 90, 120, 150 and 180 minutes later. Breath samples were analyzed in a Quintron Microlyser model 12i gas chromatography manufactured by Quintron Instrument Company, Inc. (Menomonee Falls, WI). Lactose malabsorption was diagnosed when the hydrogen concentration presented an increment of ≥20 ppm with reference to basic levels. The presence of gastrointestinal symptoms of lactose intolerance (diarrhea, abdominal pain, flatulence, abdominal distension, nausea and borborygmi) were recorded during the test and the following 24 hours. Calcium intake was evaluated by the 24-hour dietary recall. Results: Ninety Japanese-Brazilian subjects were studied (43 females, 47.8%; 47 males, 52.2%). Sixty subjects (66.7%) had Japanese ancestry via mother and father and were considered “Japanese” and 30 (33.3%) had Japanese ancestry from either mother or father and were considered “Mixed Race”. Lactose malabsorption was higher in “Japanese” (96.7%, 58/60) than in “Mixed Race” (73.3%, 22/30; p=0.002). Lactose intolerance was higher in the “Japanese” (77.6%) than in “Mixed Race” (54.5%; p=0.043) and was more frequent when the increment of hydrogen was higher than 30 ppm. With regards to calcium intake, 87 of the 90 subjects consumed less than the adequate intake (AI- Dietary Reference Intakes-DRIs). Conclusion: This study
confirmed the influence of race on primary adult type hypolactasia and lactose intolerance, because there was a higher prevalence towards lactose malabsorption and intolerance in the Japanese-Brazilian children and adolescents. The prevalence towards lactose malabsorption and intolerance was higher and more frequent in “Japanese” than in “Mixed Race”. Calcium intake was lower than that recommended.

P0392

Title: Low intake of dietary fiber is associated with overweight in girls with chronic constipation and in the mothers of pediatric patients with chronic constipation

Carolina Santos Mello 1, Karine C Freitas 1, Soraia Tahan 1, Ulysses Fagundes-Neto 1, Mauro B de Morais 1
1) Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil

Summary:
Objective: To study the relationship between the consumption of dietary fiber by patients with chronic constipation and the ingestion of dietary fiber of their mothers. To evaluate the relationship between the consumption of dietary fiber and the occurrence of overweight. Methods: Study involving 38 children (aged between 2 and 18 years, 23 being males) diagnosed with chronic functional constipation in accordance with the criteria laid out in Rome III. Dietary fiber consumption was analyzed for 3-day food record. For the patients, the recommendation of the minimum consumption equivalent to age in years + 5 was considered. For the adults, 20 g was considered as the minimum acceptable daily dietary fiber intake. The patients and mothers weight and height were recorded on the day involving the study. Overweight was assigned to patients when their BMI (weight/height²) was above the 85 percentile for their age and sex. For the mothers, overweight was recorded when their BMI was greater than 0.25. Results: Of the 38 patients with chronic constipation, 14 (36.8%) exhibited overweight. Overweight was more common with the females (55.0% as against 45.0%, p=0.17). The majority of the patients (34/38; 89.5%) recorded dietary fiber intake inferior to their age + 5. The average percentage of adequate dietary fiber ingestion in relation to the recommended minimum was lower in the overweight patients (n=8; 43.4±21.3%) when compared with the other female patients (n=7; 84.1±30.7%, p=0.015), demonstrating an association between insufficient consumption of dietary fiber and overweight. With the male patients, (n=23), these values were 61.0±b29.9% (n=6) and 63.3±b25.6% (n=17; p=0.865) respectively. With the mothers, overweight was verified in 60.6% (23/38). Only one (2.6%) of the 38 mothers exhibited dietary fiber ingestion higher than the minimum recommendation (20 grams/day). Dietary fiber consumption by the overweight mothers [8.2 g (6.5 ¡V 9.3)] was lower (p=0.027) in relation to the other adults [10.3 g (9.2 ¡V 12.2)]. A statistically significant correlation was observed between the dietary fiber consumption by patients with constipation and their mothers (r=+0.56; p<0.01). Conclusion: From the statistical point of view, the ingestion of dietary fiber by the pediatric patient is influenced in around 30% (r²) of cases by their mother’s eating practice. An association between overweight and low dietary fiber consumption in both mothers and female patients was observed.

P0393

Title: The consumption of HP inulin and oligofructose prebiotics increases the cecum and colon mucosa heights in growing rats

Karine C Freitas 1, Francy R S Patricio 1, Olga M S Amancio 1, Ulysses Fagundes-Neto 1, Mauro B de Morais 1
1) Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil

Summary:
Objectives: To evaluate the effects of HP inulin and oligofructose on the cecum and colon intestinal morphology of rats during their growth phase, and to verify if prebiotics with different degrees of polymerization (HP Inulin – high degree of polymerization and oligofructose – low degree of polymerization), bring about different alterations in the morphometry of the epithelium of the cecum, proximal and distal colon when compared to rats fed without dietary fiber. Methods: 24 male Wistar rats, weaned at 21 day, were fed with AIN-93G feed for 6 consecutive weeks. The animals were divided into three groups: (1) an HP inulin group - with 100 g of HP inulin/kg of diet; (2) an oligofructose group - with 100 g of oligofructose/kg of diet and (3) a control group in which the dietary fiber was substituted by corn starch. Food intake was measured daily and the weights and body lengths evaluated weekly. The intestinal morphometry was checked by way of the crypt depth, total mucosa thickness and muscle thickness, and all measurements were carried out using an Image Tool program. Results: There was no significant difference in food intake, weight and body length. The morphometric measurements are given in the table below: Legend of the table: CD- Crypt Depth; TMT- Total Mucosa Thickness; MT– Muscle Thickness. Values are means ± standard deviation or medians (percentiles 25 – 75). The different letters on the same line represent significant statistical differences when comparisons are made between groups (p<0.05). Conclusions: The ingestion of HP inulin and oligofructose prebiotics generated a trophic effect upon the intestinal surface in relation to the animal group without dietary fiber, which appears to be related to the degree of fermentation of each prebiotic type.

Segment Measurements HP inulin (n=8) Oligofructose (n=8) Control (n=8)
P0394

Title: The efficiency of trimethoprim-sulfamethoxazole and metronidazole in the treatment of bacterial overgrowth and malabsorption of D-xylose in children with environmental enteropathy

Soraia Tahan 1, Lígia Cristina F. L. Melli 3, Carolina Santos Mello 1, Miriam Silva C. Rodrigues 2, Ulysses Fagundes-Neto 1, Mauro Batista de Morais 1

1) Pediatric Gastroenterology Division, Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil 2) Foundation Institute of Education for Osasco - University Center FIEO (UNIFIEO), Osasco, Brazil 3) Health Secretary - City Hall of the City of Osasco and Foundation Institute of Education for Osasco - University Center FIEO (UNIFIEO), Osasco, Brazil

Summary:
Objective: To evaluate the therapeutic efficiency of a trimethoprim-sulfamethoxazole and metronidazole mixture in the treatment of children with small intestinal bacterial overgrowth (SIBO) and/or malabsorption of D-xylose secondary to environmental enteropathy. Methods: 84 children living in a slum in the town of Osasco, Sao Paulo State, were tested for H2 in their expired breath using lactulose and the D-xylose absorption test to describe environmental enteropathy. After fasting and the collection of expired air, 10 g of lactulose were administered. Breath samples were collected after 15, 30, 45, 60, 90, 120, 150 and 180 minutes. SIBO was defined when the H2 concentration was greater or equal to 20 ppm in relation to the fasting period and up to 60 minutes later. The non-production of H2 was described by a concentration lower than 10 ppm for up to 180 minutes. Five hours after the oral administration of 5 g of the sugar the D-xylose urinary excretion test was performed. D-xylose malabsorption was recorded when the D-xylose absorption was below 16%. Environmental enteropathy was considered to be present when SIBO and/or malabsorption of D-xylose occurred. Children with an alteration in their H2 test of expired air and/or in their D-xylose absorption were treated with trimethoprim-sulfamethoxazole (TMP-SMT, 30mg/kg/day) and metronidazole (MTZ, 480 mg per day) administered in two daily doses for 14 days. One month after the end of the treatment period a new H2 test on expired air and/or D-xylose absorption was performed. Of the 84 children evaluated, 20 (28.2%) had demonstrated the presence of SIBO in accordance with their respiratory test. D-xylose malabsorption had occurred in 4 (4.7%) of the evaluated children. Results: One month after treatment with the TMT-SMT + MTZ combination, 95.0% of the children (19/20) who had presented SIBO before treatment no longer had the problem. All 4 children who had shown poor D-xylose absorption presented normal results after treatment. Conclusion: The combination of trimethoprim-sulfamethoxazole and metronidazole was successful in treating slum children and normalized their respiratory test and D-xylose absorption.

P0395

Title: REACTIVE OXYGEN RADICAL ALTERATIONS AND THE EFFECT OF ANTIOXIDANT TREATMENT AND MITOMYCIN C IN CORROSIVE ESOPHAGITIS IN RAT MODEL

Meltem Ugras 1, Mustafa Deniz 2, Cigdem Celikel 3, Goksenin Unluguzel 4, Deniz Ertem 1, Ender Pehlivanoglu 1

1) Marmara University Department of Pediatric Gastroenterology, Hepatology Nutrition, Istanbul, TURKEY 2) Marmara University Department of Physiology, Istanbul, TURKEY 3) Marmara University Department of Pathology, Istanbul, TURKEY 4) Marmara University Department of Biochemistry, Istanbul, TURKEY

Summary:
Introduction: Corrosive substance ingestion is a serious health problem in developing countries. Acute effects of ingestion are esophageal burn, ulceration and perforation. Esophageal stricture is the most serious late complication of esophageal injury. Early damage is shown to be related to reactive oxygen radical (ROR) formation and thus, antioxidants should be considered to prevent or lessen the damage of the esophagus. Mitomycin
C (MMC) is an antitumor agent which is used to prevent fibrosis and stenosis after minor surgical procedures. This study was designed to investigate preventive effect of local mitomycin C, intraperitoneal melatonin and zinc sulphate on acute and late phases of corrosive injury. Method and materials: Gehanno model was used to create corrosive esophagitis (CE) in rats. Sixty Sprague Dawley rats were divided into 5 groups: Group 1: Sham operated, Group 2: CE + intraperitoneal (ip) administration of serum physiologic, Group 3: CE + ip administration of melatonin , Group 4: CE + ip administration of zinc sulphate, Group 5: CE + intraesophageal administration of Mitomycin C. Each group was divided into two subgroups to be sacrificed on the 5th (early phase) and 28th (late phase) days. Tissue luminol and lucigenin levels for ROR formation and malondialdehyde (MDA) level for lipid peroxidation were measured. Stenosis index, submucosal fibrosis, muscularis mucosa and muscularis propria damage were determined histopathologically. Results: When compared to group 1, luminol and lucigenin were increased and MDA was decreased in early phase in group 2, while fibrosis and stenosis index were increased in late phase (p<0.05). In group 3, MDA and stenosis index were significantly lower than group 2 in early and late phases, respectively (p<0.05). In group 4 and group 5, no significant biochemical alteration was observed while stenosis index was significantly lower than group 2 in late phase (p<0.05). Conclusion: Free oxygen radicals are increased in the acute phase of corrosive injury. Melatonin, zinc sulphate and mitomycin C are promising to prevent esophageal stricture formation in rat model. KEY WORDS: Child, corrosive esophagitis, esophageal stricture, antioxidant, melatonin, zinc sulphate, mitomycin C.

P0396

Title:
Ethanol-Lock Technique for Treatment of Persistent Catheter Related Infections in Children with Intestinal Failure

Nadia Ovchinsky 1, Bernard R Lee 1, Joanne Carroll 1, Dominique Jan 1, Mercedes Martinez 1, Steven J Lobritto 1
1) Columbia University College of Physicians and Surgeons, New York, US

Summary:
Objective: To evaluate efficacy and safety of the Ethanol-lock Technique (ELT) in conjunction with systemic antibiotics in children with intestinal failure (IF) receiving Parenteral Nutrition (PN) as a means to treat persistent Catheter Related Infections (CRI), to salvage central lines from removal, and to prevent recurrence of infection. Methods: Patients' medical records and pharmacy dispensing records of ethanol locks were retrospectively reviewed. Inclusion criteria: dependence on PN for IF, persistence of positive blood cultures after administration of appropriate intravenous antimicrobial therapy for 48 hours, absence of allergy to ethanol, patent catheter lumen. The lock of 74% ethanol had a dwell time of 12 to 24 hours for one or two consecutive days. Treatment success was defined as resolution of positive blood cultures without recurrence of the same organism within 30 days and retention of the central venous catheter. Results: 30 ELT were performed in 15 patients. Median age was 2.5 years. Short Bowel Syndrome accounted for 60% (9/15) of the underlying etiology of IF. Other diagnoses included pseudo-obstruction syndrome, microvillous inclusion disease, and immunodeficiency syndrome. Ninety percent (27/30) of the infectious episodes were treated successfully without recurrence; central venous catheters were removed in three patients (10%). Ninety one percent (21/23) of monomicrobial infections and eighty six percent (6/7) of polymicrobial infections were treated successfully. Sixty percent (3/6) of yeast isolates were treated without recurrence. Treatments were well tolerated. Conclusion: This retrospective analysis suggests that ELT is an effective and safe method for treatment of persistent CRIs in children with IF. Salvaging catheters in these children is essential to their survival as central access is the only method for administration of long-term PN. A prospective, randomized trial comparing the ELT to conventional antibiotic therapy is needed to conclusively determine the value of ELT in treatment of CRIs, retention of central catheters, and prevention of multi-drug resistance.

P0397

Title:
Treatment of Intestinal Ulceration after Solid Organ Transplant with Mesalamine: 2 Case Reports and Review of the Literature

Adebowale Adeyemi 1, Ali A. Mencin 1, Patricia Harren 1, Steven J. Lobritto 1, Dominique Jan 1, Mercedes Martinez 1
1) Columbia University College of Physicians and Surgeons, New York, USA

Summary:
Introduction: Intestinal ulceration is a known complication in pediatric patients who have undergone small bowel, liver or combined small bowel and liver transplants. Management of this clinical entity presents a significant diagnostic and therapeutic challenge. In this abstract we present two patients in which the successful management included the use of mesalamine. Case 1: A 1 year old girl who had a combined liver and small bowel transplant secondary to short bowel syndrome from gastroschisis presented 6 months post transplant with poor appetite and diarrhea. Colonoscopy revealed three large ulcers in the colon, one at the junction of the colon and transplanted small bowel. Biopsies demonstrated patchy ischemic changes with absence of atypical lymphoid proliferation or features of rejection. Serum and pathologic studies for viral causes were normal. Ganciclovir, metronidazole and mesalamine were started after the endoscopy. Repeat endoscopy showed features of grade 1 graft versus host disease but intestinal ulcers had endoscopically resolved. Case 2: A 16 year old male who received an orthotopic liver transplantation for hepatocellular
carcinoma presented with bloody stools 7 weeks after his transplant and 11 days after his last chemotherapy (gemcitabine, oxaliplatin, avastatin). Colonoscopy revealed multiple large ulcerations in the ileum. Biopsies demonstrated an ulcerated ileal mucosa with erosion of a small artery. The features were suggestive of a drug reaction, perhaps from one of the chemotherapeutic agents with known gastrointestinal vascular complications. Mycophenolate and avastin were discontinued. However, hematochezia with ileal ulcers did not resolve until therapy with mesalamine was initiated. Discussion: Intestinal ulcers are a complication in pediatric patients with abdominal solid organ transplants and pose both a diagnostic and therapeutic challenge. Although both patients had different etiologies of their intestinal ulcers, the addition of mesalamine to their treatment regimens appeared to help resolve their ulcers and symptoms. These two cases illustrate the broad differential diagnoses for ulcers after abdominal solid organ transplant and suggests that the use of mesalamine should be further studied as a therapeutic option in these cases.

P0399

Title:
Remission of chronic diarrhea in a HIV infected child after zidovudine, nevirapine and lamivudine therapy

Karlla D X Bomfim 1, Edvaldo S Souza 1, Eduarda N Faria 1, Margarida C Antunes 1, Michela C R Marmo 1
1) Instituto Materno-Infantil Professor Fernando Figueira, Recife, Brazil

Summary:
Objective: To describe the case of a child with HIV infection who had remission of chronic diarrhea few days after starting treatment with zidovudine, nevirapine and lamivudine. Methods: case report Description: J.F.S., female, proceeded from northeast of Brazil, 2-years-old, admitted in a children’s home because of parents negligence; mother was alcoholic and had multiple sexual partners. Elisa HIV 1 and 2, HBsAg and Anti HCV IgG negatives on admission. Three months after admission, the child initiated diarrhea with 3 to 4 semi-liquids evacuations with no blood, no mucus and no pus, without vomiting or weigh lost (maintenance in the 5th weight-for-age percentile of NCHS/WHO Child Growth Chart 1977) or perianal enantema; abdominal distension was present. When diarrhea persisted laboratory findings were Hoffmann negative (3 samples), stool pH (6,0), reducing substances (negative) and Sudam (negative). Free cow milk diet, albendazol and zinc sulfate were prescribed. The child began to lose weigh (approximately 1kg/month) on the fourth month after beginning diarrhea. Iontophoresis and anti-endomysium antibody were negatives; IgM was normal; IgG and IgA were small elevated; a histologyc duodenus fragment showed inespecific chronic duodenitis. On the fifth month of diarrhea, the child became febrile. Weigh loss reached the 0,1 percentile. She was admitted on inpatient clinics. A new Elisa HIV 1 and 2 was reagent; tuberculin test was 13mm; thoracic x-ray was normal. Antiretroviral therapy was initiated (zidovudine-200mg/m2 12/12h, nevirapine-150 mg/m2 12/12h and lamivudine-4mg/kg/dia) and isoniazide (10mg/kg/dia) was prescribed for six months. Fever stopped after one week of therapy. Diarrhea remitted after fourteen days of anti-retroviral therapy and nutritional recuperation was initiated. The 3th and 10th weight-for-age percentiles were reached after three and six months of treatment. She evolves with no relevant clinical problems and with maintenance in the weight-for-age (15 th percentile) and length-for-age (5th percentile) curves. Conclusion: The remission of diarrhea and weigh recuperation after treatment with zidovudine, nevirapine and lamivudine in a HIV infected child suggest that the chronic diarrhea was due to HIV.

P0400

Title:
A randomized, double blind, placebo controlled, multi-center trial of amitriptyline in children with functional abdominal pain

Miguel Saps 1, Nader Youssef 2, Adrian Miranda 3, Samuel Nurko 4, Jose Cocjin 5, Carlo Di Lorenzo 6
1) Children’s Memorial Hospital, Chicago, IL, United States 2) Goryeb Children’s Hospital at Atlantic Health, Morristown, NJ, United States 3) Medical College of Milwaukee, Milwaukueee, WI, United States 4) Children’s Hospital Boston, Boston, MA, United States 5) Children’s Mercy Hospital, Kansas City, MO, United States 6) Nationwide Children’s Hospital, Columbus, OH, United States

Summary:
BACKGROUND: Functional Abdominal pain (FAP) is common in children. Treatment is mostly empirical and not evidence based. Antidepressants are commonly used to treat FAP. To date there has been no prospective, multicenter double blind placebo (PL) controlled randomized trial in the treatment of FAP in children. AIM: Evaluate the effect of amitriptyline (AM) in children with FAP. METHODS: Children from six tertiary care centers diagnosed with FAP (Rome II criteria) were randomized to 4 wks PL or low dose AM 10 mg/d in patients <35 kg or 20 mg/d >35 kg. Comprehensive evaluation of GI symptoms, psychological traits and ability to perform daily activities was conducted before and after intervention. Pain was assessed by daily diaries (visual analogue scale 1-100 mm). Primary outcome was overall response to treatment (child/family assessment of pain relief and sense of improvement). Secondary outcomes included effect on psychosocial traits and ability to perform daily activities. RESULTS: 90 children (mean 12.7, range 8-17 y) were enrolled, 83 completed the study (placebo: 40, 30 females; drug: 43, 35 females). 3 children (2 PL, 1 AM) discontinued for mild adverse events (fatigue, constipation, rash). Patients reported feeling better 63%, worse 5% in AM arm and feeling better 58%, worse 3% in PL arm (p=0.85). Number needed to treat=19. Absolute risk reduction=5.3%. Pain relief was considered excellent (7%), good (35%) in AM and excellent (15%), good (35%) in PL (p=0.85). Logistic regression analysis of patients reporting response to drug as excellent or good com-
pared with those reporting fair, poor or failed showed no difference between AM and PL (p=0.83). Correlation between overall assessment of pain at end of study and daily assessment of pain by daily diaries was moderate (r=0.45, p<0.0001). Worse outcome was associated with baseline: 1) pain >60 mm in both groups (p=0.0065), 2) higher depression scores (p<0.0001). Age and gender had no effect on outcome. CONCLUSION: There was >50% improvement in abdominal pain in children receiving AM. There was no significant difference compared to placebo after 4 weeks of treatment. Patients with mild to moderate intensity of pain responded better to therapy. Those who had higher depression scores at baseline correlated negatively with sense of improvement.

P0401

Title: Abdominal Pain, School Grades and Absenteeism

Miguel Saps 1, Papa Adams 1, Carlo Di Lorenzo 2
1) Children's Memorial Hospital, Chicago, IL, United States 2) Nationwide Children's Hospital, Columbus, OH, United States

Summary: BACKGROUND: Abdominal pain (AP) is common in children. Most cases of chronic AP children are diagnosed as a functional gastrointestinal disorder. Stress seems to have a role in triggering AP and functional AP (FAP). AP is more common during the school year than during summer. Traditionally children with FAP are often considered high achievers who strive to obtain the best possible grades in school. FAP has been associated with school absenteeism, a condition which leads to lower grades. Low grades could constitute an additional source of stress. There have been no studies analyzing academic performance in school children with FAP. AIMS: To evaluate grades in children with FAP. METHODS: A prospective study was conducted in school children 5-8th grade from a public school in Chicago representative of the demographics of the city. The study was approved by Children's Memorial Hospital IRB. Children completed validated weekly questionnaires of common GI symptoms during class in 2 consecutive school year periods (2005-06, 2006-07). Pain was assessed by selected questions from a validated and age appropriate questionnaire. Each week the children reported school absences and AP during the previous week. AP was graded in a 5 point scale: “not a lot” (0), “a little” (1), “some” (2), “a lot” (3) and “a whole lot” (4). Average grades (GPA) (0-4 range) for each of the years were obtained. Correlations between GPA and pain frequency and between GPA and pain intensity were calculated. RESULTS: 68 school children completed weekly questionnaires for 24 weeks in 2005-2006 and provided authorization for GPA release in the 2005-06 school year period and 95 did so in 2006-07 for 32 weeks. Average weekly pain was 0.5 (range 0 - 2.77) in 2005-06 and 0.39 (range 0 – 2.82) in 2006-07. On average, 38% of children reported pain each week in 2005-2006 and 23% of kids did so in 2006-2007. 28% of children missed at least one day of school for AP in 2005-06 and 25% in 2006-07. Those who missed school for AP missed an average of 2.7 days in 2005-2006 and 2.9 days in 2006-07. Average GPA was 3.4 (range 2.11 - 4.00) in 2005-06 and 3.3 (range 1.77 - 4.00) in 2006-07. There was no linear relationship between GPA and pain frequency (Correlation coefficient: 0.04) or GPA and pain intensity (Correlation coefficient: 0.03). CONCLUSIONS: AP is common in school age children. More than 25% of children missed school for AP. No correlation was found between AP and school grades in school children.

P0402

Title: Seasonal Variation in Response to Treatment in Children with Functional Abdominal Pain

Miguel Saps 1, Nader Youssef 2, Adrian Miranda 3, Samuel Nurko 4, Amir Kaghalwalla 5, Carlo Di Lorenzo 6
1) Children's Memorial Hospital, Chicago, IL, United States 2) Goryeb Children's Hospital at Atlantic Health, Morristown, NJ, United States 3) Medical College of Wisconsin, Milwaukee, WI, United States 4) Children's Hospital Boston, Boston, MA, United States 5) University of Illinois at Chicago, Chicago, IL, United States 6) Nationwide Children's Hospital, Columbus, OH, United States

Summary: BACKGROUND: Studies have suggested that there is a seasonal pattern, with a predominance of winter consultations of children with abdominal pain (AP). Limitation of those studies included that ROME criteria were not used and organic diseases were not ruled out. AIMS: To study the seasonal variation of FAP in children on treatment. METHODS: We studied seasonal variability in children 8-17 y with normal laboratory tests and negative lactose breath test, diagnosed with FAP by Rome II criteria and who participated in a placebo controlled trial of amitriptyline (AM). Children were recruited from 6 centers in the US. Children completed daily measures of pain through validated visual analog scales (0-100 mm) for 1 wk at baseline and 4 wk of intervention (AM vs. placebo-PL). The intensity of pain (mm) per month and the results of treatment were analyzed according to the month of enrollment and day of the week. RESULTS: From 2002-06, 90 children (65 females, mean age 12.7 y) were randomized. There were no significant differences in pain between weekdays and weekends. Patients who had higher depression scores at baseline correlated negatively with sense of improvement.

Patients with mild to moderate intensity of pain responded better to therapy. Those who had higher depression scores at baseline correlated negatively with sense of improvement.
weekend in the AM (p=0.96) or PL (p=0.88) arms. CONCLUSION: There seems to be a seasonal variation in FAP in children that persists despite treatment. There was no difference in AP between weekdays and weekend days. DISCUSSION: This is the first study proposing a seasonal variation in FAP under treatment. The presence of lower pain level at the end of treatment in spring and summer may indicate that patients are more likely to achieve lower levels of pain during these seasons. Further studies to understand the genesis of the effect of seasonal variation are needed. Seasonal variation needs to be taken in account when designing non-controlled interventions trials in FAP.

P0403

Title:
Abdominal Epilepsy. 2 cases report

Milena A. Cabrera 1, Maria Batista 1, Isaura A. Cornelio 1, Jose A. Silié 1, Sarah E. Olivier 1
1) Hospital Infantil Dr. Robert Reid Cabral, Santo Domingo, Dominican Republic

Summary:
Abdominal epilepsy is an uncommon cause of recurrent abdominal pain (RAP). It is characterized by paroxysmal episodes of abdominal pain, multiple GI complaints, EEG abnormalities and favourable response after starting epilepsy drugs. We describe two pediatric patients with recurrent abdominal pain, without associated symptoms of CNS abnormalities, but each had definite EEG abnormalities and good response to anticonvulsants. Case 1: A 15 y/o girl presented with RAP, headaches and vomiting for the past 12 years. The pain was localized in the epigastric region and duration varied in ≤ 30 mins. Paroxysms were sudden in onset and subsided spontaneously. The episodes occurred monthly and were followed by lethargy. Last 4 years with anorexia and weight loss. Familiar hx of an epileptic uncle. Unremarkable physical examination and laboratory workup. A gastrointestinal barium study, cranial and abdominal CT scan and upper endoscopy were normal. EEG showed slow rhythm and generalized discharges. Remarkable response to carbamazepine confirmed the dx. Last 22 months w/o symptoms with good Tx compliance. Case 2: 8 y/o boy presented with vomiting and RAP for the past 5 years. Pain was mainly epigastric, paroxysmal, non radiating, each episode lasted 20-30 mins, with spontaneous resolution, recurring 2-3 times a month followed by lethargy. Gastric reflux was suspected, but prokinetic and H2 inhibitor didn’t help. EEG record showed generalized spike and waves discharges. Patient started treatment with Valproic Acid, being asymptomatic for past 14 months. Discussion: Abdominal epilepsy (AE) is a rare syndrome in which GI complaints result from seizure activity. Characterized by paroxysmal GI complaints associated with CNS disturbances, confirmed by an abnormal EEG and improvement with anticonvulsants. AE has been associated with sx such as: RAP, anorexia, vomiting, bloating and diarrhea. CNS sx described are: confusion, fatigue, headache, dizziness and syncope. Our patients had RAP and vomiting like most important complaint. The CNS manifestations in our patients were subtle, with only one presenting headache as a predominant symptom. Lethargy was remarkable after symptoms remission like a post-ictal state. EEG presented sharp waves/spikes from one or both temporal lobes as most frequent changes. Matching with our cases. Regarding Tx, there’s no consensus yet, many antiepileptics have seemed to work. Our patients were treated with valproic acid and carbamazepine with relief in a 18 months F/U. Most me R/O with an EEG

P0404

Title:
Patterns of Coeliac Disease Presentation in Lincolnshire

S Loganathan 1, A Asokkumar 1, M Suresh-Babu 1
1) Lincoln County Hospital, Lincoln, United Kingdom

Summary:
Background: Coeliac Disease (CD) is an immune-mediated enteropathy caused by a permanent sensitivity to gluten in genetically susceptible individuals. A disease previously considered as rare with prevalence of 1:2500, is now recognized to have a prevalence of 1:80-1:300. The classical age of presentation is 6-24 months but now more children present at later age with atypical manifestations. Objective: To determine the pattern of presentation of CD in children in Lincolnshire. Methods: Retrospective case notes review of children diagnosed with CD during the period 1999 to 2007
in a large District General Hospital, which provides paediatric gastroscopy service in the County of Lincolnshire (2nd largest County in England). Patients diagnosed elsewhere and moved to Lincolnshire were excluded from the analysis. Results: A total of 72 patients (29 boys; 43 girls) were reviewed. 61 patients had characteristic biopsy. (n=61). All but 2 patients with positive biopsy had negative serology (3%). 11 serology positive patients had normal biopsy and were classified as Latent Coeliac, of which 1 patient on follow up developed positive biopsy. The median age at diagnosis was 6 years (10 months -16 years) and median duration of symptoms was 5.5 months (0-60 months). Of 61 patients 50(82%) were symptomatic and 11(18%) were asymptomatic. In the symptomatic group 38 (76%) presented with mild gastrointestinal symptoms (GI) of which 8 also had insulin dependent diabetes mellitus (IDDM), 7 (14%) with iron deficiency anaemia, 3 (6%) with faltering growth, 1(2%) with Dermatitis herpiformis and 1 with non-specific tiredness. Of the asymptomatic group, 3 had IDDM, 2 had Down’s syndrome, 1 had William’s syndrome, 1 had Turner’s syndrome and 4 were siblings of CD. 9 patients (15%) had first degree relative with CD. A wide variety of autoimmune disorders were seen in these children i.e hypothyroidism, juvenile rheumatoid arthritis. Conclusion: This review confirms the extremely polymorphic nature of CD and the change in clinical presentation in a district hospital setting. A high index of suspicion is necessary in all age group of children as CD can present with atypical symptoms and can be silent. Sibling screening should become a routine. Early detection is vital to prevent complications. General practitioners need to be updated about its changing presentation.

P0405

Title:
Bile and acid reflux in the pathogenesis of reflux esophagitis in children

Mizu Jiang 1, Jie Chen 1, Jindan Yu 1, Jianfeng Liang 1, Yanyi Zhang 1
1) Children’s Hospital, Zhejiang University School of Medicine, Hangzhou, China

Summary:
Objective: To investigate the role of bile and acid reflux in the pathogenesis of reflux esophagitis (RE) in children. Methods: Esophageal 24-hr Bilitec 2000 bilirubin monitoring and pH monitoring were performed simultaneously in 44 patients aged 5-17 years with gastroesophageal reflux (GER) symptoms, and all patients had endoscopy. Results: According to the diagnostic criteria, 10 of 44 cases (22.7%) were found acid reflux, 10 cases (22.7%) with bile reflux, 16 cases (36.4%) with mixed acid and bile reflux, and other 8 cases (18.2%) were no reflux. Significant difference was observed in the ratio of different patterns of reflux between the RE group (26 cases) and the non-RE (NERD) group (18 cases) (\(\chi^2=9.096, P<0.01\)). All the parameters of acid reflux in RE group were higher significantly than that in NERD group (P<0.05 or P<0.01). Total 20 out of 26 cases (76.9%) with RE had esophageal acid reflux as against 6 of 18 cases (33.3%) in patients with NERD (P<0.05). The difference of each parameter of bile reflux had not reached significance between the two groups. Conclusions: Mixed reflux is the predominant form of reflux in the causation of esophageal mucosal injury in children. Isolated bile reflux does not seem to play a role in the development of RE compared to acid reflux alone.

P0406

Title:
The influence of bile reflux on the gastric mucosal injury and HP infection in children

Mizu Jiang 1, Aiju Ying 1, Weizhong Gu 1, Jindan Yu 1, Jie Chen 1
1) Children’s Hospital, Zhejiang University School of Medicine, Hangzhou, China

Summary:
Objective: To investigate the pathological feature of primary bile reflux gastritis (BRG) in children and its relationship to Helicobacter pylori (HP) infection. Methods: A fiberoptic spectrophotometer (Bilitec 2000, Medtronic) was used for 24-hr gastric bile monitoring in 59 children with upper digestive symptoms because of bile-stained mucosa diagnosed by gastric endoscopy. The score of gastric mucosal histologic examination such as the degree of inflammation, inflammatory activity, lymphatic follicle hyperplasia, antral atrophy, intestinal metaplasia, HP infection, foveolar hyperplasia, vascular congestion, edema, and prominent smooth muscle fibers in the lamina propria were evaluated. Pathological duodenogastric reflux (DGR) was defined if the total fraction time of bile reflux (gastric bilirubin absorbance>0.14) above 30%. Results: The pathological DGR was observed in 25 cases out of 59 patients (42.4%). The histologic alterations observed from tissues collected during endoscopic examination were: active inflammation in 12 cases, lymphatic follicle hyperplasia in 12 cases, intestinal metaplasia in 3 cases, HP infection in 13 cases, foveolar hyperplasia in 10 cases, vascular congestion in 38 cases, edema in 31 cases, and prominent smooth muscle fibers in the lamina propria in 22 cases, no any antral atrophy was observed in all cases. The degrees of inflammation were mild in 34 cases, moderate and severe in 19 cases, other 6 cases were normal. The positive rate of pathological DGR, the longest reflux time, the total fraction time of bile reflux were significantly higher in patients with foveolar hyperplasia than those without foveolar hyperplasia. The positive rate of pathological DGR, the longest reflux time, the total fraction time of bile reflux were significantly lower in patients with vascular congestion than those without vascular congestion. No significant difference of positive rate and every parameters of bile reflux were observed in other different pathological alterations including HP infection. The 8 kinds of pathological alterations mentioned above except for gastric atrophy and intestinal metaplasia were analysed by Binary Logistic Regression. Foveolar hyperplasia and vascular congestion in superficial layer were became the significant variable in the last step. Foveolar hyperplasia was dangerous factor, and
vascular congestion was protective factor in patients with bile reflux. Conclusions: Foveolar hyperplasia was well correlated with the severity of bile reflux, to be suggested as pathological feature in children with primary bile reflux gastritis, while vascular congestion served as protective factor. Bile reflux was not related the HP infection in children.

P0408

Title: Chorea as a presenting manifestation of celiac disease in an adolescent girl: Case report.

Aakash Goyal 1, Janet Poulik 1, Mohammad F El-Baba 1
1) Children’s Hospital of Michigan, Detroit, Michigan

Summary:
Celiac disease (CD) is an immune-mediated disorder triggered by the ingestion of gluten in genetically susceptible individuals. Many patients are asymptomatic or have only extraintestinal symptoms at onset. Recently, there has been increasing number of reports describing neurological disorders in association with CD, notably cerebellar ataxia and peripheral neuropathy. There have been publications in adult literature which report movement disorders in relation to CD. In this report, we present an adolescent girl with CD and chorea who responded to gluten-free diet Case Report A 16-year old girl, previously healthy, presented with one-week history of epigastric pain and 4-day history of choreic movements of head and neck. The movements were involuntary side-to-side shaking of the head and neck that would last for several hours and disappeared during sleep. There was no diarrhea, weight loss, fever, sore throat, arthralgia, rash or history of medication intake. Her abdominal examination revealed epigastric tenderness. Neurological examination was normal except for the abnormal movements. Complete blood count, liver transaminases, serum ceruloplasmin, T4, TSH and anti-nuclear antibody-all were normal. Antistreptolysin O and Anti Strep Dnase B were high. Echocardiogram and magnetic resonance imaging of brain were normal. Patient underwent upper endoscopy for evaluation of persistent epigastric pain. Small intestinal biopsies showed villous blunting and increased intraepithelial lymphocytes. Tissue transglutaminase and endomysial IgA antibodies were high confirming CD. She was started on gluten-free diet, and when reviewed 6 weeks later, her pain had resolved and choreiform movements were markedly decreased. Discussion A wide spectrum of extraintestinal conditions has been described in association with CD. An increasing number of neurologic syndromes and abnormal movements are recognized in patients already diagnosed with CD or as initial manifestation of CD. Prevalence of neurologic complications is believed to be lower in children than adults. Chorea has been reported in adult patients with CD. We believe this is the first report of a pediatric patient with chorea and biopsy-proven CD who responded to gluten-free diet. Conclusion Screening for CD should be considered in children who present with unexplained neurologic disease or abnormal movements

P0409

Title: Does the Single stage Percutaneous Rapid INsertion of a Gastrostomy button (SPRING) technique prevent unnecessary anaesthetics?

Siddiqui MMF 1, Griffiths MD 1
1) Department of Paediatric Surgery, Southampton, England

Summary:
In children, Gastrostomy Buttons are normally inserted in 2 stages, with 2 General anaesthetics (GA). Many patients have poor respiratory function, so a single anaesthetic halves any risk. Method: Under GA, a gastroscope is passed, and 2 Cope Tags (COOK, Denmark C-GIAS-100-PED) positioned. A dilator and splittable sheath (COOK, Denmark C-PLI-18.0-38-7-11-J) are passed over a guidewire. The dilator is removed and a button inserted. The child is starved for 24 hours, feeds are introduced, the parents and child taught the technology and then discharged, usually home, at 48 hours. Patients: Between 1995 and January 2008, 172 children had a SPRING. One hundred seven had a neurological diagnosis, twenty-three had Cystic Fibrosis (CF), 9 had renal failure, and 33 had miscellaneous diagnoses. (Age 3-238 (mean 77) months, weight 3.3 – 73 (median 13.6?) kg. Results: 163/172 (94.8%) were successfully inserted using this technique. The final nine required a 2.5cm mini-laparotomy to identify the stomach, (a Gastroscopically assisted gastrostomy, GAG). 158 (91.86%) started feeds at 24 hours, and 158 (91.86%) were surgically discharged by 72 hours, though 14 stayed 4-32 (median 5) days. Eleven (6.39%) had a major complication requiring a 2nd GA for a laparotomy. (leak 2, button problems 7, pneumo-peritoneum 1, colonic perforation 1). Five had minor surgical complications (pneumo-peritoneum 1, button problems 2, abdominal distension 2). Only 4 children (CF 1, neurological 3) had postoperative pneumonia. Conclusion: A SPRING successfully avoids a second GA in 161/172 (93.6%) of children requiring a Gastrostomy Button.

P0410

Title:
Eosinophilic Gastritis presenting with Hematemesis in a 4-month old female infant

Aakash Goyal 1, Janet Poulik 1, Mohammad F El-Baba 1
1) Children’s Hospital of Michigan, Detroit, United States

Summary:
We are reporting a case of four-month old infant presented with hematemesis and bloody stools who was diagnosed with eosinophilic gastritis (EG) with normal esophagus, small intestine and colon. Patient responded to amino acid-based formula. Case Report: A 4-month old female infant, born at term after uneventful pregnancy and perinatal period, presented with two-month history of intermittent vomiting, hematemesis and loose stools. She was on cow’s milk-based formula. There was no weight loss, fever, rash or bleeding from other sites. On examination, there was mild pallor, and stool guiac test was positive. Her hemoglobin was 9.1 gm/dl, white blood cell count 20,600/mm3, and eosinophil count 2,500/mm3. Total IgE and milk-specific IgE RAST were both mildly elevated. Upper endoscopy showed erythema, friability and mucosal ulceration mainly in antrum. Esophagus and duodenum were grossly normal. Biopsy specimens showed sheets of eosinophils infiltrating the lamina propria and scattered throughout the glandular epithelium of stomach. Rare eosinophilic crypt abscesses were seen. Esophagus and duodenum were devoid of inflammation or eosinophilic infiltrate. She was placed on hydrolyzed casein formula and Lansoprazole. Vomiting and Gross hematemesis decreased; however, a repeat upper endoscopy after 6 weeks of therapy showed comparable findings to the initial endoscopy. Biopsies from sigmoid colon showed mild increase of eosinophils within lamina propria. Hemoglobin was 8.9 and stool guiac was positive. She was placed on amino-acid formula, and when reviewed six weeks later, her hematemesis and bloody stools resolved. Repeat hemoglobin was 11.9 and eosinophil count was 100.

Discussion: Eosinophils are normally present in variable numbers in the lamina propria of stomach, small intestine and colon. Primary eosinophilic gastrointestinal (GI) disorders are defined as eosinophilic infiltration and inflammation of the GI tract in the absence of known causes for eosinophilia. Presenting symptoms vary depending on the degree and area of the GI tract affected. In the majority of patients, serum IgE is elevated and peripheral eosinophilia is present. EG is usually the gastric component of eosinophilic gastroenteritis and isolated EG is rare. Conclusion: EG should be considered in the differential diagnosis of hematemesis in infants.

Orlistat Associated Pancreatitis in an Adolescent Female: Case Report

Aakash Goyal 1, Shashi Sahai 1, Mohammad F El-Baba 1
1) Children’s Hospital of Michigan, Detroit, United States

Summary:
Orlistat is a lipase inhibitor for obesity management that acts by inhibiting the absorption of dietary fats. We present a case of acute pancreatitis in an adolescent female who was taking orlistat to reduce weight. Case Report A 12-year old African American female presented with one-week history of abdominal pain and vomiting. There was no fever, jaundice or history of trauma. Her medications included orlistat 120 mg three times a day, albuterol and multivitamins. She had been on orlistat for one month. Family history was remarkable for diabetes mellitus in the mother. Her weight was 89 kg, height 160 cm and Body Mass Index of 35. She was afebrile and non-icteric. Her abdominal examination revealed generalized tenderness. Initial white blood cell count was 11,000/mm3. Amylase level on presentation was 82 units/liter (normal 20-150), maximum of 308 on 4th day of admission. Initial lipase was 1202 units/liter (normal 0-190), maximum of 2635 on the 3rd day. Lipid profile, calcium, transaminases, bilirubin and alkaline phosphatase levels were normal. IgM titers for Cytomegalovirus, Epstein Barr virus and mycoplasma were negative. Antinuclear antibody was negative. A computerized tomography of abdomen was consistent with acute pancreatitis of the body and tail of pancreas. There was no evidence of cholelithiasis. Diagnosis of drug induced pancreatitis secondary to orlistat was made by exclusion. Management was supportive and consisted of intravenous fluid therapy and pain management. The patient stayed in the hospital for 7 days because of continued pain and poor oral intake which improved through the course of hospitalization. Discussion Orlistat 120 mg is currently the only agent approved by the FDA for the management of obesity in adolescents. The major adverse effects are gastrointestinal such as fatty stool, fecal urgency and oily spotting. Systemic adverse effects are rare because of the lack of absorption. Placebo-controlled trials showed no increase in incidence of pancreatitis but there have been post marketing reports suggesting an association between orlistat and pancreatitis in adults. We found no case reports of orlistat associated pancreatitis in pediatric or adolescent age group. Conclusion Acute pancreatitis should be considered in adolescent patients taking orlistat who present with unexplained abdominal pain and/or vomiting.

Prevalence of H. pylori in Saudi children with chronic abdominal pain

Mohammad I El Mouzan 1, Asaad M Assiri 1, Abdulla A Al Sanie 1
Summary:
Objective: helicobacter pylori (H. pylori) is a common pathogen in children and the prevalence is higher in developing countries. However, its role in children complaining of chronic abdominal pain (CAP) has rarely been reported from our community. The objective of this report was, therefore, to determine the prevalence of H. pylori infection in children referred for endoscopy for the evaluation of CAP. Methods: data retrieved from the records included age, gender, endoscopic and histopathologic reports, H. pylori status, and final diagnosis. Indications for endoscopy included persistent moderate to severe pain interfering with normal activity in children with negative screening tests (CBC, ESR, Urine and stool analysis and abdominal ultrasound). H. pylori was identified in antral biopsy specimen by a modified Geimsa staining. Results: endoscopic diagnosis of organic disease was made in 88/192, giving a yield of 45.8%. These included peptic esophagitis, gastritis, gastroduodenitis, and peptic ulcer disease. H. pylori status was available in 75 histopathology reports, and was positive in 35 indicating a prevalence of 46.7%. Conclusion: H. pylori is a prevalent and treatable cause of CAP in children with negative screening tests.

P0413

Title:
Prevalence of H. pylori in Saudi children with gastritis

Mohammad I El Mouzan1, Asaad M Assiri1, Abdulla A Al Sanie1
1) King Saud University, Riyadh, Saudi Arabia

Summary:
Objective: information about childhood gastritis in developing countries is scarce, and the prevalence of Helicobacter pylori (H. pylori) has been rarely reported. The objective therefore was to determine the prevalence of H. pylori among Saudi children with gastritis. Methods: the data on children below 18 years of age referred for endoscopy for various gastrointestinal complaints (mostly commonly vomiting, hematemesis and abdominal pain), and with a diagnosis of histology-proven gastritis were reviewed. H. pylori organisms were detected by modified Giemsa stain of antral biopsy specimens. Results: one hundred and eleven out of 175 cases of gastritis had H. pylori organisms in the biopsy specimens giving a prevalence of 63%. The prevalence of gastritis increased with age from 9% in children below 5 years of age to 42% in adolescents 16-18 years of age. Likewise, the prevalence of Helicobacter pylori (H. pylori) gastritis increased from 47% in children below 5, to 62% in children 6-15 years of age, and 69% in children 16-18 year-olds. The prevalence of H. pylori gastritis was highest in cases of endoscopic nodular gastritis (92%). Conclusions: Compared to findings from various parts of the world, this report documents a high prevalence of H. pylori gastritis in Saudi children.

P0414

Title:
Abdominal pain in Brazilian children classified according to Rome III Criteria

Mônica D P C Aquino1, Mônica D P C Aquino1, Michela C R Marmo1, Michela C R Marmo1, Vera L Sdepanian1, Vera L Sdepanian1, Ulysses Fagundes-Neto1, Ulysses Fagundes-Neto1, Mauro B Morais1, Mauro B Morais1
1) Unifesp, Sao Paulo, Brazil

Summary:
Objective: To classify children presenting with non-organic abdominal pain according to Pediatric Rome III Criteria and to determine the predominant clinical category at admission in Brazilian children. Methods: Seventy five consecutives patients, aged from three to twelve years old, referred for evaluation of presumed chronic abdominal pain during a 24-month period in a pediatric gastroenterology outpatient clinic, were studied. Patients and his/her mother were interviewed concurrently and questionnaire items were integrated into the complete clinical history. The questionnaire included questions to identify: functional dyspepsia, irritable bowel syndrome, abdominal migraine, functional abdominal pain. Follow-up was performed at varied intervals depending on each individual case. Results: Ten patients did not fulfill the Pediatric Rome Criteria for abdominal pain considering that an organic disease was diagnosed. Sixty five patients fulfilled the Pediatric Rome III Criteria for abdominal pain at presentation: 44 patients (66.2%) fulfilled the Criteria for functional abdominal pain, 20 (30.8%) for functional dyspepsia and 2 (3.0%) for irritable bowel syndrome. Follow-up was performed at varied intervals depending on each individual case. Results: Ten patients did not fulfill the Pediatric Rome Criteria for abdominal pain considering that an organic disease was diagnosed. Sixty five patients fulfilled the Pediatric Rome III Criteria for abdominal pain at presentation: 44 patients (66.2%) fulfilled the Criteria for functional abdominal pain, 20 (30.8%) for functional dyspepsia and 2 (3.0%) for irritable bowel syndrome. During the follow-up, 41 patients (63.0%) changed their category of functional gastrointestinal disorders and were classified as functional constipation. This change occurred in 21 (47.7%) of the 44 patients who initially received the diagnosis of functional abdominal pain and in 4 (20.0%) of 20 admitted as functional dyspepsia. Conclusion: Only 3.0% of Brazilian pediatric patients with abdominal pain fulfill the Rome III Criteria for irritable bowel syndrome. The follow-up showed that functional constipation was the major functional gastrointestinal disorder in a significant group of patients that initially presented abdominal pain as the principal symptom.

P0415
Title: “Associated Acute Hepatic Insufficiency to Visceral Leishmaniasis; an infrequent presentation?”.

Mónica D Sprang 1, Fernando A Vinuesa 1, Liliana Arce 1, Carlos Rolón 1
1) Provincial Hospital of Paediatrics, Posadas, Argentina

Summary:
INTRODUCTION: The Visceral Leishmaniasis is a parasitic infection (anthropozoonosis) caused by protozoans of the sort Leishmania Donovani (L. Chagasi) and transmitted by flebótomos insects of the sort-species Lutzomya Longipalpis. It is developed in sub-acute form or chronic and it is characterized by prolonged fever, progressive thinning, linfadenopatías, hepato-esplenomegalia, pancitopenia, hipoalbuminemia and hipergama-globulinaemia. Although hepatomegalia is very frequent (> 90% of the cases), the hepatic enzymes usually are not mobilized; nevertheless the hepatic commitment can be due to severe cítolisis of hepatocitos, colestasis, hypertension vestibule and hepatic fibrosis. CLINICAL CASE: Patient of masculine sex, of 7 years of age that enters in evil been general to the Service of Emergencia. He presented/displayed compatible jaundice, cutaneou injuries with escabiosis, queilitis in labial comisura, mechanical respiratory difficulty given the great abdominal distension (hepato-esplenomegalia severe), circulation abdominal collateral. Laboratory: Hcto: 27% Leucocytes: 1200 (N 18% L 82%) Platelets: 42000 GSV: 20 mm T.Prothrombin: 37% BIT/D: 5,40/4,18 GPT: 155 GGT: 94 Ca: 4,87 Albumen: 1,44 Total proteins: 12,1 Globulines: 8,34 Alpha 1 Antitripsina: Normal LKM: Negative Chagas: Negative VDRL: Negative HIV: Negative HAV: Negative HBSAg: Negative HCV: Negative Monotest: Negative Toxo: 1/1024 IgG/M Leishmania: Negative. The urgent derivation to a Center of greater complexity is decided (National Hospital of Paediatrics Juan P. Garrahram); where it enters in Intensive Therapy in serious general state. Studies of laboratory, P.A.M.O (puncture-aspiration of bony marrow) and videoendoscopía are realised to him digestive discharge to present/display melena during the internment. The pathological anatomy demonstrates “moderate mielofibrosis” and “Duodenal Leishmaniasis”; reason why it receives treatment with Amphotericin B Liposomal: 3 mg/kg/día during five days, and the days 14º and 21º. CONCLUSION: The Visceral Leishmaniasis must be considered in the diagnosis differential of hepatitis associated to prolonged fever, like thus also in colestatics syndromes of originating patients of endemic areas for leishmaniasis. ); evidence exists that serious the hepatic commitment can happen in the beginning and not only in delayed form, which in addition can make difficult the precocious diagnosis.

Title: FECAL CALPROTECTIN CONCENTRATION IN CELIAC DISEASE

Mukadder Ayse Selimoglu 1, Vildan Ertekin 2, Ahmet Turgut 2, Nuri Bakan 3
1) Inonu University, Faculty of Medicine, Div. of Pediatric Gastroenterology, Hepatology and Nutrition, Malatya, Turkey 2) Ataturk University Faculty of Medicine, Div. of Pediatric Gastroenterology, Hepatology and Nutrition, Erzurum, Turkey 3) Ataturk University Faculty of Medicine, Dept of Biochemistry, Erzurum, Turkey

Summary:
Objective: Fecal calprotectin (FC) is a new quantitative marker of intestinal inflammation. Increased excretion of FC has been reported in several intestinal diseases, but no data are currently available for children with celiac disease (CD). In the present study, we aimed to determine FC concentration and its relation with histopathological findings in children with CD and to observe the probable alterations under gluten free diet (GFD).

Methods: FC of 29 children with CD on admission and 1-year after gluten free diet (GFD) and of 10 healthy children was determined. All 29 children with CD had classical form presented with chronic diarrhea and failure to thrive. FC concentrations were determined by ELISA. Results: Mean age was 6.6 ± 0.6 years (2-14 years). Mean FC concentrations of children with CD on admission and of healthy children were 13.40 ± 8.5 mg/l and 4.3 ± 3.3 mg/l, respectively (p: 0.004). FC concentration under GFD was 4.6 ± 2.7 mg/l and there was a significant statistical difference between untreated patients and those under GFD for one year (p: 0.001). There was no statistical difference between FC concentrations of those under GFD and healthy children (p: 0.8). Of 29 patients with CD, 12 (41.4%) had Marsh IIC, 8 (27.6%) had Marsh IIIB (27.6 %), and 9 (31%) had Marsh IIIa histologic lesions. Mean FC concentrations of children with Marsh IIC and Marsh IIIB were significantly different (13.8 ± 9.3 vs. 3.7 ± 1.8). Conclusion: It was determined that FC concentration is increased in childhood CD, related to the severity of histopathological findings and responsive to GFD. Further detailed studies might give clear clues about the role of FCC in CD.

Title: SWEAT TEST RESULTS IN CHILDREN WITH CELIAC DISEASE

Vildan Ertekin 1, Mukadder Ayse Selimoglu 2, Mustafa Kara 1, Sedat Isikay 1
1) Ataturk University, Faculty of Medicine, Div. of Pediatric Gastroenterology, Hepatology, and Nutrition, Erzurum, Turkey 2) Inonu University, Faculty of Medicine, Div. of Pediatric Gastroenterology, Hepatology, and Nutrition, Malatya, Turkey
Summary:
Objective: Celiac disease (CD) is a very common malabsorption syndrome and is reported to be one of the causes of false positive sweat test results. However, there is no data on the sweat test results of those patients in the literature. In the present study, we aimed to determine sweat test results in children with CD and to find out if any correlation exists between sweat test results and clinical presentation of CD. Methods: One hundred and five children with CD and 20 sex and age-matched healthy children were included. Mean age of the patients was 9.1 ± 4.2 years (2.5-14 years). Sweat tests were performed using the Gibson Cook method. Results: Mean sweat Cl concentration of children with CD and control group were 29.4 ± 13.9 mEq/l and 6.6 ± 4.9 mEq/l respectively (p<0.001). Of patients 58 (55.2%) were newly diagnosed ones, remaining 47 (44.8%) were on GFD. Of 105 patients with CD, 59 (56.2 %) had classical form, and the remaining 46 (43.8%) had atypical form. In both newly diagnosed group and under GFD, the presence of malnutrition increased sweat Cl concentration values significantly (<0.001, and p: 0.001, respectively). In newly diagnosed group, classical presentation compared to atypical presentation increased Cl concentration (p: 0.001). When all 105 children were evaluated, both classical presentation and the presence of malnutrition increased sweat Cl concentration values significantly (<0.001, and p: 0.001, respectively). Nine (8.6%) patients had Cl values higher than 60 mEq/l. All nine patients with positive sweat test results had classical form CD. Eight (88.9 %) had third degree malnutrition according to Waterlow classification and one (11.1 %) had second degree malnutrition. Sweat test results of CD in respect with the degree of malnutrition were shown in Table 1. Conclusion: It seems that positive test is closely related to the malnutrition component of CD not to the disease itself.

<table>
<thead>
<tr>
<th>Degree of malnutrition (n) (%)</th>
<th>Cl(mEq/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CD without malnutrition 44 41.9 21.8 ± 7.4</td>
<td></td>
</tr>
<tr>
<td>First degree malnutrition 28 26.7 27.6 ± 8.0</td>
<td></td>
</tr>
<tr>
<td>Second degree malnutrition 17 16.2 33.7 ± 9.2</td>
<td></td>
</tr>
<tr>
<td>Third degree malnutrition 16 15.2 48.7± 19.6</td>
<td></td>
</tr>
</tbody>
</table>

P0418

Title: ULSERATIVE COLITIS IN TURKISH CHILDREN; AND PREDICTIVE FACTORS FOR RESPONSE TO STEROID THERAPY

Funda O zgenc 1, Murat Cakir 1, Cigdem Arikan 1, Hasan Ali Yuksekkaya 1, Masallah Baran 1, Rasit Vural Yagiçi 1
1) Ege University department of Pediatric Gastroenterology Hepatology and Nutrition, Izmir, Turkey

Summary:
Objective: An increase prevalence of inflammatory bowel disease has been indicated in several studies. There is no data on the demographic and clinical findings and outcome about ulcerative colitis (UC) in Turkish children. Therefore, we aimed to analyze demographic and clinical features, laboratory findings and upper GI endoscopy and colonoscopy findings with histology and outcome of Turkish children and adolescent with UC. We also analyze the predictive factors for response to first line steroid therapy. Methods: The study included the children and adolescent diagnosed as UC between 1999 and 2007. They were investigated clinically, laboratory and by colonoscopy with histology. Pediatric UC score (PUCAS) were calculated as defined elsewhere. Risk factors were analyzed for the first line steroid failure. Results: Totally 35 children were diagnosed as IBD during this period and 24 of them (68.5%) were UC. Mean age ± SD at the time of diagnosis were 11.5 ± 3.3 years (range 4 months to 17 years), and 54.2% of the patients were female. Mean time interval from onset of symptoms to diagnosis was 5 months. Family history for the IBD was present in 2 patients (8.3%). One patient had autoimmune hepatitis and the other chronic lung disease prior the diagnosis. Major symptom was bloody diarrhea (45.8%), abdominal pain (8.3%) and chronic diarrhea (25%). Weight loss was found in 20 patients (83.3 %), and short stature in 13 patients (54.1%) at initial examination. 15 children (62.5%) had anemia, and all the children had increased CRP and sedimentation rate. 8 children (33.3%) had pANCA positivity. Mean PUCAS was 57.8 ± 13.7. Colonoscopy revealed pancolitis in 18 patients (75%), left sided colitis in 6 patients (25%). On histological examination; distortion of mucosal architecture, cryptitis, crypt abscess, lymphoid aggregates, and basal plasmositosis were found in 75%, 100%, 58.3%, 37.5% and 37.5% of the patients, respectively. 5 patients (20.8%) had gastritis in endoscopy. All the patients were given i.v steroids as a first line therapy in addition to supportive treatments. Seven children (29.1%) did not respond the i.v steroids, and 4 received cyclosporine, 2 infliximab and one tacrolimus as second line treatment. One of these children underwent surgical resection. PUCAS was found the only predictor for response the first line therapy (52.7 ± 13.8 versus 69 ± 2.2, p=0.003). Other factors do not have any impact on the steroid response. Conclusion: Our study showed age onset of UC is decreasing with an increasing incidence of severe pancolitis. PUCAS found the only predictor of first line steroid therapy.

P0419

Title: Diarrhea for Norovirus in children hospitalized in a Public Pediatric Hospital in Rio de Janeiro, Brazil.

Rocha M 1, Ferreira MSR 2, Kuschnir MC 3, Oliveira V 1, Miagostovich MP 2, Leite JPG 2
1) Municipal Jesus Hospital, Rio de Janeiro, Brazil 2) Laboratory of Comparative Virology, Oswaldo Cruz Institute, Rio de Janeiro, Brazil 3) Faculty of Medicine, University Estácio de Sá, Rio de Janeiro, Brazil

**Summary:**
Noroviruses (NoV) are considered one of the main causes of acute gastroenteritis in different ages. There are few reports of these viruses in developing countries, including Brazil, mainly in hospitalized children. The main of this study is to describe clinical and epidemiologic characteristics of hospitalized children with diarrhea disease associated with NoV infection at Hospital Jesus, a public pediatric unity for low income population in the Rio de Janeiro municipality. Stools samples were collected between January 2004 and December 2006, and analysis by the RT-PCR was performed using primers Mon 431-434. Data concerning age, sex, nutritional status of the National Center for Health Status (NCHS), presence of blood in stool, fever, cutaneous rash and vomits also had been evaluated. The frequencies of the study variables and the incidence of diarrhea disease for NoV throughout the 36 months had been verified, excluding the nosocomial infections. A total of 368 children and an equal number of stool samples were collected and analyzed by RT-PCR, of which 79 (21.5%) had been positive for NoV. Among these, 70.8% were of female patients, 36 (45.6%) had age between 0 and 12 months, 15 (19%) between one to two years old, 16 (20.3%) two to five years, and 12 (15.2%) had age above five years old. Twenty-one (31.3%) out of 67 children positive for NoV by RT-PCR, had weight below of 3rd percentile (NCHS). It was observed in 60 children: vomits in 46 (77%), fever (superior 37.8ºC) in 31 (51.7%), cutaneous rash in 6 (10%) and presence of blood in stool in nine (15%). The percentage of positive samples for NoV was of 21.2% (out of 113), 12.2% (out of 123) and 31% (out of 132) in years 2004, 2005, and 2006, respectively. During the study period, the majority of cases occurred between April and September. The more affected age was that one between 0 and 12 months, being the vomits and fever the clinical symptoms more frequently observed.

**P0420**

**Title:** Is CD30 antigen a T cell activation marker in Celiac Disease?

*Natalia Periolo 1, Laura Guillén 1, Lucio Gonzalez 2, Pablo Couceiro 2, Vilma Aliboni 3, Alejandra C Cherñavsky 1*

1) Laboratorio de Inmunogenética, Hospital de Clínicas “José de San Martín”, Buenos Aires, Argentina 2) Servicio de Gastroenterología, Hospital de niños de San Justo, Buenos Aires, Argentina 3) Servicio de Gastroenterología, Hospital de niños “Ricardo Gutierrez”, Buenos Aires, Argentina

**Summary:**
Objectives: To screen for CD30 expression on duodenal T cells as an activation marker in celiac disease, and to investigate the regulation of CD30 by interleukin (IL)-15 in peripheral blood lymphocytes (PBL). Materials/methods: During diagnostic gastro-duodenoscopy multiple biopsy specimens and concomitant blood samples were obtained from patients with untreated celiac disease (Cel, n=7) and healthy controls (Co, n=5). Intraepithelial and lamina propria lymphocytes (IEL and LPL) were isolated at baseline, and after 3-hour incubation of biopsies with 100 ug/ml of crude gliadin. Triple immunofluorescence staining with anti CD25 PE, -CD3 PerCP and -CD30 FITC and flow cytometry analysis was performed. At baseline, comparisons were performed among Cel and Co. Also, patients and Co were individually assessed at baseline and after gliadin challenge. PBL were incubated with 1 ug/ml of anti-CD3 for 3 days. T cell blasts were reseeded, cultured for additional 3 days with 50 ng/ml of recombinant human IL-15 and similarly evaluated by triple immunostaining followed by flow cytometry analysis. Unpaired Student t- test was used in this study, p <0.05 was considered statistically significant. Results: A similar frequency of CD3+ cells among isolated CD3+IEL and CD3+LPL was found at baseline (Cel vs Co, p=ns). In both Cel and Co individually assessed, gliadin did not influence CD30 expression on IEL. However, gliadin induced the up regulation of CD30 on a subpopulation of CD3+ LPL in 4/6 Cel but not in controls. Resting peripheral T cells did not express CD30+ antigen. Incubation with anti-CD3 induced its expression on a subpopulation of CD3+CD25+ cells from both Cel and Co. After addition of IL-15, CD30 expression was significantly increased in both groups (p<0.05, anti-CD3+IL-15 vs. anti-CD3). Conclusions: CD30 is marker of a persistently activated subpopulation of duodenal T cells in child. We observed the up regulation of CD30 on a subpopulation of LPL in Cel and also that IL-15 potentiates CD30 up regulation on T cell peripheral blasts. It is known that mucosal cells produce IL-15 after challenging with gliadin. Consequently, endogen IL-15 elicited by treatment of biopsy cultures with gliadin might have induced the CD30 up regulation observed on LPL. After triggering by CD30, co stimulatory signals for the activation/proliferation of an activated subpopulation of CD30+ LPL might be probably involved in CD pathogenesis.

**P0421**

**Title:** GENETIC PROFILE OF COELIAC DISEASE PATIENTS AND THEIR SIBLINGS IN NORTH INDIA

*Neelam Mohan 1, Madhumita Dwivedi 1, N. K. Bhat 1, Monika Jain 1, I.C. Verma 1*

1) Sir Ganga Ram Hospital, New Delhi, India

**Summary:**
Background and Aim: Coeliac disease (CD) is an immune mediated enteropathy triggered in genetically susceptible individuals. Data from West suggests that CD is associated with HLA DQ2 / DQ8 genotypes. More than 90% coeliac disease patients world wide possess the HLA DQ2 heterodimer DQA1 0501 – DQB1 0201 encoded in either cis or trans-position. There is limited data available from India on genetic profile of coeliac disease patients and none on their siblings. Our aim was to study the genetic profile of coeliac disease patients and their siblings. Methods: The frequencies of human leukocyte antigen (HLA) class II alleles were evaluated at our institute in North Indian CD patients and compared with their siblings and unrelated controls from same geographical area. The diagnosis of CD was made by the modified European Society of Paediatric Gastroenterology and Nutrition (ESPGAN) criteria and positive serology for IgA anti-tissue transglutaminase (tTG). HLA typing was done by PCR SSP (sequence specific primer) method. Study population included 42 diagnosed cases of coeliac disease, 30 siblings of index cases and 100 unrelated healthy controls. Results : Of the 42 index cases, 39 (92.8%) had HLA DQ2 genotypes (DQA1 0501 – DQB1 0201), 1 patient (2.3%) had HLA DQ8 genotype (DQA1 03 DQB1 03). Rest 2 patients had DQB1 0201 allele but no DQA1 0501. Thus DQB1 0201 allele was seen in all but one (97.6%). Of 30 siblings, 20 (66.6%) had HLA DQ2 genotype and one (3.3%) had DQ8 genotype. Of the 100 controls, 27 had HLA DQ 2 genotype. Conclusion: In our study 66.6% of siblings of coeliac disease carried the HLA DQ2 genotype. Prevalence of HLA DQ2 in North Indian children with coeliac disease was 92.8% vs 27% in unrelated healthy controls.

P0422
Title:
Electronic health records can replace hand written notes in paediatric inflammatory bowel disease clinics

Nick Croft 1, Mary Brennan 3, Kuldeep Singh 2, Jason Storr 2, Helen Todd 3, Robert Heuschkel 4

Summary:
Objective Electronic health records allow the direct input of clinical information without the need for second entry. The aims of this project are to describe the process and effects of instituting an electronic health record for IBD in two tertiary paediatric clinics. Methods A commercially available system was identified (Infoflex) which has the ability to link up with hospital patient administration system (PAS) and is easy to alter internally. The dataset for the electronic record was designed by collaboration between two consultant paediatric gastroenterologists, a nurse specialist, the company and Trust ICT staff. Support from the costs came from NHS R&D funds and an unrestricted grant from industry. Assessment of its use and usability were made by assessing proportion of outpatient attendances that use this system and the time spent by clinicians in seeing patients with and without infoflex. Mann-Whitney-U was used to compare the times. Results The system was developed, installed and utilised in two clinics. Despite no support for training on the system both units use the EHR with a total use in clinics of 60% of all attendances (including SpR and consultants). Time spent by the clinicians in seeing patients was not increased by the use of the EHR (see figure, MWU p > 0.05). Time for typing letters has dramatically reduced as these are automatically produced after the clinic visit. Conclusions These data show it is feasible to use an EHR live in clinic in place of hand written notes and this does not prolong clinic appointments. This has the potential, in the future of greatly facilitating clinical audit and research by making electronic clinical data readily available on a large scale. Future plans include expansion into adult IBD clinics and making this more widely available within the UK National Health Service Care Records Service.

P0423
Title:
IgG antibodies to foods are of no pathophysiological relevance in subjects with IgE mediated food allergy

Iqtadar Seerat 2, Alaco Hickey 2, Hilary Longhurst 2, Nick Croft 1
1) Barts and the London School of Medicine, London, UK 2) Barts and the London NHS Trust, London, UK

Summary:
Objective: IgG food antibodies have been claimed to be important in both enhancement and suppression of food allergies. We hypothesised that a food specific IgG antibody would be raised in subjects with known IgE mediated allergy to the same food when compared to children with known allergies to different foods. Thus the aim of this study was to examine the serum concentrations of IgG antibodies to casein, egg and peanut in children with IgE mediated allergy to dairy, egg and peanut. Methods: Patients with food allergy and controls were recruited from the allergy and paediatric gastroenterology clinics. Controls were children having bloods taken in the paediatric gastroenterology clinic with no atopy or inflammatory bowel disease. Total serum IgE, and specific IgE and IgG antibodies to casein, egg and peanut using the Pharmacia Unicap system were measured. Medians were compared using the Mann-Whitney-U, test. Results: A total of 94 children were recruited. 62 had food allergies requiring dietary avoidance (mean age=6 years), with raised RAST or SPT and/or acute onset within one hour of ingestion. 21 reacted to dairy products, 25 to egg and 27 allergic to peanut. There were 32 controls, with a median age of 11 years. As expected the allergic group had higher total IgE and RAST concentration to casein, egg and peanut than the controls. All three food antibody IgG levels were higher for the food allergy group as a whole than the controls (p<0.05). However in the food allergic patients there were no significant differences found in the food IgG to which they react (e.g. Casein IgG in dairy allergic children) when comparing allergic children to those without that specific allergy. Conclusions: In a group of children with defined IgE mediated food allergies there was no increase in food IgG antibodies in those with reactions to the measured food compared to those who react to different foods. Although food allergic children have higher levels of food specific IgG antibodies than controls, these data suggest that IgG food antibodies in serum are not related to the presence (or absence) of IgE mediated food allergic reactions. Any direct relevance to the pathogenic process remains unlikely.

P0424

Title:
Prescribing trends of pro-kinetics in children in the United Kingdom, 1990-2006

Nick Croft 1, Shahrul Mt-Isa 1, Stephen Tomlin 2, Alastair Sutcliffe 3, Martin Underwood 4, Deborah Ashby 1
1) Barts and the London School of Medicine, London, UK 2) Guy’s and St Thomas’ NHS Trust, London, UK 3) University College, London, UK 4) Warwick University, Warwick, UK

Summary:
Objective Drugs are frequently prescribed to children in the absence of a licence or good evidence for efficacy. In the UK Cisapride was licensed in adults and children >12 for the treatment of gastro-oesophageal reflux disease in 1988, neither domperidone or metoclopramide have ever been licensed for this use in children. In 2000 cisapride was withdrawn following reports of arrhythmias and sudden death. Systematic reviews of cisapride (Cochrane Database, 2003) and domperidone (Pritchard, 2005) have shown no good evidence of efficacy for reflux in children. The aims of this study were to investigate the trends of prescribing of the three motility medications used for treating reflux (cisapride, metoclopramide and domperidone) in the UK over the period 1990-2006 focussing on the < or > 2 year age group. Methods The General Practice Research Database (GPRD) UK collects information on 3.6 million active patients seen in primary care clinics. This is equivalent to about 5.5% of the UK population, the largest of its kind in the world. We extracted data for patients who had been prescribed with cisapride (N=2,005), domperidone (N=11,369) or metoclopramide (N=22,610) under the age of 18 between 1990 and 2006. Results There was a small increase in the percentage of all children who were prescribed one of these medications from 0.09% (1990) to 0.11% (2006). Use in <2 years increased from 0.04% to 0.075% whereas those >2 decreased from 0.05% to 0.035%. From 1992 the percentage of children <2 receiving cisapride increased rapidly peaking at 0.35% (1996-1999) falling to 0% by 2001 (see figure). Between 1999 and 2006 there has been an increase in the percentage of children receiving domperidone, most of this due to a 6 fold increase in those <2 years of age (see figure). There has been a steady reduction in the number of patients receiving metoclopramide in all ages. The median starting ages for cisapride was 1 year old (IQR 0.4-7.9), domperidone and metoclopramide were 13 (IQR 5.8-16.2) and 13 (7.8-16.1) years old respectively. The mean length of course was one year for all three drugs. Conclusion These national data show marked increases in the use of cisapride and latterly domperidone in children <2 despite the lack of either a licence or published evidence to support these changes. This clearly demonstrates the importance of initiatives such as the UK Medicines for Children Research Network to ensure evidence based use of medication in children.

P0425

Title:
Gastrointestinal Manifestations in severe Strongyloidiasis, Report of 3 cases

Niyada Vithayasai 1, Siriluck Jennuvat 1
1) Division of Gastroenterology and Nutrition, Department of Pediatrics, Queen Sirikit National Institute of Child Health, Bangkok, Thailand
Strongyloides stercoralis is an intestinal nematode of man that is found in the tropics and subtropics; Eastern Europe, Italy, Australia, southern United States and Southeast Asia. Many individuals infected with this parasite are asymptomatic. However in some groups with depressed delayed hypersensitivity as a result of malnutrition, corticosteroids or immunosuppressive drugs, an unrecognized asymptomatic infection may convert into severe infection. We report 3 cases of severe strongyloidiasis. The first was a 5-year-old girl who presented with severe abdominal pain and vomiting for 1 day. Complete blood count showed leukocytosis with eosinophilia. Esophagogastroduodenoscopy was done because of severe abdominal pain and the finding was compatible with duodenitis. In this case S.stercoralis larvae were found from stool concentration for parasites which was collected after endoscopy. The second was a 12-year-old boy with nephrotic syndrome, who failed steroid treatment and was referred to our hospital for renal biopsy. He developed epigastric pain, bilious vomiting and diarrhea 1 day before admission. After admission he had voluminous bilious vomiting which mimicked intestinal obstruction. S.stercoralis larvae were found from stool concentration and bilious vomitus. Esophagogastroduodenoscopy was done which showed inflamed duodenal mucosa and S.stercoralis larvae were also found from duodenal fluid and biopsied tissues. The third was a 9-year-old girl with acute lymphoblastic leukemia, admitted for chemotherapy at a provincial hospital. She developed high fever and bilious vomiting ten days after chemotherapy and was referred to our hospital. S.stercoralis larvae and hook worm ova were found from stool concentration and her bilious vomitus.. Esophagogastroduodenoscopy was performed with the intention to give the antihelminthic drug. However, during the procedure an unidentifiable worm was seen in the second part of duodenum.

P0427


Flores Idrovo Nube 1, Rivera Medina Juan 1, Galdos Omar 1, Echevarria Ramos Nora 1
1) Children Health National Institute, Lima, Peru

Summary: Colonoscopy is one of the most complete diagnosis test of colorectal alterations providing direct observation of colonic mucosa, allowing the diagnosis and treatment of different digestive tract diseases. Methods Descriptive, cross-sectional and retrospective study. We evaluated the medical records and reports of patients who underwent Colonoscopy from January 1, 2001 to December 31, 2005 at Pediatric Gastroenterology Service of Children Health National Institute, Lima - Perú. Results 1043 colonoscopies were performed, 59.2% in males and 40.8% in females. In the age group of 1 to 5 years were performed 52.2%. The most common indication of colonoscopy was low gastrointestinal bleeding in 88.3%, followed by diarrhea in 4.4%. The macroscopic findings were polyps in 57.2%, colitis in 16.9%, other diagnosis 11.3% and normal colonoscopies in 14.6%. During the colonoscopy was performed 856 procedures, 67.3% polipectomies, 31.8% biopsies, anal dilation in 0.4% and other procedures in 0.5%. Complications were reported in 1.1%, bleeding represented 0.9%, 0.1% bradycardia, and bronchospasm 0.1%. Conclusions: The colonoscopies were performed more frequently in 1 to 5 years old men, with a history of low digestive bleeding. Polyps were the most frequent finding. Colonoscopy is a diagnosis and therapeutic procedure with a low complication rate.
P0428

Title:
Association of the IBD5 risk haplotype with pediatric-onset and adult-onset Crohn’s disease in the Czech population

Ondrej Hradsky 1, Petra Dusatkova 1, Martin Lenicek 2, Jiri Nevoral 1, Milan Lukas 3, Ondrej Cinek 1
1) Department of Pediatrics, University Hospital Motol and Second Faculty of Medicine, Charles University in Prague, Prague, Czech Republic
2) of Clinical Biochemistry and Laboratory Diagnostics, First Faculty of Medicine, Charles University in Prague, Prague, Czech Republic
3) Department of Internal Medicine, First Faculty of Medicine, Charles University in Prague, Prague, Czech Republic

Summary:
BACKGROUND & AIMS: Crohn’s disease has been shown to be associated with the variants in the CARD15, IL23R and ATG16L1 genes. The role of other genes is questionable: the IBD5 locus is one of the most studied. METHODS: We examined the associations of variants in the SLC22A4 (rs10500152) and SLC22A5 (rs2631367) genes with pediatric-onset and adult-onset Crohn’s disease (CD) in the Czech population. Genotype, phenotype and allelic frequencies were compared between 333 patients with CD (137 pediatric-onset, 196 adult-onset) and 499 unrelated healthy controls. Haplotype and genotype – phenotype analysis were also performed. RESULTS: We found a strong linkage disequilibrium between rs10500152 and rs2631367 (D’ = 0.99, r = 0.90). Allelic frequencies of risk variants at rs10500152 (allele T) and at rs2631367 (allele C) were associated with risk of CD (OR = 1.40, 95%CI 1.14 – 1.71 and OR = 1.32, 95%CI 1.09 – 1.61, respectively). The TC haplotype was carried by 48% patients and 40% control subjects (OR = 1.40, 95%CI 1.14 – 1.73). There was no detectable genotype-phenotype association: the age at CD onset was not modified by the TC haplotype, and the most prominent association with disease phenotype was not significant (OR = 1.30, CI 0.94 – 1.78 for the TC haplotype and stricturing form of the disease). CONCLUSIONS: We confirm the association of variants in SLC22A4 and SLC22A5 genes and the TC haplotype with pediatric and adult onset CD in the Czech population. We found a tendency towards association of the TC haplotype with stricturing form of CD. ACKNOWLEDGEMENT: This study was supported by grants from the Czech Ministry of Health (MZ00064203, IGA NR 8963-3) the University Hospital Motol and the Grant Agency of the Charles University in Prague (GAUK 7660/2007).

P0429

Title:
Population-Based Epidemiology of Pediatric IBD in an Integrated Health Plan in Northern California

Oren N Abramson 1, Michael W Durant 1, William Mow 1, Allen Finley 1, Pratima Kodali 1, Lisa J Herrinton 2
1) The Permanente Medical Group, Oakland, California, USA
2) The Division of Research, Kaiser Permanente Northern California, Oakland, California, USA

Summary:
Purpose: To estimate the incidence of IBD in a sample of children in the US, over the course of 10 years, using a population-based registry. Methods: Kaiser Permanente is an integrated health plan in northern California serving a population of 3.2 million persons of which 742,900 (in 2007) are less than 18 years of age. Analysis of the Kaiser Permanente IBD Registry revealed 639 patients, 0-17 years of age, with IBD during 1996-2006. Confirmation of the diagnosis, the dates of symptom presentation and initial diagnosis and the extent and severity of disease were obtained through review of the medical record and linkage to computerized data. Results: During the study period the average annual incidence per 100,000 was 2.9 for Crohn’s disease (CD) and 3.6 for ulcerative colitis (UC). The incidence of ulcerative colitis rose over the study period from 2.6 per 100,000 person-years in 1996-2001 to 4.6 per 100,000 person-years in 2002-2006 (p<0.001). The ratio of CD incident cases to UC incident cases was 0.92 in Caucasians and 1.3 in African Americans, but 0.4 in Hispanics and 0.28 in Asians (p<0.001). Conclusions: The incidence of UC increased appreciably in this population. Hispanic and Asian children develop UC more often than CD, suggesting etiologic differences in these ethnic groups compared with Caucasians and African-Americans. Acknowledgments: We wish to acknowledge Anthony Wong MD, Robert Cannon MD, Edward Rich MD, Erin McCroskey RN, BSN and Venessa C Tavares MSc for their contribution to this study. This work was supported by grants from the Crohn’s and Colitis Foundation of America and the Center for Disease Control and Prevention.

P0430

Title:
Exclusive enteral nutrition induces small intestine mucosal healing assessed by capsule endoscopy

Paolo Lionetti 1, Cristina Brondello 1, Francesca Mangiantini 1, Monica Lorusso 1, Elena Pozzi 1
1) Dept. Pediatrics, University of Florence, Meyer Hospital, Florence, Italy

Summary:
Exclusive Enteral Nutrition (EN) is an effective primary therapy for paediatric Crohn’s disease (CD). The beneficial effect on growth and nutritional status and the added benefit of lack of medication-induced side effects favour the usage of EN in the pediatric population. Elemental and polymeric diets are equally effective. Open trials in children showed endoscopic healing and down-regulation of mucosal proinflammatory cytokine production following a course exclusive EN with a polymeric formula. In contrast there is poor correlation between clinical and endoscopic remission after steroid therapy. We assessed the capacity of EN to induce small intestine mucosal healing by capsule endoscopy in 14 children (8 M, age range: 7-16 yrs) with active CD. Eight children had ileo-colonic diseases whereas 6 children had small bowel disease. Nine children were at disease diagnosis whereas 5 were at first disease relapse. All children managed to take the EN regimen orally and achieved clinical remission. Eight out of 14 children received also the immunosuppressive agents Azathioprine (AZA) or 6-mercaptopurine (6MP). After the 8 week course of exclusive EN with the polymeric formula Modulen Nestle the Pediatric Crohn’s Disease Activity Index dropped from 32.9±9.3 (Mean ± SD) to 1.5±2.8. In all patients capsule endoscopy (Pillcam, Given Imaging) was performed before and after the exclusive EN. Endoscopic appearance of the bowel was scored according with the new Capsule Endoscopy Crohn’s Disease Activity Index (CECDAI) that has been recently validated. The mean (±SD) CECDAI before EN was 12.18±3.49 and dropped to 6.36±2.46 (p<0.01) after the 8 week course of liquid diet. No differences were observed as far as concern mucosal healing when comparing children who were on AZA/6MP therapy and those who were not. These data suggest a good correlation between clinical and endoscopic remission after exclusive EN in children with CD and confirm the capacity of the exclusive liquid polymeric diet to induce mucosal healing.

P0431

Title: Gastric pH and its relationship with Helicobacter pylori infection and serum iron in children

Andrea Villagran 1, Carolina Serrano 1, Javier Torres 1, Henry Windle 2, Jean Crabtree 3, Paul Harris 1
1) Pontificia Universidad Catolica de Chile School of Medicine, Santiago, Chile 2) Trinity College, Dublin, Ireland 3) Leeds Institute of Molecular Medicine, Leeds, UK

Summary: Introduction: Iron deficiency anaemia (IDA) may affect cognitive development and behaviour in over 50% of children in developing countries. Because iron absorption depends of gastric pH, which can be modified by H. pylori status, we sought to evaluate iron markers in H. pylori-infected children from a country with a high prevalence of the infection. Objective: To evaluate the association between changes in gastric pH, iron deficiency and H. pylori infection in children. Methods: In a prospective fashion 40 children referred to upper gastrointestinal endoscopy (UGIE) for digestive symptoms were enrolled in our study. After informed consent, clinical questionnaires were performed and blood samples were taken for haematological study (CBC) and serum iron profile. Rapid urease test (RUT) and histological staining of H. pylori were performed on gastric biopsies obtained during endoscopy and a sample of gastric juice was obtained for pH determination. H. pylori infection was defined by either a positive RUT or histological staining. Results: Ten children were infected by H. pylori (25%). Mean age was 9.8 ± 1.3 years old with 60% of males. No differences were found in age (p=0.8), gender distribution (p=0.4), weight (p=0.3), height (p=0.9) and BMI (p=0.5) between infected and non-infected children. H. pylori-infected patients showed higher frequency of antral nodularity (p<0.001) and histological abnormalities (antrum and corpus gastritis) (p<0.001) compared to non-infected children. No ulcers or gastric atrophy were found in this study. No differences were found in haematological markers (red and white blood cells) between infected and non-infected children (p=0.3). The average gastric pH was 3.5 ± 2.8 and 2.6 ± 1.9 in the H. pylori-infected and non-infected group, respectively (p=0.7). However, 50% (3 out 6) of the children with gastric pH<4 were infected, compared to only 20.6 % (7 out of 34) of the children with gastric pH>4 (p=0.5). A significant difference was found between the average pH values between those with pH>4 (7.6 ± 0.8) and those pH<4 (2.0 ± 0.6) (p<0.001). Children in the group with higher pH presented lower levels of serum iron (66.8 ± 40.7 v/s 109.5 ± 44.1 ug/dl, p=0.03) and lower transferrin (20.1 ± 12.7 v/s 34.8 ± 14.5, p=0.02) compared to children with lower pH. Conclusions: H. pylori-infected children did not present specific symptoms or biodemographic characteristics compared to non-infected children referred to endoscopy. Children with a high pH gastric have alterations in the status of iron and conform a risk group for IDA. H. pylori, present in a high percentage of this group, may affect iron absorption metabolism in the stomach and exacerbate the iron deficiency. This work was financed by CONTENT# 032136 and Conicyt/BM (RUE#29).

P0432

Title: Identification of a Susceptibility Gene for Gastro Esophageal Reflux Disease.

Dr Paul Hammond 1, A/Prof Maria Lagerstrom-Fermer 2, Bengt Asling 2, Johan Jirholt 2, Wendy Mair 1, Prof Geoffrey Davidson 1
1) Gastroenterology Unit, Women’s and Children’s Hospital, North Adelaide, Australia 2) AstraZeneca R & D, Mölndal, Sweden

Summary: Objective: To identify genes which predispose to gastro esophageal reflux disease (GERD). Methods: We examined 3 independent patient cohorts; the first being a collection of families, the second a pediatric Trio cohort and the third one an adult case control cohort. DNA from all cohorts was
collected from blood or buccal swabs. A pediatric gastroenterologist determined reflux phenotype for the two first cohorts. All individuals in the third cohort went through gastroscopy and a gastroenterologist determined GERD disease status. The first cohort consists of 36 families (containing 504 individuals, spanning 3-5 generations) in whom there is a strong family history of GERD. The entire genome in the family material was examined using microsatellite markers followed by linkage analysis. Candidate genes were tested for genetic association in the Trio cohort. This cohort consists of 350 individuals diagnosed with GERD between 3 months and 17 years of age, in whom there is not a strong family history of GERD. The Trio material was obtained using DNA from both parents of each individual. Association analysis was performed using transmission disequilibrium test (TDT) using single nucleotide polymorphism markers. The third patient material is an adult GERD case control cohort consisting of 250 GERD individuals and 500 healthy controls. Results: Using genome wide linkage analysis in the family cohort, a region on chromosome 2 was linked to disease in 11 families with a LOD score of 3.3. Candidate genes in this region were tested for genetic association in the Trio cohort. COL3A1 was identified as a disease susceptibility gene for GERD. This finding was replicated in the adult patient collection. Furthermore, COL3A1 was also found to be associated with hiatus hernia in adult males. Analysis of esophageal tissue from subjects with GERD and controls showed increased collagen type III protein in subjects suffering from GERD. Conclusions: COL3A1 is a genetic risk factor for GERD. A proposed mechanism is an inherited vulnerability, which may affect esophageal tissue strength, flexibility and wound healing. This study was sponsored by AstraZeneca.

P0433

Title:
A Global, Evidence-Based Consensus on the Definition of Pediatric Gastroesophageal Reflux Disease (GERD)

Phil Sherman 1, on behalf of the Global Pediatric Definition of GERD Consensus Group 1
1) The Hospital for Sick Children, Toronto, Canada

Summary:
Background: The Montreal definition of GERD established an evidence-based global consensus to define reflux disease in adults. Objective: To clarify terms related to reflux symptoms and signs in children by developing an international consensus on the definition of pediatric GERD. Methods: A set of statements to define pediatric GERD was developed by a consensus group employing the Delphi process. The group comprised 8 voting pediatric gastroenterologists with expertise in the field and 8 non-voting participants (a chair, a primary care physician and pediatrician, pediatric surgeons, pediatric otolaryngologists, neonatologists, and an internal medicine-trained gastroenterologist). Statements were based on systematic searches of the biomedical literature employing Medline, EMBASE and CINAHL. Voting was conducted using a 6-point scale, with consensus defined as agreement by 75% of the group. The strength of each statement was assessed by using the GRADE system (www.GradeWorking-Group.org). Results: There were four rounds of voting. At the first face-to-face workshop, many of the statements were separated for each of 3 age groups (newborns and infants, toddlers and children, and adolescents). In the final vote, consensus was reached on 98% of 59 statements. In this vote, 95% of the statements were accepted by 7 of 8 voters. Salient consensus items were: 1) GERD is present when reflux of gastric contents causes troublesome symptoms and/or complications, but this definition is complicated by unreliable reporting of symptoms by children under 8 years, 2) Utility of histology for the diagnosis of pediatric GERD is limited; its primary role is to exclude other conditions, especially eosinophilic esophagitis and infections, 3) Extra-esophageal conditions (chronic cough, laryngitis, hoarseness, dental erosions, and reactive airway diseases) may be associated with pediatric GERD, but causality remains to be established, 4) Barrett’s esophagus has been re-defined. Population-based studies of reflux-based symptoms in children should be a future research priority. Conclusions: A draft global definition of pediatric GERD has been developed. Critical feedback is now being sought from pediatric gastroenterologists and other interested parties. The consensus statements arising should prove useful for the development of future clinical practice guidelines and in the establishment of high quality clinical trials to address unresolved issues in the field.

P0434

Title:
Drugs versus placebo for pediatric gastro-esophageal reflux: a systematic review and meta-analysis

Pedro Vieira da Silva Magalhães 1, Telma Regina Paes Dias 2, José Carlos Borges Appolinário 2, Josué Bacalchuk 2, Joaquim Ignácio Silveira da Mota Neto 1
1) Centro de Medicina Baseada em Evidências - Universidade Federal de Pelotas, Pelotas, Brazil 2) Janssen-Cilag Farmacêutica, São Paulo, Brazil

Summary:
Objective: To systematically review placebo controlled randomized trials of prokinetics, histamine receptor antagonists, proton pump inhibitors and surface agents in the treatment of gastroesophageal reflux (GER) and gastroesophageal reflux disease (GERD) in children. Methods: Bibliographic search for randomized clinical trials (Medline, EMBASE, Biological Abstracts, ISI/Web of Science, CINAHL, Lilacs and Cochrane CENTRAL). Studies testing any anti-reflux medication against a placebo control which applied a randomized and standardized outcome methodology were included. Allocation concealment, in accordance with the Cochrane Collaboration Reviewer’s Handbook criteria, was the primary mode of quality assessment. Data were combined in a formal meta-analysis whenever possible. Modification of reflux symptoms was the primary outcome of interest in this review; other outcomes were: GER related complications, laboratory measures related to reflux, functioning and quality-of-life, treatment satisfaction...
and cost-effectiveness. Funnel plots were used to evaluate publication bias. Results: Fifteen studies were included that provided endpoint data for at least one significant outcome. Studies were typically small, included patients of a wide age range, median follow-up was short and outcomes limited to symptom and laboratory measures. Most studies provided data regarding the risk of no response at endpoint for prokinetic agents, indicating a significant lower risk of no response (RR 0.35, 95% CI 0.14 – 0.88) as compared to placebo, but with moderate heterogeneity (I²=72.2%), which was introduced by metoclopramide studies. In a sensitive analysis including all studies, positive categorical outcomes tended to cluster in studies including older patients, which also had lower heterogeneity (0% versus 63.4%). Conclusion: The evidence-base for the pharmacological treatment of GER is poor, especially in infants. The few studies that have been conducted in children are limited by the scope of outcomes measured – usually short-term response and occasionally laboratory proxies of outcome. Regarding symptom improvement, most trials conducted have assessed the efficacy of a prokinetic drug, mostly domperidone, for which there is consistent short-term data for this outcome. For other agents, data is at best inconclusive, as few patients have been randomized. This points to a general need for the appraisal of diverse interventions in pediatric GER.

P0435

Title: ABDOMINAL TISSUE OXYGEN SATURATION DURING DEVELOPMENT OF NECROTIZING ENTEROCOLITIS IN PRETERM PIGS

Hanne K Moeller 2, Thomas Thymann 1, Douglas G Burrin 3, Per T Sangild 1
1) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 2) BioCentrum-DTU, Technical University of Denmark, Lyngby, Denmark 3) Baylor College of Medicine, Houston, Texas

Summary:
Objectives: Prematurity and formula-feeding are risk factors for development of necrotizing enterocolitis (NEC). The disease etiology is not completely understood but may include a period of intestinal hypoxia in early stages of the disease prior to development of inflammatory lesions. Our aim was to examine if the development of NEC in premature pigs is associated with changes in abdominal tissue O2 saturation (StO2) measured transcutaneously by near infrared spectroscopy (NIRS). Our long term goal was to use repeatedly measured gut StO2 values as a prognostic marker of intestinal hypoxia and NEC. Methods: Premature pigs delivered by caesarean section at 90% gestation were given either total parenteral nutrition (TPN) or minimal enteral nutrition (MEN; 2.3 mL/kg/3hr) with either infant formula or bovine colostrum for 48hr, and subsequently fed total enteral nutrition (TEN; 15 mL/kg/3hr) with infant formula or bovine colostrum for an additional 36-48 hr. Transcutaneous intestinal StO2 was monitored repeatedly on each pig during the experiment using NIRS. StO2 was monitored at 1, 6, 12, 24, 31, 42 and 47hr during the TPN/MEN period and at 1, 2, 5, 7, 12, 18, 20, 25, 28 and 32hr during the TEN period. All pigs were euthanized between 36-48 hr after onset of TEN when NEC symptoms of diarrhea, abdominal distension and apnea began to develop in numerous pigs, such that there were 43 NEC and 32 non-NEC cases. Results: Mean StO2 values (SE) during the TPN/MEN period were relatively stable and similar between NEC and non-NEC with an overall average of 62±1%. During TEN however, the StO2 values in NEC pigs were lower (P<0.05) than non-NEC pigs especially during the final 3 hr before decreasing to a minimum value of 55±10% (mean±se) coincident with onset of clinical symptoms. Conclusions: We conclude that transcutaneous StO2 measurements in the gut decreased significantly with the onset of the final stages of NEC, but may not be a sensitive early prognostic marker of NEC in premature neonatal pigs.

P0436

Title: ENTERAL FORMULA FEEDING CAUSES ACUTE INTESTINAL DYSFUNCTION AND INFLAMMATION PRIOR TO DEVELOPMENT OF NECROTIZING ENTEROCOLITIS IN PRETERM PIGS

Jayda L Siggers 1, Richard H Siggers 1, Kerstin Skovgaard 2, Mette Boye 2, Thomas Thymann 1, Per T Sangild 1
1) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 2) Veterinary Institute, Technical University of Denmark, Frederiksberg, Denmark

Summary:
Objectives: Necrotizing enterocolitis (NEC), a serious gastrointestinal disease that afflicts 5-10% of preterm infants, progresses rapidly from mild food intolerance into extensive hemorrhage, inflammation and necrosis. The events leading to NEC have remained poorly defined. Similar disease characteristics are observed in preterm pigs 24-48 h after feeding formula. Using this model, we aimed to characterize the temporal development of NEC, and describe the functional and immunological response of the preterm intestine preceding NEC. Methods: Premature pigs delivered by caesarean section at 90% gestation were given either total parenteral nutrition (TEN; 15 mL/kg/3hr) with infant formula or bovine colostrum for an additional 36-48 hr. Transcutaneous intestinal StO2 was monitored repeatedly on each pig during the experiment using NIRS. StO2 was monitored at 1, 6, 12, 24, 31, 42 and 47hr during the TPN/MEN period and at 1, 2, 5, 7, 12, 18, 20, 25, 28 and 32hr during the TEN period. All pigs were euthanized between 36-48 hr after onset of TEN when NEC symptoms of diarrhea, abdominal distension and apnea began to develop in numerous pigs, such that there were 43 NEC and 32 non-NEC cases. Results: Mean StO2 values (SE) during the TPN/MEN period were relatively stable and similar between NEC and non-NEC with an overall average of 62±1%. During TEN however, the StO2 values in NEC pigs were lower (P<0.05) than non-NEC pigs especially during the final 3 hr before decreasing to a minimum value of 55±10% (mean±se) coincident with onset of clinical symptoms. Conclusions: We conclude that transcutaneous StO2 measurements in the gut decreased significantly with the onset of the final stages of NEC, but may not be a sensitive early prognostic marker of NEC in premature neonatal pigs.
Immature esophageal motility may relate to necrotizing enterocolitis in preterm pigs

Chantal Lau 1, Soeren Rasch 2, Mette Schmidt 2, Thomas Thymann 2, Hans Gregersen 3, Per T. Sangild 1
1) Baylor College of Medicine, Houston, Texas 2) Human Nutrition, University of Copenhagen, Frederiksborg, Denmark

Objective: Preterm birth is associated with a risk of necrotizing enterocolitis (NEC) where the immature gut immune system shows an uncontrolled inflammatory response to bacterial or dietary antigens. Uterine infections predispose to preterm birth, but it is unknown how prenatal bacterial exposure affects development and immune responses of the immature gut. We used a preterm pig model to study the postnatal effects of prenatal bacterial endotoxin exposure.

Methods: At 85-87% gestation, pregnant sows underwent laparotomy and fetuses were injected with endotoxin (E. coli lipopolysaccharide (LPS)) or saline through the uterine wall. Pigs were given LPS via the amniotic fluid (LPS-a, 0.4 mg/kg, n=11), intramuscularly (LPS-im, 0.014 mg/kg, n=16) or given saline intramuscularly (saline-im, 0.5 ml, n=18). Three-five days after injection, piglets were delivered preterm by caesarean section and fed bovine colostrum or infant formula. All pigs were sacrificed when clinical signs of NEC were present in several littersmate pigs (24-40 h postpartum). Blood chemistry values were measured, the gut was scored for NEC lesions, and indices of mucosal morphology and brush border enzymes were recorded. Results: None of the pigs fed colostrum developed NEC and these pigs showed the most favourable values for blood parameters and gut maturation (villous height, enzymes). Formula-fed LPS-a, LPS-im and saline-im showed NEC incidences of 18%, 55% and 56%, respectively. LPS-a had lower clinical NEC scores than LPS-im (P<0.05) and saline-im (P=0.09) pigs. LPS-a also tended to have higher mean crypt depth and activities of sucrase, lactase, aminopeptidase A and N in the intestine (all p<0.15) and lower lung density (p<0.05). Formula-fed LPS-im pigs had higher blood pCO2 and lactate values and lower glucose values than LPS-a and saline-im (P<0.05). Conclusion: Prenatal exposure to endotoxin given intramuscularly had minimal effects at the present dose. Conversely, luminal gut exposure to endotoxin, via swallowed amniotic fluid, moderately reduced NEC development, mucosal atrophy and digestive malfunction, and may have improved lung development. The effects could be mediated via a maturation of mucosal immunity, making gut epithelia better able to cope with luminal antigens after birth. By differential mechanisms, both prenatal luminal endotoxin exposure, and postnatal colostrum ingestion, may reduce NEC incidence and enhance epithelial immunity in preterm neonates.
feeding in NEC-affected (29 vs. 27%) in contrast to healthy pigs (31 vs. 71%; P<0.01). The peristaltic velocity was similar for both groups over time. Conclusions: Peristalsis increases with maturation in healthy, but not in NEC pigs. The peristaltic velocity was not affected in the latter group. EM alterations observed in NEC pigs are associated with their developing condition. Our future objective is to determine whether early EM manifestations can predict the development of NEC in this animal model.

P0439

Title: Increased incidence of necrotizing enterocolitis after administration of probiotic bacteria to newborn, caesarean-delivered preterm pigs

Malene S Cilleborg 2, Per T Sangild 1, Richard Siggers 1, Louise Fangel Juul 1, Mette Boye 2, Thomas Thymann 1
1) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 2) National Veterinary Institute, Technical University of Denmark, Frederiksberg, Denmark

Summary:
Objective: Preterm birth, enteral diet and gut colonization play key roles in the pathogenesis of necrotizing enterocolitis (NEC). Using a NEC model with preterm, caesarean-delivered piglets, we recently showed that provision of probiotic bacteria altered gut colonization and improved NEC resistance. In this study, we investigated the effects of a mix of three probiotic strains, given as live or killed bacteria immediately after birth by caesarean section. Methods: Forty preterm piglets (90% gestation) were allocated to three treatment groups receiving either no treatment (control, n=14), a mix of three live probiotic strains (Pro-live, n=14, Lactobacillus paracasei, Bifidobacteria animalis and Streptococcus thermophilus), or the same three strains as killed (gamma-irradiated) bacteria (Pro-kill, n=12). The dose was ten to the ninth bacteria of each strain every 3h during 2d of parenteral nutrition plus 2d of enteral formula feeding. Sugar absorptive capacity (plasma galactose and mannitol) and intestinal permeability (urinary lactulose and mannitol) were evaluated after oral boluses of marker solutions prior to euthanasia and tissue collection 4d after birth. Gut tissue was scored for NEC lesions, caecal contents were used for culture microbiology, and mucosal enzyme activities were determined. Results: Relative to controls, both Pro-live pigs and Pro-kill pigs showed higher NEC incidences (14, 64 and 67%, respectively), higher NEC severity scores, and lowered intestinal weights (all P<0.05). Sugar absorptive capacities were similar among groups, but Pro-kill pigs showed highest intestinal permeability (P=0.06) and lowest sucrase, lactase, aminopeptidase A and N and dipeptidase IV activities in the proximal intestine (P<0.05). Pigs with NEC had significantly more caecal lact acid bacteria, total anaerobes and Clostridium perfringens, than healthy pigs. Conclusion: Feeding the present bacterial strains, particularly killed bacteria, led to decreased gut function and higher NEC sensitivity in preterm pigs. The germfree intestine of caesarean-delivered preterm neonates may be less tolerant to high amounts of certain probiotic bacteria, than a slightly more mature and partly colonized intestine. We speculate that the effects of probiotic bacteria on gut colonization and NEC in preterm neonates are highly dependent on type and dose of bacterial strain, colonization capacity, as well as time of administration in relation to birth.

P0440

Title: ORAL ADMINISTRATION OF AMNIOTIC FLUID REDUCES NECROTIZING ENTEROCOLITIS IN PRETERM PIGS

Javda L Siggers 1, Richard H Siggers 1, Mette Boye 2, Hanne K Moller 2, Mette H Schmidt 1, Per T Sangild 1
1) Faculty of Life Sciences, University of Copenhagen, Frederiksberg, Denmark 2) Technical University of Denmark, Frederiksberg & Lyngby, Denmark

Summary:
Objective: Preterm neonates are susceptible to gastrointestinal (GI) disorders such as necrotizing enterocolitis (NEC). Maternal milk protects against NEC via growth promoting, immunomodulatory and antimicrobial factors, but is often limited following preterm birth. Amniotic fluid (AF), the fetal enteral diet, contains similar bioactive components, but it remains unknown if AF is beneficial for the immature intestine after preterm birth. Our studies in murine dendritic cells showed that porcine AF decreased inflammatory cytokine (IL-6, IL-12 and TNF) release in response to bacterial stimuli, suggesting an immunomodulatory function. This study aimed to determine the effect of AF on mucosal structure, function and inflammation in the preterm intestine using a pig model of NEC. Methods: Preterm pigs (90% gestation) were delivered via caesarean section and maintained on total parental nutrition plus 2d of enteral feeding. Sugar absorptive capacity (plasma galactose and mannitol) were evaluated after oral boluses of marker solutions prior to euthanasia and tissue collection 4d after birth. Gut tissue was scored for NEC lesions, caecal contents were used for culture microbiology, and mucosal enzyme activities were determined. Results: AF pigs were fed AF (10-12 mL/kg/3h) throughout the TPN and enteral feeding periods. Results: Fifty-four percent (7/13) of FORM pigs developed NEC compared with 0% (0/10) of COLOS pigs (both P<0.05). There was a significant increase in brush border disaccharidase and aminopeptidase activities in the COLOS pigs, compared with FORM and AF pigs (lactase: +42-44%, maltase: +59-63%, DPPIV: +13-25%, ApN: +25-28%, all P<0.05). Mean villus height did not differ across treatment groups. AF pigs had significantly higher weight gain (+48-76%), lower kidney weights (-22-29%) and spleen weights (-26-27%), compared with COLOS and FORM pigs (all P<0.05). Microarray analysis targeting >200 immune related genes was performed on distal intestinal tissue. Twenty-six immune genes were differentially regulated among the 3 groups. Only 9 differentially expressed genes were detected between AF and COLOS pigs, while 25 differentially expressed genes (10 up, 15 down) were detected between AF and FORM pigs. Thus, AF and COLOS tissues appeared more immunologically similar than AF and FORM tissues. Many of the differentially regulated
genes were identified as being involved in the innate immune response (e.g. IgM, IL-1, mucin 5AC, NFkappaB, prepro-defensin, TNF, CCR5, lysosome). Conclusion: Amniotic fluid administration immediately after preterm birth modulates the gut innate immune system and may thereby reduce the incidence of NEC.

P0441

Title: A novel homozygous mutation in a girl with congenital chloride diarrhea (CLD)

Peter Heinz-Erian 1, Michaela Oberauer 2, Nikolaus Neu 1, Thomas Müller 1, Sabine Scholl-Bürgi 1, Andreas Janecke 2
1) Dept. Pediatrics, Innsbruck, Austria 2) Dept. Clinical Genetics, Innsbruck, Austria

Summary: Introduction: Congenital chloride diarrhea (CLD) is a rare autosomal recessive disease characterized by persistent intestinal secretory chloride and fluid loss with fecal chloride concentrations exceeding the sum of sodium plus potassium. Additional features are hypochloremia, metabolic alkalosis, dehydration, abdominal distension and failure to thrive. This clinical picture is due to a deficient function of the apical epithelial Cl-/HCO3- exchanger caused by mutations in the solute carrier family 26 member 3 (SLC26A3) gene on chromosome 7q31. About 30 SLC26A3 mutations have been described so far. Objective: We here report a 16 year old girl, in whom the diagnosis of CLD had been made at the age of 3 months on the basis of the following clinical findings: polyhydramnios diagnosed at 31 weeks gestation, fecal Cl- 105 mmol/l, fecal Na+ 60 mmol/l, fecal K+ 43 mmol/l with corresponding low serum concentrations for the same three electrolytes (Cl- 80 mmol/l, Na+ 125 mmol/l and K+ 3.3 mmol/l). In addition the patient showed characteristic metabolic alkalosis with a serum pH of 7.5 and a base excess of + 14.5 mmol/l. Fecal osmolality was 271 mosm/kg confirming the secretory nature of the diarrhea. These findings were characteristic of a clinically typical case of CLD. Methods: We investigated the entire coding region of 21 exons and all splice sites of the SLC26A3 gene using PCR amplification and direct sequencing in 12 fragments. Results: We found a novel homozygous nonsense mutation, c.2132T>G, in exon 19 causing leucine in position 711 to be replaced with a stop codon predicting either truncation of the 53 C-terminal amino acids or representing a “null”-allele due to nonsense-mediated RNA decay. Furthermore, this mutation was absent among 94 control persons. Conclusion: These findings add a further novel mutation to the wide spectrum of sequence changes within the SLC26A3 gene causing the clinically rather uniform picture of CLD.

P0442

Title: Congenital chloride diarrhea as a cause of 18 years of severe constipation

Peter Heinz-Erian 1, Thomas Müller 1, Sabine Scholl-Bürgi 1, Heinz Zoller 1, Raimund Margreiter 1, Andreas Janecke 1
1) Dept. Pediatrics, Innsbruck, Austria

Summary: Introduction: congenital chloride diarrhea (CLD), a rare autosomal recessive disease, is characterized by severe intestinal loss of electrolytes and fluid resulting in massive alkalosis, hypoelectrolytemia and dehydration. Objective: we describe a young man (18 ½ years) with livelong functional constipation due to undiagnosed CLD. Methods: we retrospectively reviewed the patient’s clinical data and prospectively performed multiple fluid /electrolyte/ acid base studies and sequence analysis of the CLD gene (SLC26A3). Results: The patient was the 2nd child of consanguineous parents whose 1st child had died at the age of 3 days from severe watery diarrhea. He was born at 39 weeks gestation (3850 g, 55 cm). From his 2nd month of life on, chronic abdominal bloating and severe constipation were reported. At 21 month the entire colon was resected and a caecocutaneous anastomosis established. Acetylcholinesterase stain of gut sections indicated normal nerve structures and ganglia. The patient continued to be constipated and showed progressive growth retardation. Numerous emergency admissions to various hospitals showed metabolic alkalosis and hypoelectrolytemia which improved only temporarily with parenteral fluid/electrolyte substitution. At the age of 15 ½ years mechanical obstruction due to intestinal adhesions led to resection of 20 cm of very dilated jejunum. At this time, marked neural disarrangement with hypoganglionosis of the myenteric plexus and lack of smooth muscle actin staining of the circular muscle layer were described. Three intestinal “shortcuts” were surgically created to improve enteral transit. However, over the next 2 ½ years no improvement of gut function was achieved and the patient suffered from many complications including respiratory failure. At the age of 18 years he was (weighing 36 kg) admitted to our hospital to be evaluated for intestinal transplantation. Review of the patient data from previous hospital admissions revealed the following plasma electrolyte concentrations: Cl- 64-89, Na+ 120-144, K+ 2.2-3.9 and Ca++ 1.8-2.4 mmol/L. Acid base status was highly alkalotic (pH up to 7.73, HCO3- up to 58 mmol/l). These data led us to assume a diagnosis of CLD which was - after rehydration - clinically corroborated by secretory diarrhea, low fecal pH and Cl- concentrations of 80-134 mmol/l (n=24 measurements) while urine concentrations of these electrolytes were low. Sequencing of the SLC26A3 gene revealed a heterozygous nucleotide change, c.1314C>T in exon 12, previously also described in a CLD patient from Kuwait but hitherto not regarded as a mutation. Using standard CLD treatment with oral NaCl + KCl and a normal diet the patient is now thriving well. Conclusions: CLD may manifest itself as functional constipation if the patient is dehydrated and hypoelectrolytic. The significance of the detected nucleotide change needs to be further elucidated.
P0443

Title: Dissolution of giant gastric lactobezoars by N-acetylcystein

Peter Heinz-Erian 1, Gabriele Kropshofer 1, Ingemar Gassner 1, Andreas Klein-Franke 1, Markus Rauchenzauner 1, Thomas Müller 1
1) Dept. Pediatrics, Innsbruck, Austria

Summary:
Introduction: Gastric lactobezoars in infancy develop through coagulation of milk protein and mucus. Possible pathogenetic factors that have been implicated are disturbances of gastric emptying hampering mechanisms of food fragmentation and the interdigestive migrating motor complex as well as changes in the secretion of gastric acid, pepsin and mucus. In some cases lactobezoars cause serious complications such as mechanical obstruction, perforation or necrotizing enterocolitis. Preferred treatment is still endoscopic or surgical removal. Objective: To investigate efficiency of intragastric N-acetylcysteine (10 mg/kg/6-hourly) in the dissolution of huge gastric lactobezoars in two toddlers. Methods: sizes of lactobezoars and their courses of dissolution were monitored by gastric ultrasound and gastrografin radiography. Results: Case 1: a 15 month old female was admitted because of pallor, tachycardia and anasarca. She had been fed almost exclusively with cows milk. Laboratory investigation revealed severe normocytic, normochromic, hyperregeneratory anemia (erythrocytes 2.71 T/L, Hb 69 g/L, reticulocytes 72%) without indication of hemolysis, iron deficiency (iron 1.2 umol/L, ferritin < 3 ug/L) and hyproteinemia (3.41 g/dL). Liver and renal function tests were normal. Ultrasound showed a huge lactobezoar (7x8x10 cm). This was confirmed by gastrografin contrast radiography showing lactobezoar filling of most of the stomach except a small peripheral space. Intra gastric tube application of N-acetylcysteine led to complete dissolution of the lactobezoar within 72 hours as monitored by ultrasound. Case 2: a 20 month old female with pallor, tachycardia, fever, diarrhea and vomiting had been predominantly fed with cows milk. She had iron deficiency anemia (erythrocytes 3.63 T/L, Hb 44 g/L, reticulocytes 2%, iron 1.5 umol/L, ferritin 16 ug/L). Ultrasound revealed a gastric lactobezoar sized 5x5x7 cm for which complete dissolution was sonographically demonstrated after 48 hours of intragastric N-acetylcysteine. Conclusion: intragastric N-acetylcystein may be a possible alternative to endoscopic or surgical removal of large gastric lactobezoars.

P0444

Title: Symptomatic heterotopic gastric pancreas (hgP): to resect or not resect?

Barbara Brunner 1, Thomas Müller 1, Maria Fankhauser 1, Johannes Eder 1, Peter Heinz-Erian 1
1) Dept. Pediatrics, Innsbruck, Austria

Summary:
Introduction: heterotopic gastric pancreas (hgP) is defined as pancreatic tissue located in the gastric wall lacking anatomic or vascular connection with the orthotopic pancreatic organ. Post mortem studies have found hgP tissue in up to 10% of probands who had been asymptomatic all their life. In children, hgP is usually diagnosed by radiography or endoscopy when they have symptoms such as abdominal pain or vomiting. Complications of undiagnosed hgP may be gastric perforation, gastric pancreatitis, formation of abscesses or cysts and – in adults – malignancy. There is much controversy as to whether symptomatic hgP should be resected. Objective: to review the literature for reaching a decision how treat a 10 year old boy with hgP. Methods: PubMed and Cochrane databases were searched the period between 1956 – 2008 and the treatment of pediatric patients (0-18 years old) with symptomatic gastric hgP documented. Results: To our surprise, in addition to our index patient, we detected only 11 publications which contained 14 pediatric patients with symptomatic gastric hgP. In this group of 15 probands we found the following characteristics: age of appearance of first symptoms 7.6 ± 5.2 years (0.1 – 10.8 years); 12/15 patients were males; in 10/15 patients the hgP was localized to the antrum. Presenting symptoms were: abdominal pain (9/15), vomiting (7/15), dysphagia (2/15), occult fecal blood (3/15). An initial diagnosis was made by abdominal ultrasound (5/15 cases), gastric endosonography (2/15), radiography (4/15), CT-scan (4/15), MRT (3/15), upper endoscopy (4/15). The sizes of hGPS were between 0.3 and 3.2 cm in diameter. The presence of hgP was verified histologically after endoscopic resection (2/15) or surgical resection (10/15). 10/12 resected patients were free of symptoms postoperatively. Conclusion: The few retrospective data in children argue in favor of surgical resection of symptomatic gastric pancreatic tissue.

P0445

Title: Pattern of pediatric inflammatory bowel disease in Northern Stockholm 2002-2007

Petter Malmborg 1, Scott Montgomery 2, Lena Grahnquist 1, Hans Hildebrand 1
1) Department of Women and Child Health, Karolinska University Hospital, Karolinska Institute, Stockholm, Sweden 2) Clinical Epidemiology Unit,
Objective: During the 1990s several areas in Europe and North America saw an increased incidence of paediatric (under age 16 years) inflammatory bowel disease (IBD). Our group reported a sharp increase in PIBD incidence in Northern Stockholm, Sweden between 1990-2001. We reported a shift in presentation of PIBD from ulcerative colitis (UC) towards Crohn’s disease (CD). The incidence of (CD) in Northern Stockholm between 1999-2001 was higher than had been reported from other areas. Method Astrid Lindgrens Children Hospital is the only paediatric gastroenterology (GE) unit in the general population based catchment area of Northern Stockholm. All our records of patients aged 0-15 years diagnosed between 2002 and 2007 with suspected IBD were scrutinized. All patients were diagnosed according to the recommendations in the Porto criteria (2005). Data on the population in the catchment area was obtained from Statistics Sweden. Adult GE units within our catchment area and paediatric GE units in bordering areas were requested to report PIBD patients living in Northern Stockholm during the study period. Result A total of 134 children were diagnosed with IBD. The incidence in 2002 (per 100,000 per year) of PIBD was 10.0 (95% confidence interval (CI) 3.05-17.0). The incidence of PIBD in 2007 was 11.5 (95% CI 3.77-19.2). There was evidence of an increasing incidence of UC (p<0.05). No temporal trend was seen for CD. Isolated colonic CD was the most common phenotypic presentation of CD and there was a male predominance. Only one of the identified patients was diagnosed and treated in another GE unit. Conclusion The incidence of paediatric UC in Northern Stockholm may be continuing to increase. This observation differs from what has been reported from other areas in the western world in the last decade. The incidence of paediatric CD in Northern Stockholm no longer seems to be increasing, but is still higher than reported in most other parts of the world.

P0446

Title: THE VALUE OF ESOPHAGEAL pH MONITORING FOR THE DIAGNOSIS OF GASTROESOPHAGEAL REFLUX IN INFANTS

Alexandru Pirvan 1, Tudor L Pop 1, Nicolae Miu 1
1) University of Medicine and Pharmacy, 2nd Pediatric Clinic, Cluj-Napoca, Romania

Summary: Background: Gastroesophageal reflux disease (GERD) is frequent in infants, mainly around the age of 4 months. Perceptible (visible) regurgitation occurs only in 20% of the episodes of gastroesophageal reflux detected by pH monitoring or gastric scintiscan. Aim: To evaluate the relationship between different parameters of esophageal pH monitoring and clinical manifestations in patients with GERD. Material and methods: We have studied retrospectively a group of 31 infants (18 boys and 13 girls), age between 5 to 11 weeks, followed-up in a pediatric hospital during November 2005 - June 2007. All these patients have been investigated by 24 hours esophageal pH monitoring. Including criteria: suspicion of gastroesophageal reflux in infants with extradigestive clinical manifestations, persistent gastroesophageal reflux after treatment, and no prokinetic medication 48 hours before the examination. Excluding criteria: length of pH monitoring shorter than 18 hours, graphics with artifacts. Results: There are several significant differences for reflux parameters in symptomatic patients: subjects with chronic cough have higher reflux index (RI, p=0.0192) and Euler score (ES, p=0.0300) than those without cough, subjects with recurrent pneumonia have higher values for the length of the longest episode of reflux (LLER) than those with no pneumonia (p=0.0245), subjects presenting wheezing have higher number of episodes of reflux (NER) than those with no airway obstruction symptoms (p=0.0412), subjects with malaise have a higher ES than those without malaise (p=0.0224), subjects showing growth failure have higher number of episodes of reflux longer than 5 minutes (NER5) than those with normal somatic development (p=0.0185). Conclusions: Esophageal pH monitoring is useful to assess GERD in infants. RI and Euler score are useful to distinguish between physiological and pathologic acid reflux. Together with other parameters (LLER, NER, NER5) they are correlated with clinical manifestations associated with GERD.

P0447

Title: Adalimumab treatment in children with refractory Crohn’s disease

Yoram Rosenbach 1, Corina Hartman 1, Rivka Shapiro 1, Akiva Hirsch 1, Yaron Avitsur 1, Raanan Shamir 1
1) Institute of GI, Nutrition and Liver Dis., Schneider Children’s Medical Center of Israel, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

Summary: Background: Adalimumab has been used for induction and maintenance of remission in adults with moderate to severe Crohn’s disease (CD), refractory or intolerant to infliximab. However, information on safety and efficacy of adalimumab in children with CD is limited to a few published case reports. Aims and Methods: We present a case-series of 14 children (9 males, median age 13.9 years) with severe, refractory CD treated with adalimumab, over a 3-year period (2004-2007). Results: Children were treated using 160/80 mg/1.73 m2 induction regimen followed by 40 mg/1.73 m2 maintenance treatment during 6.5 (range 1-36) months. All had steroid or immunosupression refractory disease. Ten patients (71%) had been previously treated with infliximab. All children showed short-term (4 weeks) clinical and laboratory response to adalimumab. Ten children were...
treated for 3 to 36 months and 9/10 showed good clinical response although half needed several dose escalations to maintain remission. Adalimumab treatment enabled complete steroids withdrawal in 50% (4/8) of steroid-dependent children. Currently, six children are in remission with adalimumab monotherapy for a median 10.5 months (range 3-17). Abdominal abscess developed in an adolescent with partial response to adalimumab.

Conclusions: Adalimumab may induce and maintain remission in children with CD, suggesting that adalimumab could be an effective alternative for treatment of these difficult-to-treat children with CD, at least in the short-term. Prospective safety and efficacy confirmation of this data in children is necessary.

P0448

Title: Antibiotic Resistance of Helicobacter Pylori Isolates in Israeli Children

Noam Zevit 1, Zmira Samra 2, Itzhak Levy 3, Haim Shmuely 2, Raanan Shamir 1, Jacob Yahav 2
1) Institute of Gastroenterology, Hepatology and Nutrition, Schneider Children’s Medical Center, Tel-Aviv University, Petach Tikva, Israel 2) Helicobacter pylori Research Institute, Rabin Medical Center, Beilinson Campus, Petah Tikva, Tel Aviv University, Tel Aviv; Israel 3) Department of Pediatric Infectious Diseases, Schneider Children’s Medical Center of Israel, Petach Tikva, Israel

Summary:
Objectives: Helicobacter pylori is a common cause of morbidity, but its eradication has often proven a difficult task. Our objectives were to prospectively determine the antibiotic susceptibility of H. pylori isolates from children, define the role of previous antibiotic use on resistance, and to explore the possibility of simultaneous colonization with multiple H. pylori strains with differing resistance patterns. Methods: One hundred seventy four children aged 1-18 years underwent gastric biopsies for clinical evaluation of various complaints; two biopsies from each patient were cultured for H. pylori, between 2005-2007. Antibiotic susceptibility to amoxicillin, clarithromycin, metronidazole, tetracycline, and levofloxacin was determined by the E-test method. A pre-defined questionnaire was used to collect demographic and clinical data. Results: 53 of the 174 patients enrolled were culture positive for H. pylori. Resistance to clarithromycin and to metronidazole was 31% each. Multiple drug resistance (to both clarithromycin and metronidazole) was found in 13% of isolates. No resistance was found to amoxicillin, tetracycline or levofloxacin. Lower rates of resistance were found in isolates from naive patients compared to post-treatment failures (25% vs. 42% for clarithromycin; p= 0.22; and 19% vs. 52% for metronidazole; p=0.016). All cases of multiple drug resistance (n=7) were from patients with previous treatment failures. Prior use of macrolides was significantly associated with clarithromycin resistance (p=0.033). Two patients (3.8%) simultaneously harbored two different strains Conclusions: Resistance of H. pylori in Israeli children to clarithromycin and metronidazole is high. Following treatment failure, rates of both single and double resistance are increased further. H. pylori culture based treatment should be considered in these cases. Previous macrolide use is significantly associated with increased H. pylori resistance to clarithromycin. The identification of heterogeneous resistance patterns in a single stomach is a troublesome observation that needs to be further characterized.

P0449

Title: COMPARISON OF TWO METHODS OF TOILET TRAINING

Ferney Baquero-Quevedo 1, Angela Camacho-Lindo 1, Rafael Guerrero-Lozano 1
1) Universidad Nacional de Colombia, Bogota, Colombia

Summary:
Two main methods of toilet training have been proposed by Brazelton (Child-oriented theory) and Azrin & Foxx (Structured-behavioral theory). There is no evidence in literature to support either as more effective. Aim: To compare the outcomes of two toilet training models in toddlers. Method: Randomized controlled trial with 72 toddlers who attended eight nurseries or kindergardens in Bogotá. Children were randomized to the Azrin & Foxx method, the Brazelton method or the institution’s own method. Follow up interviews to parents and teachers were performed in order to identify success in toilet training, ie absence of fecal and urinary accidents (diurnal or nocturnal events). Results: There were no statistically significant differences with respect to baseline characteristics of the groups except for age and socioeconomic status. When method A and B were compared, RR for urinary accidents was 1.26 (CI 95%; 0.75-2.14), 1.08 (CI 95%; 4.44-2.69) for fecal accidents and 0.66 (CI 95%; 0.44-1.00) for nocturnal accidents. No relation was found between successful control and variables such as age, gender, socioeconomic status, temper and constipation. Conclusion: Our results show that achievement of bowel and bladder control is the same with either method.

P0450

Title: Squid ink: a proposed new way of measuring oroanal transit time.
Rafael A. Guerrero-Lozano 1, Daniel Acero-Moreno 1
1) Universidad Nacional de Colombia, Bogota, Colombia

Summary:
Introduction: Oroanal transit time is a useful tool for global measurement of the speed at which foods are eliminated; it serves as part of the study of the effect and the kinetics of other substances. Aim: To evaluate and propose a new method to determine total intestinal transit time based on dyed stool with squid ink. Method: Fifty school age children (26 males) were included in a pilot study. They ate squid ink dyed rice in an age related amount. Intestinal transit time was defined as the time elapsed from ingestion to the first colored stool. Data were analyzed according to age and sex. Children who receive laxatives, as well as those with a history of allergies or intolerance to dyes were excluded. Results: All the children ate the rice. No cases of emesis or intolerance to food were registered. Five children (10 %) did not report changes in stool color. Out of the remaining 45 children, 22 (48.9 %) were girls and 23 (51.1 %) were boys, with an average age of 9.1 years (range 3 to16). No linear relation was found between intestinal transit time and age or sex in the whole group. The mean time for females was 31.7± 13 hours and 32.1±20.5 hours for males. None of them presented adverse reactions to the ingestion of squid ink. Conclusion: Ingested squid ink induces changes in stool coloration and can be used as a marker of intestinal transit. The present results do not show relation between oroanal transit time and age and sex. They show wide variations of the total transit time similar to those observed in other studies about colonic transit time with different methods in healthy school age children.

P0452
Title:
Salivary RIA anti-transglutaminase antibody detection as a powerful tool for celiac disease screening in general population: results in six to eight year-old Italian school-children.

Raffaella Nenna 1, Claudio Tiberti 2, Monica Montuori 1, Arianna Turchetti 1, Lia Di Renzo 3, Margherita Bonamico 1
1) Departments of Paediatrics, University “Sapienza”, Rome, Italy 2) Departments of Clinical Sciences, University “Sapienza”, Rome, Italy 3) Assessorato per la Famiglia e l’Infanzia, Comune di Roma, Rome, Italy

Summary:
Objective: The high prevalence and the complications of an undiagnosed coeliac disease (CD) prompted us to evaluate a new, non-invasive disease screening strategy. The aim of our study was to identify CD in school-age children in order to: a) perform a timely diagnosis of the disease b) start the gluten-free diet (GFD) in compliant children c) achieve the growth target and prevent CD complications. Methods: 5000 six to eight year-old school children were invited to participate to the study, over the period March 2007-February 2008. Of them, 4048 salivary samples were collected and tested for presence of anti-transglutaminase antibodies (tTGAbs) using a fluid-phase radioimmunoprecipitation method (J Pediatr, 2004). Children found salivary tTGAb positive were subsequently tested also for presence of serum CD-specific antibodies (RIA tTGAbs, ELISA tTGAbs and EMA).
The children confirmed as serum positive underwent endoscopy with multiple duodenal biopsy, and at the final diagnosis of CD started a GFD. Results: The allowance of the parents to perform the screening was 86% and 95% of children collected an adequate salivary sample. Of 4048 children, 31 (0.8%) were found salival tTgAb positive and 8 (0.2%) with border-line levels. 30/31 (96.7%) and 3/8 (37.5%) of these subjects were also serum Ab positive, respectively. To date, 24 children underwent intestinal biopsy showing villous atrophy and 3 children started GFD without performing the endoscopy. The overall prevalence in the population investigated (including 22 CD known cases) was 1.3%. The ratio between symptomatic and asymptomatic patients was 4:6. The follow-up (three-six months) of CD patients showed a strict adherence to the GFD, a weight increase and an improvement of the well-being. Conclusions: A population screening strategy implies: the presence of a common severe disease; the availability of an accurate, sensitive, specific, low invasive and, possibly, low-cost test to identify the disease; a gap between the pre-clinic stage and complications. In this study we demonstrated that it is possible to perform a powerful, non-invasive, simple, well-accepted, reproducible and sensitive CD screening using saliva. Until now, the compliance to the GFD in screened CD children (aged from six to eight years) has been optimal. A longer follow-up might show if an early diagnosis in asymptomatic children and a strict GFD will permit a proper growth and prevent complications in CD children.
P0455

Title: Juvenile polyposis of infancy in combination with pulmonary arteriovenous malformation and hypertrophic osteoarthropathy: Case report

Ana Regina Lima Ramos 1, Raquel Borges Pinto 1, Marina Adami 1, Lucia Muller 1, Paulo Sérgio Gonçalves da Silva 1, Valentina Provenzi 1
1) Hospital da Criança Conceição, Porto Alegre, Brasil

Summary:
Objective: Juvenile polyposis of infancy is the most severe form of the juvenile polyposis syndrome and is characterized by early onset, digestive bleeding, intussusception, rectal prolapse or protein losing enteropathy. This is a description of a case of juvenile polyposis of infancy in a 4-year-old child, treated with total colectomy. Methods and results: L.K.W., 4 years old, female, Caucasian, with a history of chronic diarrhea with hematochezia and anemia since 3 months of age, requiring several hospital admissions and a large number of blood transfusions. Colonoscopy revealed more than 30 polyps in the colon, from the cecum to the rectum. Multiple biopsies demonstrated that these were juvenile polyps, some with ulceration, and a diagnosis of juvenile polyposis of infancy syndrome was made. Upper digestive endoscopy was normal. During the patient’s most recent admission to hospital she presented with lower limb edema and pain, mobility problems and facial edema. Examination also revealed malnutrition, discolored mucosa and significant clubbing of fingers and toes. Lower limb X rays demonstrated bilateral intense diffuse periosteal reaction. Bone scintigraphy showed a diffuse increase in activity throughout the skeleton, compatible with hypertrophic osteoarthropathy. Chest X rays demonstrated a nodule in the right lung, confirmed by a chest CT scan, and the pulmonary biopsy revealed arteriovenous malformation. Other tests: Hemogram: Hct 27, Hg 7.8 g/dL, albumin: 2.6 g/dL, ESR: 73mm, C-reactive protein: 65mg/L (<5). FAN, rheumatoid factor, liver function tests, abdominal echography and echocardiography were all normal. While in hospital, the patient suffered a convulsive crisis, and EEG findings were disorganized for the age, with slow activity, while MRI of the head revealed discrete ventricular dilatation. Due to the severity of the case, total colectomy by videolaparoscopy was indicated. After this surgery, the patient was discharged from hospital on a hydrolyzed protein diet and shows excellent progress and weight gain. Postoperative complications were an abdominal abscess and a small fistula, which receded with antibiotic therapy. Conclusion: This was an uncommon case of juvenile polyposis of infancy with significant systemic repercussions. In pediatric patients with juvenile polyposis, the possibility of extradigestive manifestations should always be investigated.

P0456

Title: Long term follow-up in patients with childhood-onset gastroesophageal reflux (GER)

Raquel A Furnes 1, Eduardo J Cuestas 1, Carlos A Rezzonico 2
1) Hospital Privado, Cordoba, Argentina 2) Facultad de Ciencias Medicas, Cordoba, Argentina

Summary:
INTRODUCTION: Gastroesophageal reflux is prevalent in infants and regurgitation and vomits becomes less frequent as time goes by. While the grown up children and adults tend to have chronic evolution and/or relapse. The objective was to determine the prevalence of symptomatic GER in a group of patients, five or more years after the diagnosis had been established. METHODS: GER was established monitoring the esophageal pH during 24 hours in 261 children that had consulted at the Section of Gastroenterology Pediatrics in our hospital, between the years 1983 and 1999. Ninety eight of them could be interviewed from 5 to 20 years after diagnosis (median 9.8 years). Patients affected by chronic or congenital diseases were excluded. This is an investigation of the natural evolution of the disease performed by personal interviews that took place many years after the diagnosis had been established. Nominal variables were analyzed by chi square test, Fischer’s exact test and Yate’s correction. Ninety five % confidence limits were calculated for percentages. Values of p < 0.05 were considered significant. RESULTS: The patient’s ages at the time of the interviews ranged from 5 to 29 years (median 14 years) 60.2 % were males (95% CI 50.0 -70.0) and 39.8 % were females (95% CI 29.5-49.4) with a 1.5 M/F ratio. At that time, 68.4% of them were symptomatic. The symptom’s prevalence was qualified according to the age at diagnosis. In 19.4% the diagnosis has been established before the age of two while 49% were diagnosed at a later date. The difference between these figures is highly significant (chi square 20.7 p = 0.0001). The study population was divided into two groups according to the symptoms that motivated the original consult: a) 41.8 % had consulted because of gastroesophageal symptoms (heartburn, regurgitations, vomiting, recurrent abdominal pain, dysphagia) b) 58.2 % had consulted because of other symptoms (obstructive recurrence bronchitis, asthma, apneas, recuring pneumonia, Sandifer syndrome, convulsions). The prevalence of symptomatic GER at the time of the interviews was similar in both groups (p = 0.55). CONCLUSIONS: In early years of life GER is a benign process that disappears in most cases. When it is diagnosed at an older age, it frequently persists during 5 or more years, becoming either a chronic or a recurrent process that may lead to the development of complications.

P0457
**Title:**
**PEDIATRIC ACHALASIA; SINGLE INSTITUTIONAL EXPERIENCE.**

Rathna P. Amarnath 1, Juan Camps 1

1) University of southcarolina school of medicine, Columbia, SC, USA

**Summary:**
Achalasia is an esophageal motility disorder rarely seen in pediatric patients. We report our experience over the past 5 years: 9 (7 Male:2 Female) patients presented with classic symptoms of solid and liquid dysphagia, vomiting and weight loss. Mean age was 14.2±1.7(11-17)yr. Duration of symptoms; Vomiting 11.7±1.9 (1-60) months; dysphagia 14.4±1.8(5-60) months; weight loss 9±3(6-13) lbs(n:4)(mean±SD). Work up included UGI/Barium swallow, Esophageal motility study and upper endoscopy with balloon dilation of LES. Barium swallow showed dilated aperistaltic esophagus in 7 and dilated and tortuous esophagus in 2 pts. Motility study showed a mean LES pressure of 44.7±6.4 mm of Hg( normal 10-20 mm of Hg) and incomplete relaxation with swallowing. All had Aperistalsis, 3 had retrograde contractions and 3 had simultaneous contractions. Endoscopy showed dilated severely erosive esophagus with significant stasis in all. Response to dilatation was brief(34±2.1 days). All patients underwent Laparoscopic Heller-Dur procedure consisting of lower esophageal myotomy, Diaphragmatic hiatal repair and partial anterior fundoplication. All patients responded well to surgical therapy. All patients were able to tolerate liquids and solids, gained weight. Mean follow up after surgery was 25.1±3.1 months. One patient required reoperation to repair fundoplication. One patient had recurrence of symptoms and had repeat myotomy, rest were able to tolerate diet well at the time of follow up. Conclusions: Pediatric achalasia patients have symptoms for long time before they are referred for evaluation. All have classic esophageal motility abnormality. There is poor response to esophageal balloon dilatation. Laparoscopic Heller-Dur myotomy can be done with little morbidity and patients respond well to surgery.

P0458

**Title:**
**Non-invasive testing for pediatric eosinophilic esophagitis**

Rayna Grothe MD 1, Brock Doubledee DO 2, Hirohito Kita MD PhD 1, James Lee PhD 1, Yvonne Romero MD 1, Jeanne Tung MD 1

1) Mayo Clinic, Rochester Minnesota and Scottsdale Arizona, United States of America 2) Sanford USD Medical Center, Sioux Falls South Dakota, United States of America

**Summary:**
**ABSTRACT BODY:** Background: At present, the diagnosis of eosinophilic esophagitis (EE) is based on the histologic finding of greater than or equal to 20 eosinophils (eos)/hpf in esophageal biopsies collected at upper endoscopy (EGD). Our objective was to identify non-invasive biomarker(s) that can be used clinically to accurately determine the presence or absence of EE in pediatric patients. Methods: Prospective, multi-center, nested case-control study of outpatients (ages 1 to 17 years) at Sanford USD Medical Center, SD, and Mayo Clinic, MN, scheduled to undergo EGD to evaluate vomiting, failure to thrive, feeding aversion, abdominal pain, or dysphagia. All eligible clinical patients were invited to participate. Subjects whose guardians gave written informed consent underwent buccal swab and phlebotomy prior to their clinically indicated EGD, with histology held as the gold standard. Subjects with greater than or equal to 20 eos/hpf are cases (EE); subjects with zero eos/hpf are healthy controls (HC). Investigators were blind to case/control status. At this time, 15 cases [8 males; mean age 6.9 yrs (range 15 mos to 17 yrs)] and 14 controls [8 males; mean age 6.6 yrs (range 16 mos to 17 yrs)] have participated. Results: To date: Both eosinophil-derived neurotoxin (EDN) (p = 0.008) and eotaxin-3 (p=0.03) levels significantly differed between cases and controls, with eotaxin-3 demonstrating greater discriminative ability (see graph). Extracellular EDN on esophageal biopsy was found in 7/7 cases and absent in 6/6 controls. Extracellular eosinophil peroxidase (EPO) on esophageal biopsy was present in 14/14 cases, and absent in all controls 10/10 (p=0.002). Buccal EPO was present in 3/5 cases and 0/3 controls. Conclusion: Preliminary results suggest that serum eotaxin-3 and serum EDN levels, tissue EDN stain, and buccal and tissue EPO stains correlate well with greater than or equal to 20 eos/hpf in esophageal biopsies. Serum EDN and eotaxin-3, and buccal EPO hold promise as non-invasive markers of eosinophilic esophagitis in the pediatric population.

P0459

**Title:**
**Celiac disease: when gluten-free diet is not effective**

Maria Revnova 1 , Tatjana Gabrusskaya 1

1) Pediatric Med.Academy, St.Petersburg, Russia

**Summary:**
Following gluten-free diet (GFD) stopped symptoms of the disorder at majority of celiac children during first year of the diet. But there is a group
of celiac children who follow the GFD more than a year with poor results. In this case according to J.A. Murray one should check the diet again and again. Besides in some cases we see the recurrence of complaints in children following strict GFD. In this case we should look for other reason that can often cause abdominal pain. Objective. During one year 250 celiac have been admitted to Pediatric Department 04 SPSPMA. Methods. Diagnosis was made according to Standards of diagnostics and treatment of gastrointestinal disorders (1998). Results. Chronic active gastroduodenitis associated with Helicobacter Pylori was found in 36 children (22%). All patients suffered from pain in epigastric and pyloroduodenal area, they complained of nausea and fastening pain. Pseudotuberculosis (abdominal or mixed forms) was found in 32 patients (13%) with celiac disease. All patients suffered from abdominal pain of different strength and localization. 60% complained of abdominal pain in umbilical area. 80% of patients had subfebrile temperature or episodes of febrile temperature. At examination local tenderness in ileac area was noticeable. Patients with giardiasis (4%-11 patients) complained of pain in umbilical area, loss of appetite, abdominal distension, vomiting, loose stool, arthralgia. Hepatomegaly was found in 1/3 of patients. Correction of disbiosis found in all celiac patients is one of the most complicated problems. In 80% of children we see decrease of E. Coli leading to clinical manifestation and thus necessity of correction. Conclusion. All children were treated at the hospital for not less than 2 weeks with good clinical effect. Following 3 months majority of children didn’t have any complaints. 3 patients with concomitant giardiasis and abdominal form of pseudotuberculosis kept having abdominal pain and subfebrile temperature.

P0460

Title: Problems of celiac children in Russia

Maria Revnova 1, Homan B. Layl 1, Ivan Krasnogorsky 1, Tatyana Gabruskaya 1
1) Pediatric Medical Academy, St. Petersburg, Russia

Summary: Being one of the most common representatives of malabsorption syndrome celiac disease is being diagnosed more and more often in Russia. Objective. The purpose was to investigate clinical features of CD in Russia. Methods. To confirm celiac disease we have examined 306 celiac children by examination of antigliadin and tissue transglutaminase antibodies, morphological examination of duodenal biopsy performed before and year after starting gluten free diet (GFD). Identification of genetic predisposition (HLA-system) is desirable. 92-95% of celiac patients have genetic predisposition according to HLA-system, but in 5-8% realization of the disorder is possible through another mechanisms thus absence of HLA DQ2/DQ8 genes doesn’t indicate absence of celiac disease. Results. Infants start to loose weight, having loose fatty stool more than 2 times a day (83%), abdominal distension (41%), abdominal pain (73%), vomiting (48%), loss of appetite (44%), decrease of weight and height gain (81%), symptoms of food intolerance (64%), calcium metabolism disorders (53%). Majority of children are irritable, aggressive, have sleeping disorders (80%). Many celiac children have symptoms of protein, vitamin and microelements malabsorption such as recurrent upper respiratory tract infection- more than 3 times a year, fatigue, short time memory disorder, muscular weakness and recurrent muscular seizures, recurrent nose, juvenile and other forms of bleeding, menstrual cycle disorders, night vision disorder, skin itching, hair loss, vitiligo. Variety of symptoms often leads to diagnostic mistake and thus makes us call celiac disease “a great mimics”. Conclusion. There are about 1500 celiac patients in Saint-Petersburg. GFD puts limitation in all spheres of life of celiac children. Gluten free products are more expensive, besides celiac children should go to specialized group with special diet, in school the child can’t go to common dinning hall if there is no GFD. The absence of guaranteed product labeling also creates problems for families of celiac patients. According to experience of European countries, it is necessary to provide basic set of gluten free products for each celiac family. Besides it is necessary to provide gluten free diet in schools, kindergartens, hospitals and other children institution.

P0461

Title: DYSECHESIA INCIDENCE IN Newborn/INFANTS

Reynaldo Michel Aceves 1, Edgar Cardosa Garza 1, Patricia Fernandez Guzman 2, Omar Gonzalez Santos 1
1) Central Militar Hospital, Mexico. D.F. Mexico 2) Clinica De Especialidades De La Mujer, Mexico.D.F., Mexico

Summary: Infantile dyschesia according to Rome III criteria considered as a functional disorder in Newborn/Infants. AIMS: To determine the dyschesia incidence in newborn/infants. MATERIAL AND METHODS: healthy newborn patients born during one month in a maternal infantile clinic of the Mexican Army. With a Mothers explanation of the clinical data. by means of a questionnaire; the following variables were investigated: son’s number, weight to the birth, C section or vaginal delivery, sex, age of beginning of the symptoms, feeding type. The patients were observed by means of a questionnaire; the following variables were investigated: son’s number, weight to the birth, C section or vaginal delivery, sex, age of beginning of the symptoms, feeding type. The patients were observed by period of four months with monthly appointments. The dependent variable of the study was the dyschesia, manifested during the period of study. The results were analyzed in a model of logistical regression for qualitative variables SPSS version 9 : RESULTS 309 births during one month, 126 presented clinical data compatible with dyschesia it represented an incidence of 40.8%. son’s number in the affected group was of 1 and 0.71 son and in the group control of 2 + 1.15, what indicates that it is a tendency to prevail in first-borns. The weight, term or prematurity and C section or vaginal delivery didn’t present differences, the sex differences between both groups (with and without dyschesia) X2 = 3.793 (1 g.l.) p < 0.05, being observed
bigger frequency of the female sex in the group with dyschesia. Feeding with formula, in the affected group 125 (52.3%) of the cases received feeding with formula, contrary to 22 (31.4%) of the control group, with differences statistically significant between both groups $X^2 = 10.032 (1 \text{ g.l.}), p < 0.002$. 71% with symptoms onset in the first month of age being more frequent between the 3ª and 4ª weeks. CONCLUSIONS: The infantile dyschesia is a frequent complaint presented an incidence of 40.8%. With a bigger incidence during the first month, first-born, female sex and feeding with formula, are factors that make more frequent the symptom.

P0462
Title: Gastrointestinal disorders in children with cerebral palsy
Reynaldo Michel Aceves 1, Edgar Cardosa Garza 1, Lilian Lucia Romero 1
1) Central Militar Hospital, Mexico. D.F, Mexico
Summary:
Aims: to determine the presence of gastrointestinal disorders in pediatric patients with cerebral palsy (CP) MATERIAL AND METHOD descriptive Observational a questionnaire filled by the parents of the patients with CP at pediatric neurology and of Gastroenterology offices between January 1991 and December of 2000 the inclusion criteria: children of between 6 months and 14 years with diagnosis of CP, we excluded children with any syndrome they were evaluated in the clinic of pediatric gastroenterology clinical and systematic examination and we used a questionnaire guided to detect alterations in the suction, deglution, abdominal pain and constipation, supplement by barium esophagography and/or pH probe. RESULTS: in the period of study 150 patients were collected. 65 infants 47 preschoolers 32 schoolars 6 adolescents, 95 males, the clinical manifestations we found 1. - disorders of the feeding and deglution 113 cases (75%) in 91 cases (61%) with cough at feeding, dribble or escapes of the foods in 11 cases, (8%), and patient that didn't swallow 3 cases (2%). 2. - vomit and regurgitation in 78 cases (52%). 3. - constipation in 125 83%, 102 cases 68% with two alterations for patient. 4. - complications 52 cases (35%) with repetition pneumonia. in 89 cases (59%) was some degree of malnutrition Conclusions the gastrointestinal disorders are quite frequent in patient with CP, they are located in both ends of the digestive apparatus, early diagnoses and the opportune treatment will diminish complications and improve the quality of the patients' life and of its family.

P0463
Title: HELICOBACTER PYLORI: SYMTOMS AFTER ERADICATION THERAPY I N PEDIATRIC AGES
Michel Reynaldo 1, Michel Reynaldo 1, Michel Reynaldo 1, Cardosa Eddgar 1, Cardosa Eddgar 1, Cardosa Eddgar 1, Alonso Nancy 1, Alonso Nancy 1, Alonso Nancy 1
1) Central Militar Hospital, Mexico D.F., Mexico
Summary:
AIMS: To compare symptoms in children infected with H. pylori after eradication treatment. MATERIAL AND METHODS: clinical not randomized, trial in children with dyspepsia (abdominal pain, pirosis and abdominal adistention) and other gastrointestinal symptoms (flatulence, nausea, vomit) upper endoscopy, and positive biopsy to H. pylori. The sample size of the: it shows he/she was considered to a CI of 95%, precision of 10 and effectiveness of 80%. The used treatment of eradication was claritromicin 7.5mg / k / dose 2 times a day), amoxicilin (50mg/k/día 3 times a day) and omeprazol (10mg 2 times a day in children smaller than 30kg and 20mg 2 times a day in those bigger than 30kg). 4 weeks after concluding the treatment of eradication, was confirmed with fecal monoclonal antibodies, as well as the clinical correlation RESULTS 54 patients, 31 males (57.4%) and 23 females (42.6%).the % of eradication was of 87%. The flatulence was the only symptom that was related with age, finding a significant ($p < 0.05$) difference among the children of the group from 5 to 8 with the symptom in question. Dyspepsia in 26/54 patients (48.1%). Post treatment only in 12/26 being statistically significant ($p > 0.05$). we find an associate symptom, Constipation in 40 patients (74%) that disappeared in 87.5%. after treatment, nausea persisted in 3 of 27 patients, flatulence remitted completely in the 10 patients with the symptom. Vomits diminish in 68%, persisting in 7 of 22 patients, being statistically significant ($p > 0.05$). CONCLUSIONS The found the percent of eradication doesn't have significant difference with that reported in the literature. The treatment of 7 days demonstrated to be effective for the eradication and control of the symptoms and most of our patients. In this study, the association pain abdominal-infection, demonstrated bigger rates to those reported. constipation as a symptom joined to the dyspepsia contrary to that reported that other and disappears after treatment. It is pending to establish the bond among the infection for H. pylori and this symptom.

P0464
Title: Gliadin peptide P31-43 interferes with Il15 trafficking: implications for gliadin mediated effects.
M. Vittoria Barone 1, Sara Santagata 1, Mieke ten Eikelder 1, Valentina Discepolo 1, Riccardo Troncone 1, Salvatore Auricchio 1
1) Pediatric Department (ELFID), Naples, Italy

Summary:
Background: We previously observed that α-gliadin peptide P31-43 induces effects similar to Epidermal growth factor (EGF) both in cultured cell lines and in enterocytes from celiac disease (CD) patients. The effect is mediated by delayed EGF degradation and prolonged EGF receptor (EGFR) activation in endocytic vesicles due to P31-43 mediated interference with endocytic maturation. Objective: To test P31-43 effects on IL15 induction at level of transcription, translation, intracellular trafficking and its role in P31-43 induced proliferation. Methods: Semi-quantitative and real time PCR investigated P31-43 effects on IL15 mRNA levels. Protein levels and distribution was analyzed by FACS, ELISA and immunofluorescence. Stat5 and IL15R alfa activation has been examined by WB. BrdU (Bromodeoxyuridine) analyzed proliferation. Results: In Caco 2 cells P31-43 does not increases IL15 mRNA levels. IL15 protein was found increased only on the cells surface together with markers of recycling vesicles, as transferrin and Lamp2, implying a P31-43-mediated interference with IL15 vesicular trafficking. IL15 is linked to the receptor, is not dependent on new protein synthesis and functions as a growth factor. Stat 5 and the IL15 receptor alfa (IL15Ra) are activated after P31-43 treatment. Anti-IL15 blocking antibodies can prevent P31-43 induced increase of proliferation in Caco2 cells and in enterocytes of biopsies from CD patients. Conclusion: P31-43 increases IL15 levels on the surface of Caco2 cells interfering with its vesicular trafficking. IL15 so presented functions as a growth factor and P31-43 induced proliferation can be prevented by inhibitors of both EGFR and IL15 pathway activation.

P0465

Title:
Intestinal deposits of IgA anti-tissue transglutaminase antibodies in children with potential coeliac disease

Maria Maglio 1, Antonella Tosco 1, Renata Auricchio 1, Barbara Colicchio 1, Rachele Sciorio 1, Riccardo Troncone 1
1) Department of Pediatrics and European Laboratory for the Investigation of Food-Induced Diseases, University Federico II, Naples, Italy

Summary:
Objective: Anti-tissue transglutaminase (anti-TG2) IgA autoantibodies are detectable in serum of the great majority of patients with untreated coeliac disease (CD). Many evidence suggest that they are primarily produced in the intestinal mucosa. The detection of IgA anti-TG2 intestinal deposits is proposed to be a specific and sensitive tool for the diagnosis of CD. The aim of this work is to investigate the presence of anti-TG2 IgA autoantibodies in the small intestine of patients with potential CD (subjects with presence in the serum of anti-endomysium antibodies (EMA) and/or high levels of anti-TG2, and a normal intestinal mucosa). The presence of intestinal anti-TG2 IgA has been related to the evolution to severe enteropathy. Methods: The study involved 20 children with potential CD (13 F and 7 M, median age 8 years and 9 months). All patients were asymptomatic and showed HLA consistent with CD; they continued a gluten free diet and underwent clinical and laboratory controls every six months, and a second biopsy after 2 years. Anti-TG2 IgA intestinal deposits were detected by double immunofluorescence and confocal microscopy. Results: 15/20 (75 %) patients showed anti-TG2 IgA intestinal deposits. After two years 9/15 still presented a normal intestinal mucosa with IgA anti-TG2 intestinal deposits, while 2 cases such deposits were not observed even if the patients continued to present a positive serology for CD and a normal mucosa. Finally, 4/15 (26.6 %) children with IgA deposits presented, at the time of the second biopsy, villous atrophy. Of the five patients who were negative for anti-TG2 IgA intestinal deposits at the time of the first biopsy, 3/5 were confirmed again negative for those deposits after 2 years; 2/5 become positive and one developed villous atrophy. Conclusions: Most patients with potential CD presented anti-TG2 IgA intestinal deposits, but not always there was correspondence with the presence in the serum. Only 4/15 patients with potential CD, who showed intestinal deposits of anti-TG2 IgA at the time of the diagnosis, developed villous atrophy. In patients with potential CD, after two years of follow-up, the presence of IgA anti-TG2 deposits is not predictive of the development of the mucosal atrophy.

P0466

Title:
SIGNIFICANT ASSOCIATION OF IL2/IL21 REGION AND TNFSF14 GENE IN ITALIAN CELIAC DISEASE FAMILIES

Maria P Sperandeo 1, Annalisa Pianese 1, Andrea Del Mastro 1, Riccardo Troncone 1, Ross Mcmanus 2, Luigi Greco 1
1) Department of Pediatrics and European Laboratory for the Investigation of Food Induced Diseases (ELFID), Federico II University, Naples, Italy 2) Institute of Molecular Medicine and Department of Clinical Medicine, St. James’s Hospital, Dublin, Ireland

Summary:
Celiac disease (CD) is a genetically driven immunological intolerance to dietary gluten with a wide range of clinical presentations. The first genome-wide association study performed in a UK CD case-control cohort revealed an association with a linkage disequilibrium block containing the KIAA1109/Tenr/IL2/IL21 genes at chromosome 4q27, confirmed also in two independent collections (van Heel et al., Nature Genetics, 2007). Objec-
The aim of this study was to replicate the reported associations with the single nucleotide polymorphisms (SNPs) located in the KIAA1109/Tenr/IL2/IL21 gene region and in the TNFSF14 gene, respectively, in Italian CD population using a case-control study design. Patients: The study included 465 cases and 464 controls, originating from the same region of Southern Italy. All cases fulfilled the biopsy proven ESPGHAN diagnostic criteria. Genotyping analysis: Eight candidate SNPs were genotyped, five SNPs in the KIAA1109/Tenr/IL2/IL21 region and three TNFSF14 SNPs, respectively. Statistical analysis: Hardy-Weinberg equilibrium was tested by comparing the expected and observed genotypes in a 2 x 2 Chi Square table. The difference in the distribution of the genotypes in a single polymorphism between cases and controls was evaluated by a Chi Square test. A statistical association between markers of the chromosome 4 and those of the chromosome 19 was evaluated through a combined chi square model. Results: In the KIAA1109/Tenr/IL2/IL21 region, two SNPs (rs13119723 and rs4374642) showed a significant association when compared with controls. In the TNFSF14 gene, the most significant SNP was the rs3760746 marker. In addition, an allelic association was found between the variants located in the KIAA1109/Tenr/IL2/IL21 region and the variants located in TNFSF14 gene. Three combinations were significantly associated in Italian case group. Conclusions: Our data confirm a significant association between the rs13119723 and rs4374642 located in the KIAA1109/Tenr/IL2/IL21 region and CD. An allelic association was found between the variants located in the KIAA1109/Tenr/IL2/IL21 region and the variants located in TNFSF14 gene. This observation might suggest gene-gene interactions between these two genomic regions. Functional studies will be required to firmly establish the true role of these genetic variants in CD and to show which genes are only involved in the pathogenesis or in the genetic susceptibility to CD.

P0467

Title:
Variable Presentations of Herpes Simplex Esophagitis in children and adolescents

Rima Jibaly 1, Walid Abu-hammour 1, Jenny LeChance 1
1) Hurley Hospital, Flint, USA

Summary:
OBJECTIVE Although herpetic infections are always considered in the differential diagnosis of a patient who is immunocompromised with chest pains and/or difficulty swallowing, it is less thought of in the immunocompetent patient. There are only few reports of esophagitis caused by herpes simplex in the immunocompetent patient. Only a handful of these are reported in the pediatric and adolescent population. We are reporting on three patients in this age group who have been identified to have herpes simplex esophagitis. CASES The first patient was an 8 year old who presented with recurrent symptoms of chest pain vomiting and decreased appetite. He had one negative endoscopy on the first presentation in another center and an abnormal one four months later. It showed linearly distributed small ulcers in distal esophagus plus some whitish exudates. The second child was 9 year old who presented with stabbing chest pain, epigastric abdominal pain, and odynophagia. He also had fever, and diarrhea few days prior to presentation. His endoscopy showed circumferential erosions in esophagus and small ulcers in the stomach. The third was an 18 year old with history of dysphagia, odynophagia to both solids and liquids and weight loss of 25 lbs in 9 days period. His endoscopy showed vesicle like lesions and small ulcerations that were linearly distributed in mid esophagus and circumferential erosions distally. Only one of the three cases had the oral lesions that were suggestive of the etiology. They were all diagnosed by viral cultures of the esophageal biopsies to have Herpes simplex infection. Their esophageal biopsies were negative by pathology and immunohistochemical stains for viral etiology and were mostly suggestive of acute, chronic or acute and chronic inflammation. They all responded well to IV acyclovir that was switched to oral acyclovir when they were able to tolerate oral intake. All the patients to our knowledge were immunocompetent. CONCLUSION Herpes simplex esophagitis can have variable presentations. High level of suspicion is suggested even in the immunocompetent patient. This is important when the history of gastrointestinal symptoms is acute, but even if it is recurrent. Viral cultures of the esophageal biopsies should be sent in addition to pathology since the latter can be falsely negative for viral etiology and could be misleading suggestive of reflux in certain cases. Early use of acyclovir hastens recovery and decrease hospitalization.

P0468

Title:
Bone mass accretion in healthy Mexican children of both sexes, aged 6 to 12 from measured by DXA.

Ericka Montijo Barrios 1, Margarita Garcia Campos 1, Pedro Gutiérrez Castrellón 1, Edgar Cardosa Garza 1, Roberto Cervantes Bustamante 1, Jaime Ramirez Mayans 1
1) Instituto Nacional de Pediatría, Mexico City, Mexico

Summary:
Introduction Bone mass accrual during childhood and adolescence results from the interaction of several factors, including genetic, gender (non modifiable) as well as life style, behavioral and ecological (modifiable). This process occurs at a faster rate during the preadolescence years and is almost complete at P4 Tanner’s stage that begins to occur from 10 years old in girls and goes up to 14 years in boys. After this stage it continues slowly until peak bone mass (PBM) is achieved. In fact, there is growing evidence to support that several interventions directed to optimize PBM before P4 Tanner’s stage represent an opportunity window to prevent future Osteoporosis. DXA is recognized as the gold standard technique to...
define the mineralization rate in the whole skeleton as well as in definite anatomical regions and their results are referred as bone mineral density (BMD). Our aim is to define the behavior of bone mass during infancy and if there is any association to PBM acquisition. Materials and methods We included 982 boys, 983 girls aged 6 to 12 years. BMD was measured in non dominant forearm. BMD milligrams/sq.centimeter was determined using a Lunar PIXI, DXA instrument. Results in table and graphic Conclusions Our data clearly show that BMD are different during bone growth and Bone mass development. BMD accumulation is clearly different, it starts slowly after 8 years in girls with a clear acceleration at 10 years, and in boys both phases of BMD accumulation start one year later. At age 6 BMD is significantly higher in boys than in girls, but particularly after 10 years old a rapid growth in BMD that gets to a maximum speed or percent annual rate of 4.5% is observed in boys. In girls this BDM sprout starts slowly at the age of 8 years, speeds up at 9 and by the age of 12 it has surpassed the BMD accumulation rate of boys reaching a 7.5% per year. Optimization of Peak Bone Mass requires nutritional and/or physical activity interventions, the optimal age window for these interventions have been found to be between the 8th and 14th years of age for both sexes.

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Female</th>
<th>Male</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>0.293</td>
<td>0.313</td>
<td>-0.019</td>
</tr>
<tr>
<td>7</td>
<td>0.295</td>
<td>0.311</td>
<td>-0.017</td>
</tr>
<tr>
<td>8</td>
<td>0.296</td>
<td>0.310</td>
<td>-0.014</td>
</tr>
<tr>
<td>9</td>
<td>0.298</td>
<td>0.310</td>
<td>-0.012</td>
</tr>
<tr>
<td>10</td>
<td>0.305</td>
<td>0.313</td>
<td>-0.009</td>
</tr>
<tr>
<td>11</td>
<td>0.318</td>
<td>0.321</td>
<td>-0.003</td>
</tr>
<tr>
<td>12</td>
<td>0.342</td>
<td>0.335</td>
<td>-0.006</td>
</tr>
</tbody>
</table>

Title: Increased reflux episodes in overweight and obese children: Preliminary report

Dante Bacarreza Nogales 1, Sergio Diaz Madero 1, Ericka Montijo Barrios 1, Margarita Garcia Campos 1, Roberto Cervantes Bustamante 1, Jaime Ramírez Mayans 1
1) Instituto Nacional de Pediatría, Mexico City, Mexico

Summary:
Gastroesophageal reflux (GER) occurs in approximately 7% of children and adolescents. Obesity is a known risk factor for GER. However, 24-hour pH monitoring for GER in obese children and adolescents has not been reported. Aim: To report the frequency of pathological GER (GERD) in overweight and obese children and adolescents. Methods: Prospective, descriptive study in which overweight and obese children and adolescents were recruited for 24-hour pH monitoring. Otherwise healthy patients with a body mass index (BMI) z score > 1 whose parents agreed to participate were included. Informed consent was obtained. Age, gender, height and weight, as well as GER symptoms were recorded. A 24-hour pH monitoring was performed in all patients (Digitrapper pH 400). Pathological GER (GERD) was considered when Boyle’s criteria were fulfilled. Descriptive statistical analysis was done. Results: 25 patients completed study. 10 female (40%); mean age was 10.9 years (5.8-17.8). Mean BMI z score was 2.11 (1.38-2.82). We found a frequency of GERD of 28% (7/25) according to Boyle’s criteria. 16/25 (64%) had an increased number of GER episodes (> 1.5 GER episodes per hour). This finding was the only abnormality seen in 10 of the patients (40%), with a mean of 8.24 episodes per hour (1.7-27.9). Conclusion: Obese children and adolescents present an increased frequency of GER episodes and an increased frequency of GERD compared to the general population.

Title: NEW HYPOTONIC ORAL REHYDRATION SOLUTION CONTAINING ZINC AND PREBIOTICS FOR THE MANAGEMENT OF CHILDREN WITH ACUTE GASTROENTERITIS

Annalisa Passariello 1, Gianluca Terrin 1, Serena Ruotolo 1, Giulio De Marco 1, Gaetano Cecere 1, Roberto Berni Canani 1
1) Department of Pediatrics, University of Naples Federico II, Naples, Italy

Summary:
Oral rehydration solution (ORS) is the first-line therapy for the management of children with acute gastroenteritis. ORS however reduces neither the severity nor the duration of diarrhea. Hypotonic osmolarity solutions and “super-ORS” containing zinc or prebiotics have been proposed but clinical data in industrialized countries are still scanty. Objective. We comparatively evaluated the therapeutic efficacy of a new hypotonic ORS contain-
Gastric emptying of a solid meal evaluation in patients with erosive esophagitis

Aim. To evaluate the gastric emptying of a solid meal (GE) with 13C-octanoic breath test in patients with erosive peptic esophagitis. Methods. 17 patients (5F/12M, median age 11.92 yrs, range 8.79 to 17.9) with erosive esophagitis and 14 healthy controls (4F/10M, median age 13.56 yrs, range 8.04 to 18.7) were compared. Esophagitis was graded according to Los Angeles classification [9 (52.9%) patients with grade A esophagitis and 8 (47.1%) patients with grade B]. H. pylori status was determined by gastric antrum histological evaluation (according to updated Sydney System) in the patients and by 13C-urea breath test in the controls. Results. During an observational period of 24 months 78 newborns were enrolled: 7 received diagnosis of NEC (male 4; birth weight 913±248 g; gestational age 27.8±1.8 wks; postnatal age 13.9±0.7 d). The mean serum Clp concentrations resulted higher in patients with NEC (3.98±0.69 mcg/ml) compared to healthy controls (0.70±0.37 mcg/ml) (p<0.0001). Conclusions. Determination of serum Clp concentration could be considered an additional diagnostic marker for identification of NEC.

SERUM CALPROTECTIN AS NEW DIAGNOSTIC MARKER OF NECROTIZING ENTEROCOLITIS

Background. Necrotizing enterocolitis (NEC) is a major cause of morbidity and mortality in very low birth weight (VLBW) neonates. Although NEC onset is often inconspicuous, with minimal, subtle and non-specific signs, the clinical course may be fulminating. Thus, a prompt diagnosis to initiate an appropriate therapy is crucial. Fecal calprotectin has been proposed for diagnosis of NEC, however a wide overlapping between normal and pathological data in neonatal age limit their diagnostic use. Aim. To investigate whether serum Clp determination could be useful for the diagnosis of NEC. Methods. Prospective, multicenter study involving VLBW newborns with a gestational age <32 weeks. Serum Clp was measured in subjects presenting clinical and radiological diagnostic criteria for NEC (Bell stage >II), while healthy newborns served as controls. Serum Clp values was determined by an ELISA technique (Calprests®, Trieste, Italy) at similar postnatal age for subjects with NEC and controls. Results. During an observational period of 24 months 78 newborns were enrolled: 7 received diagnosis of NEC (male 4; birth weight 913±248 g; gestational age 27.8±1.8 wks; postnatal age 13.9±0.7 d). The mean serum Clp concentrations resulted higher in patients with NEC (3.98±0.69 mcg/ml) compared to healthy controls (0.70±0.37 mcg/ml) (p<0.0001). Conclusions. Determination of serum Clp concentration could be considered an additional diagnostic marker for NEC.
**Title:** Is there any relationship between symptoms of patients with erosive esophagitis and gastric emptying?

Rodrigo S Machado 1, Érica Yamamoto 1, Marialice Reber 1, Elisabete Kawakami 1
1) Pediatric Gastroenterology Division of the Department of Pediatrics, UNIFESP/EPM, São Paulo, Brasil

**Summary:**
Aim. To correlate gastric emptying and the symptoms of erosive esophagitis. Methods. 17 patients (5F/12M, median age 11.92 yrs, range 8.79 to 17.9) with erosive esophagitis were included. Symptoms were evaluated with a structured questionnaire. The questionnaire included symptoms related to gastroesophageal reflux, dyspepsia and irritable bowel syndrome. The pain intensity was scored in a 10-point visual scale and the symptom frequency was scored through Likert scale. Gastric emptying was evaluated by 13C-octanoic breath test, which was performed after standardized test meal (2 slices of toasted bread, 10g margarine and 1 egg with 100 ul of the tracer dipped in the yolk) with 13 points of air collection in four hours. Results. Epigastric pain was reported by 10 patients (58.8%), with median severity 6 (IQ range 3.25 – 8.25), heartburn by 8/17 (47.1%), thoracic pain 7/17 (41.2%), nocturnal pain 6/17 (35.3%), and abdominal pain (other than epigastric) by 9/17 (52.9%). There was no relationship between gastric emptying parameters (half time, lag phase and gastric emptying coefficient) and presence of epigastric pain, its frequency, duration or severity. There was no relationship between gastric emptying and the presence and frequency of the aforementioned symptoms. Pain-related social activity avoidance (7/17, 41.2%) was associated with lower gastric emptying coefficient (median 2.8 min IQ range 2.72 – 3 vs. 3.42 min IQ range 3.07 – 3.62, P = 0.028). There was an inverse relationship between the frequency of pain-related stool consistency change and gastric emptying coefficient (Spearman’s correlation coefficient -0.523, P = 0.03) and between this coefficient and stool frequency (Spearman’s correlation coefficient -0.537, P = 0.026). Conclusion. There is no relationship between presence of symptoms and gastric emptying parameters in patients with erosive esophagitis. However, the gastric emptying was slower in patients with more severe pain, defined by social activity avoidance.

**Title:** Open access upper digestive endoscopy did not affect the yield of digestive endoscopy

Rodrigo S Machado 1, Airton Viriato 1
1) Hospital Infantil Cândido Fontoura, São Paulo, Brasil

**Summary:**
Aim. To evaluate the outcomes of patients undergoing upper digestive endoscopy according to the specialty of their assistant doctor. Methods. All records of upper digestive endoscopies performed in a 56-month period in two open access outpatient facilities of endoscopies were reviewed. Eligible subjects were younger than 20-years and evaluating vomiting, heartburn or abdominal pain. 1038 subjects were evaluated (400M/638F, mean age 9.8 yrs ± 4.75). Independent variables were age, sex, specialty of the assistant doctor and rapid urease test (RUT). The database contains data on demography, indication of the endoscopy, assistant doctor and results. Four outcomes were analysed: any abnormality, erosive disease, esophagitis and erosive disease in stomach or duodenum. Results. The most prevalent indication was epigastric pain (57.3%), followed by abdominal pain in other location (25.4%), vomiting (10.3%) and heartburn (6.9%). Urease test was performed in 932 patients (85.1%), 228 (24.5%) of them were positive. The endoscopy was required by a general pediatrician in 155 patients (14.9%). There was 334 (32.2%) endoscopies with any abnormality - age (P < 0.001), reference by pediatrician (P = 0.024), and positive urease test (P < 0.001) were significantly associated with this outcome in univariate analysis. Erosive disease was found in 94 (9.1%) patients - age (P = 0.002), male sex (P = 0.002) and positive RUT (P = 0.002) were significantly associated with this result in univariate analysis. Esophagitis was more frequent in older patients (P = 0.01) and male sex (P < 0.001). The only variable associated with gastric or duodenal erosive was positive RUT (P < 0.001). Conclusion. There was no difference between patients referred by pediatricians or pediatric gastroenterologists regarding frequency of erosive diseases, but there was higher yield of any abnormality in patients referred by pediatricians.

**Title:** COLORECTAL CANCER IN CHILDREN AND ADOLESCENTS

ROMAN BIGLIARDI 1, JUAN FASANO 1, DAVID VERON 1, MARIA RICCHERI 1, RICARDO REYNOSO 1, AMANDA VARELA 1
1) HOSPITAL POSADAS, EL PALOMAR, ARGENTINA

**Summary:**
**Aim:** 1- To describe the most frequent forms of colorectal cancer (CRC) in children and adolescents who were treated at our hospital. 2- To find out...
the presence of any possible predisposing diseases for this pathology. MATERIALS AND METHODS: We studied those patients with colorectal cancer that we treated between January 2001 and December 2007. RESULTS: N: 7. Age: 11 to 17 years. Mean age: 14.4 years. Gender: F: 3 M: 4 Clinical presentation: Abdominal pain: 7 Right lower quadrant pain: 3. (An appendicectomy was carried out and later on patients were operated on for an intestinal occlusion). Abdominal tumor: 2. Rectal bleeding: 2. Weight loss: 3. Mean duration of symptoms: 8 weeks (range 1-15 weeks). None of our patients were shown to have predisposing diseases such as ulcerative colitis or familial adenomatous polyposis. In a patient, polyposis was diagnosed, without any other family cases. Diagnosis: Adenocarcinoma: 6. Lymphoma: 1. Mucinous adenocarcinoma was the predominant histological variety. In four children, the primary tumour was in the right colon. All of the patients, except one of them were administered chemotherapy and one was administered radiotherapy. Evolution: Disease free at 5 years: 1. Dead of the progressive illness: 3. Still under control or under treatment: 3. Brain Metastasis: 1. CONCLUSIONS: 1-The most frequent form of presentation was abdominal pain and two patients had rectal bleeding. 2- CRC should be considered in the differential diagnosis in pediatric patients with acute abdominal pain, an abdominal tumor, or lower gastrointestinal bleeding. 3- None of our patients had predisposing diseases.

P0476

Title:
PROGNOSTIC FACTORS FOR INTESTINAL FUNCTION ABNORMALITIES IN 135 PATIENTS WITH MYELOMENINGOCELE

ROMAN BIGLIARDI 1, ANDRES DITARANTO 1, JORGE VIDAL 1, RICARDO REYNOSO 1, INES VILTRE 1, AMANDA VARELA 1
1) HOSPITAL POSADAS, EL PALOMAR, ARGENTINA

Summary:
AIMS: 1-To determine the defecatory habits of patients with myelomeningocele (MMC) who are older or younger than 4 years old according to the medullary lesion level. 2- To define the factors that affect bowel evacuation in our patients. PATIENT AND METHODS: A descriptive study of a prospective cohort that was carried out by a multidisciplinary team at a public hospital, from March 2003 to December 2007. N: 135. Female: 47%. Age: 1 month to 26 yrs. Median age: 6.22 yrs. GI: 55 pts <4 yrs. GII: 80 pts >4 yrs. Medullar level: 33% thoracic (T); 11% high lumbar (HL); 28% middle lumbar (ML); 20% low lumbar (LL); 8% sacral (S). Ventriculoperitoneal shunt (VPS): 77%. Urinary Catheterization: 74%. Statistical analysis: Fisher’s exact test (P <0.05 was considered significant). RESULTS: In <4 y.o pts: 80% normal defecation; 20% constipation. In >4 yrs pts: 16% normal defecation; 8% constipation; 76% incontinence. TABLE Walkers without aid: incontinence 14.8% and constipation 50%. Wheelchair bound pts: incontinence 59% and constipation 17% (p=0.02) Normal school: incontinence 70%. Special school: incontinence 96% (p=0.13). VPS pts >4yrs: incontinence 84% and constipation 3%. Non VPS: incontinence 53% and constipation 21% (p=0.07). In <4 yrs pts: with urinary catheterization: incontinence 81% and constipation 8%. Without urinary catheterization: incontinence 59% and constipation 6% (p=0.05). In <4 yrs, there was no significant difference with or without urinary catheterization. CONCLUSIONS: 1- The bowel evacuation abnormalities are more frequent after the age of sphincteric control. 2- In <4 yrs patients, constipation was not related to the level of medullary lesion, while in >4 yrs patients, the defecatory trouble was directly proportional to the lesion level. 3- Pts >4 yrs with a VPS, with urinary catheterization, and wheelchair bound pts experienced a constipation and incontinence degree that was significantly higher. 4- Whether the child attended a normal or special school was not decisive for predicting an alteration in their bowel evacuation.

Medullary level <4 years > 4 years

| T and HL 30% constipation 85% incontinence 2.5% constipation | ML, LL, S 14% constipation 67% incontinence 15% constipation |
| Fisher’s exact test p=0.18 p=0.01 |

P0477

Title:
STUDY AND FOLLOW UP OF CHILDREN AND ADOLESCENTS WITH SURGICALLY REPAIRED ANORECTAL MALFORMATIONS

ROMAN BIGLIARDI 1, ANDRES DITARANTO 1, RICARDO REYNOSO 1, JORGE VIDAL 1, JUAN FASANO 1, AMANDA VARELA 1
1) HOSPITAL POSADAS, EL PALOMAR, ARGENTINA

Summary:
AIM: 1) To evaluate of our population’s anorectal functionality late after surgery. 2) to study the response to diet, toilet training, and/or biofeedback. MATERIAL AND METHODS: N=14. Female: 5. Age: 6 to 16 years. Mean age: 8.14 years Experimental study without a control group. Inclusion criteria: children over 6 years of age with anorectal malformation operated using Peña’s technique (postsagittal anorectoplasty). Exclusion criteria: patients with neurological disorders that do not non-compliant with study and treatment indications. We performed: clinical history; pursuit schedules
was 3.77 ± 0.67. The time evolution was 2.33 ± 0.71 months. Clinical gastroesophageal reflux was shown in 21 patients (40.38%), 15 patients (28%) with dysphonia were studied (33 boys and 22 girls). The average age was 5.91 ± 3.83 years. The average number of episodes of dysphonia per year was 14.3 (poor). With biofeedback, improvement was quantified by the same score, with average values of 11 and mean delta score of 4.3 (satisfactory). Total continence was achieved in 6/11; partial continence in 2/11; and lack of improvement in 3/11. CONCLUSIONS: 1 - After 6 or more years following their first surgical procedure, all of our patients with anorectal malformations exhibited fecal incontinence. 2 - Combined dietary, toilet training and biofeedback therapy was effective for achievement of fecal continence in our population.

P0478

Title:
COMPARATIVE STUDY OF BONE MINERAL DENSITY (BMD) IN CHILDREN AND ADULTS WITH CYSTIC FIBROSIS

DIANA MADRUGA 1, ROSA ANA MUÑOZ CODOCEO 1, ROSA GIRON 2, MJOSE MARTINEZ 1, DOLORES ACUÑA 2, DOLORES GARCIA NOVO 1
1) HOSPITAL UNIVERSITARIO NIÑO JESUS, MADRID, SPAIN 2) HOSPITAL UNIVERSITARIO LA PRINCESA, MADRID, SPAIN

Summary:
Introduction. In the last years, the increased survival rate of patients with cystic fibrosis (CF) has been followed by the presence of some adult pathology, like osteoporosis. Objective. To assess bone mineralization density (BMD) through the double photon radiological densitometry (DPRD), in the infancy and adult years in patients with CF. To study clinical parameters that may be related to such BMD deficiency. Patients and Methods. 71 patients with CF were studied, being divided into two groups according to their age. In group A, patients were up to 18 years old (26 males and 11 females, with an average age of 11.3 ± 2.88 years). In group B patients were 18 years old, or older (18 males and 16 females, with and average age of 22.94 ± 6.07 years). In group A, patients were CF diagnosed for 9.7 ± 3.26 years, in average, while in group B patients were CF diagnosed for 12.76 ± 7.24 years, in average. To all these patients a lumbar BMD was performed and a Z score assigned. The BMD results were correlated with patient age, sex, CF evolution time, CF genotype, pancreatic insufficiency presence, liver disease, Shwachman and Brasfield scores, lung functional tests, and with nutritional status. Nutritional status was assessed through a three days dietetic inquiry and by caloric intake, taking into account patient body mass index (BMI), midarm circumference, skinfold thickness (data were expressed as a percentage). Results. The BMD average value for all patients (group A plus group B) was 0.869 ± 0.155 g hydroxyapatite/cm², inside the normal range, but below the reference average value. For the total of patients, the average of BMD expressed as Z score was -0.72 ± 1.05 g/cm², being group A: -0.66 ± 1.12 g/cm² and group B: -0.796 ± 1 g/cm² respectively. 35% of Group A patients and 54.5% of Group B showed BMD alterations. In both groups evolution time, hepatic disease, Shwachman and Brasfield scores, BMI and midarm circumference were correlated with BMD. Only lung function (FEV1, p<0.05) showed a significant correlation with both groups. Conclusions. We suggest that BMD determinations should be included as one of the complementary studies in CF patients, due to the high rate of low BMD occurrence in such patients and because its importance for the patient quality of life and for lung transplant possibilities. In adolescent patients, the main implied parameters are nutritional ones, besides their age and lung affection.

P0479

Title:
STUDY OF GASTROESOPHAGEAL REFLUX DISEASE IN PEDIATRIC PATIENTS WITH DYSPHONIA

MJOSE MARTINEZ GOMEZ 1, ROSA ANA MUÑOZ CODOCEO 1, DIANA MADRUGA 1, ELENA AGÜERO 1, ANA B. MARTINEZ 1, ALBERTO GARCIA 1
1) HOSPITAL NIÑO JESUS, MADRID, SPAIN

Summary:
Introduction With the exception of congenital anomalies, the aetiology of dysphonia in children is often unknown. Disturbances in the vibratory characteristic of the vocal folds cause dysphonia. The most common causes for dysphonia are infectious, anatomic, congenital, inflammatory, neoplastic, neurologic, or iatrogenic in nature. Fine points during the history may provide the clinician with clues as to the correct etiologic category. Hoarseness is not generally appreciated to be a manifestation of pediatric gastroesophageal reflux (GRD). Objective. To evaluate the association between gastroesophageal reflux disease (GRD) and dysphonia in children. Patients and Methods. We did a retrospective study in patients younger than 18 years with dysphonia as referred by the otorhinolaryngology (ORL) service. We performed 24 hour pH monitoring using two sensors located in the esophagus. It was considered a standard gastroesophageal reflux (GR) index to be <5, a slight GR index to be in the 5-10 range, a moderate GR index in the 10-15 range and a serious GR index being > 15. We also determined long GR (> 15 min) and GR reflux indexes. Results. 52 children with dysphonia were studied (33 boys and 22 girls). The average age was 5.91 ± 3.83 years. The average number of episodes of dysphonia per year was 3.77 ± 0.67. The time evolution was 2.33 ± 0.71 months. Clinical gastroesophageal reflux was shown in 21 patients (40.38%), 15 patients (28%)
have a personal history of GR, and 7 patients (13%) have GR or dysphonia family history. We found GRD in the proximal esophagus in 19 patients (36.5%), in 11 patients GRD was mild, in 2 GRD was moderate and in 6 patients GRD was severe. In 7 patients the reflux prevailed in decubitus, and 12 children had long reflux (> 15 minutes) while in decubitus. GRD in the distal esophagus was present in 17 patients (32.6%); it was mild in 2 of them, moderate in 5, and severe in 10. In 83.3% of the children GRD occurred while they were standing up. Long reflux was present in 14 children (26.9%). No significant correlation was found between dysphonia evolution time and GR index. Only 6 children did not show GRD in the proximal and distal esophagus. Conclusions. A relationship between GRD and dysphonia in children has been detected. The treatment of GRD may thus improve patient reflux and laryngeal symptoms.

P0480

Title: CHARACTERIZATION OF TWO GLYCOLITIC ENZYMES FROM Giardia lamblia AS TARGET FOR DRUG DESIGN

Montijo-Barrios Ericka 1, Cervantes-Bustamante Roberto 1, Ramírez-Mayans Jaime 1, Figueroa-Salazar Rosalía 1, Reyes-Vivas Horacio 1, López-Velázquez Gabriel 1
1) Instituto Nacional de Pediatría, Mexico, México

Summary: The most common non-bacterial diarrhea in human is caused by the parasite Giardia lamblia. The incidence of giardiasis worldwide may be as high as 1000 million cases. The drug of choice for treating the giardiasis is metronidazole, a 5-nitroimidazole derivative. Although metronidazole is effective, it exerts strong side effects in the host, and there is evidence that strains resistant to metronidazole are existent. This underlines the need for developing drugs that are effective against giardiasis. In this regard, it is noted that G. lamblia lacks oxidative phosphorylation because it possesses mitosomes instead of mitochondria. Thus, in G. lamblia, the main source of ATP is the glycolytic pathway suggesting that the enzymes of the glycolysis can be potential targets for drug design. Fructose-1,6-bisphosphate aldolase (FBPA) and triosephopsphate isomerase (TIM) are two glycolytic enzymes representing key steps on this pathway. FBPA catalyzes the reversible cleavage of D-fructose-1,6-bisphosphate producing R-glyceraldehyde 3-phosphate (GAP) and dihydroxyacetone phosphate (DHAP). TIM catalyzes the reversible isomerization between GAP and DHAP. We characterized the recombinant FBPA and TIM of G. lamblia and used several compounds trying to inactivate both. The effect of these compounds over the enzyme activity, and cell viability were tested. Results showed a species specific effect over TIM of cysteine-reactive compounds though FBPA was not affected. The cysteine at position 222 of TIM is the main target of these compounds. One of these compounds had citotoxic effect on trophozoites of G. lamblia, through inactivation of TIM and low effect on human cells.

P0481

Title: Anorectal manometry findings in children with chronic intestinal constipation

Rosane C Gomes 1, Lauro V Sena 1, Jales Clemente 1, Hélcio S Maranhão 1
1) Federal University of Rio Grande do Norte, Natal, Brazil

Summary: Introduction: anorectal manometry (AM), used to assess children with chronic intestinal constipation (CIC), was recently introduced into the gastroenterology ambulatory facility of the Pediatric Hospital of UFRN (Hosped-UFRN). Aims: analyze AM findings in children with CIC treated at Hosped-UFRN. Methods: between March 2006 and March 2008, 51 children with CIC were submitted to AM. We used a monograph, a solid state device (Sigma Instruments, version 2.0). The following were analyzed: the length and site of greatest pressure in the anal canal, anal pressure at rest, the presence of rectal-sphincter reflex and conscious rectal sensitivity threshold. Rectal-anal inhibitory reflex (RAIR) was considered with a pressure relaxation of at least 5 mmHg. Conscious sensitivity was obtained in children older than 4 years of age and cooperative. Results: 66.7% were boys, 54.9% resided in the state capital (Natal), mean age at examination was 84.7 ± 37.7 months and the median of symptoms onset was 19 months. The smallest functional anal canal was from 1 to 2cm and the largest from 1 to 5cm from the anal margin. The region of greatest pressure at rest was at 1cm in 47% of the cases (mean pressure = 70.1 ± 33.5 mmHg) and at 2cm in 33% (mean pressure = 76.5 ± 23.9 mmHg). Mean maximum anal pressure at rest was 72.8 ± 29 mmHg. RAIR was present in 94.2% (48) of the AM, absent in 1.9% (1) and inconclusive in 3.9% (2). These last were sent for rectal biopsy. Conscious sensitivity was observed from 40mL to 220mL of air. The mean volume to attain sensitivity was 154.0 ± 53.4 mmHg. In 5 of the children studied, sensitivity was not reported within the volumes tested. Conclusions: AM helped in diagnosing CIC in children, reducing other procedures, such as radiology and histopathology, ensuring the functional etiology of constipation in the vast majority of cases.

P0482

Title: Infection of the urinary tract and chronic intestinal constipation in children: a real association
Rosane C Gomes 1, Jales Clemente 1, Lauro V Sena 1, Mauro B Morais 2, Hélcio S Maranhão 1
1) Federal University of Rio Grande do Norte, Natal, Brazil 2) Federal University of São Paulo, São Paulo, Brazil

Summary:
Introduction: there is evidence of greater frequency of urinary symptoms in children with chronic functional intestinal constipation (CFIC). However, the occurrence of urinary tract infection (UTI) needs more confirmation. Aims: investigate the occurrence of UTI in children with CFIC at the first medical visit in a specialized ambulatory facility. Methods: a case-control study was conducted involving 112 children with CFIC (constipated) and 110 without CFIC (controls) at the ambulatory facility of the Hospital of Pediatrics of Federal University of Rio Grande do Norte, Brazil. CFIC was considered as the elimination, with pain or difficulty, of hardened and/or dried feces associated or not to a frequency of fewer than 3 times per week, for at least 30 days and without underlying organic cause. The urine culture, performed on all the children of both groups, using a midstream sample, was considered positive with the presence of 100,000 colonies/mL. Results: 56.6% of the constipated children were boys. The mean ages at the initial consultation and at onset of symptoms were 65.5 ± 32.4 months and 31.3 ± 27.6 months, respectively. The most frequently found clinical manifestations were: rectal impaction (80.6%), soiling (62.5%), abdominal pain (69.4%), blood in feces (53.1%), abdominal fecal mass (23.9%), anal fissure (9.3%) and abdominal distension (4.4%). Urinary symptoms were present in 43.4% of the constipated children and in 13.6% of the controls (p < 0.01). UTI was found in 7.1% of the constipated subjects and in 0.9% of the controls (p = 0.035). Conclusions: UTI must be considered an important infirmity associated to CFIC in childhood, making its investigation imperative under this condition.

P0483

Title: NON-INVASIVE ASSESSMENT OF MUCOSAL RECOVERY IN CHILDREN FOLLOWING DIARRHOEAL DISEASE
Ross N Butler 1, Cuong Tran 1, Joanna Hawkes 1, Erin Symonds 1, Betty Zacharakis 1, Geoffrey Davidson 1
1) Women’s and Children’s Hospital, Adelaide, Australia

Summary:
Objective: Residual damage to the small intestinal mucosa after diarrhoeal disease affects the absorptive capacity of this organ. The impact of this on growth and gut maturation in children of both the developed and developing world is not known, however stunting in the developing world population has been attributed to the frequency of diarrhoeal disease. The objective of this study was to assess the absorptive capacity of the small intestine in children with diarrhoea using the 13C-sucrose breath test (SBT). Methods: The subjects were children (6mo-12y; n=50) who presented to the WCH with diarrhoea. All were treated with oral rehydration therapy (ORT) for a minimum of 5 days following admission. The SBT was performed prior to commencement of ORT (n=45) and at day 5 (n=36) according to the manufacturer’s instructions (Nidor Pty Ltd, Australia), with the % cumulative expired 13CO2 at 90 min (%CD90) indicative of small intestinal function (%CD90 < 4.4 = small intestinal villous damage). Results: There was an improvement in small intestine function between the day of admission and day 5, identified by an improvement in SBT (%CD90 median (5th-95th percentile); 1.57 (0.22-6.80) vs 4.33 (0.33-10.36); P<0.001, Mann-Whitney Rank Sum Test). Even though diarrhoea had resolved in 44/50 (88%) of children by day 5, 19/36 (53%) had evidence of a diminished absorptive capacity persisting at that time. Conversely, in 6/45 (13%) of the children tested on the day of admission, the SBT indicated normal small intestine function despite the presence of diarrhoea, suggesting that the large intestine or another mechanism was involved. Standard microbiology testing failed to identify a pathogen in 19/47 (40%) of stool samples tested. Conclusion: Resolution of small intestinal damage can be prolonged in a proportion of children with diarrhoea. The SBT identifies this and can be used to follow the persistence of damage post-infection. It can also identify involvement of the small intestine in the absence of a known pathogen. The SBT provides a non-invasive, easy to use biomarker of small intestine absorptive capacity which may be of great value in settings where there is a high burden of enteric infection and subsequent stunting.

P0484

Title: A Modern Approach to the Diagnosis of Pediatric Gastroesophageal Reflux: Diagnostic Accuracy of Multichannel Intraluminal Impedance
Ruggiero Francavilla 1, Annamaria Maglià 1, Nunzia Bucci 1, Antonietta Villirillo 2, Giuseppe Boscarelli 1, Gilda Leone 1, Stefania Fico 1, Fulvio Moramarco 2, Luciano Cavallo 1
1) Departmento of Biomedicina Età Evolutiva - University of Bari, Bari, Italy 2) Departmento of Pediatrics PO Perrino, Brindisi, Italy

Summary:
Objective: Multichannel intraluminal impedance (MII-pH) has been recently introduced as a pH-independent method of assessing gastroesophageal reflux. Aim of the study was to evaluate the diagnostic accuracy of MII-pH as compared to conventional pH-monitoring in detecting reflux events.
and symptoms association and to assess the performance of the test in different age groups. Methods: A prospective direct comparison of two diagnostic techniques in a setting of an academic tertiary care center in Southern Italy. 291 consecutive patients referred for suspected gastroesophageal reflux disease. Sensitivity and diagnostic accuracy of MII-pH versus pH-monitoring for the diagnosis of reflux events, and symptom association. Results: The MII-pH detected 13631 RE of which 6260 (46%) were non-acid. The prevalence of weakly acid refluxes in the 24-hrs and in the post-prandial period and the proximal extension of refluxate were significantly superior in infants (p<0,001; p<0,001 and p<0,01 respectively). The sensitivity of MII-pH in detecting all refluxes was significantly superior than pH-monitoring irrespectively to age (p<0,001). Moreover, the sensitivity of MII-pH was higher in infants as compared to children. A total of 2607 symptoms were analyzed. MII-pH was found significantly superior in revealing an association between atypical symptoms and refluxes irrespectively to age. Limitations: MII-pH allows the diagnosis of non-acid reflux, however at present no effective therapies are available for reducing the number of refluxes especially in children; moreover the test is more expensive than standard pH-monitoring. Conclusions: combined MII-pH performs better than pH-monitor alone in the assessment of gastroesophageal reflux, as detected by an higher sensitivity in revealing refluxes and an higher rate of association between refluxate and symptoms, particularly in infants and in subjects with atypical symptoms.

P0485

Title: Association Between Apparent Life Threatening Events and Gastroesophageal Reflux Detected by Multichannel Intraluminal Impedance

Ruggiero Francavilla 1, Annamaria Magistà 1, Nunzia Bucci 1, Domenica Rizzi 1, Paolo Logrillo 1, Luciano Cavallo 1, Luigia Brunetti 1
1) Departmento of Biomedicina Età Evolutiva - University of Bari, Bari, Italy

Summary:
Objective Apparent life threatening events (ALTEs) have been reported as suprasophageal complications of gastroesophageal reflux (GER). The aim of this study was to investigate whether there is a temporal association between cardiorespiratory (CR) events suggestive of ALTEs and RE, using combined pH/MII monitoring. Methods: All consecutive infants referred to our Department for ALTEs, and negative to the appropriate investigations for this condition were enrolled. All infants (suspected of GER-disease) undergoing MII-pH monitoring for a different indication than ALTEs were used as non-ALTE group. Infants with ALTEs were investigated simultaneously with 6-hour MII-pH monitoring (z-lab, Sandhill Scientific) and polysomnography (ALICE II polygraph). A temporal association between CR events and RE was defined if both commenced within 30 seconds of each other. We studied, for each CR event, the Symptom Index (SI), the Symptoms Sensitivity Index (SSI) and the Symptoms Association Probability (SAP). Finally the 24-hours pH/MII combined recording of ALTEs and non-ALTE infants were compared. Results: 15 patients with clinical history of ALTE [6 M; median age 2,6 months (1,3 - 6,7 mo)] and 15 patients with suspected GER disease [17 M; median age 6,3 months (1,6 - 8,9 mo)] were enrolled. Out of the total 15 infants without ALTEs, 3 presented typical symptoms (vomiting and regurgitation), 11 (73%) presented atypical symptoms (cough) and 1 presented both typical and atypical symptoms. Overall, out of 336 CR events, we could detect an association with GER in 20 (6%) with no difference as acid or non acid GER, duration or height of refluxes. SI was positive in 5 (33%), SSI in 6 (40%) and SAP in 2 (13%) infants. Infants with ALTE as compared to non ALTEs, have a significantly higher number of RE (104 vs. 71; p<0,02), non-acid RE (74 vs. 35; p<0,007) and a longer non acid GER (1596” vs. 526”; p<0,01). Conclusion: Our data show that infants with ALTEs and non acid refluxes as compared to non ALTE infants and that in our experience GER may be implicated in the pathogenesis of ALTE in 2 (13%) cases (95%IC: 7-26%).

P0486

Title: Benefical Therapeutic Effect of Lactobacillus GG in children with abdominal pain: a double-blind placebo-controlled control trial

Ruggiero Francavilla 1, Annamaria Magistà 1, Vito L Miniello 1, Elena Lionetti 1, Angela De Canio 1, Stefania Castellaneta 1, Nunzia Bucci 1, Francesca Gigliardi 2, Lorenzo Polimeno 2, Luciano Cavallo 1
1) Departmento of Biomedicina Età Evolutiva - University of Bari, Bari, Italy 2) Departmento of Emergency and Organ Transplantation, Bari, Italy

Summary:
OBJECTIVE: Functional abdominal pain (FAP) is a common in school-aged children and no reliable treatment is still available. The aim of the present study is to determine if oral administration of Lactobacillus GG would improve frequency (F) and severity (S) of symptoms in children with FAP. METHODS: A total of 110 children [70F (64%); 6,4 yrs ± 2,1yrs] who fulfilled the Rome III criteria (chronic functional AP) or irritable bowel syndrome (IBS) were enrolled in a double-blind, randomized controlled trial in which they received LGG (n = 50), or placebo (n = 60) for 8 weeks. F and S were monitored before (week 1-4), during (week 5-11), and after treatment (week 12-20), with Visual Analogue Scale and validated questionnaire. At entry and at the end of the trial on voluntary basis children underwent double sugar (lactulose and mannitol) intestinal permeability test according using pulsed amperometric detection (DIONEX DX 600) and result were expressed as ratio between the two sugars (La/Ma). RESULTS: Children receiving
Patients were randomized in two groups and underwent a 24-hrs combined MII-pH testing using for each group a different kind of Imp-pH catheter using two different Imp catheter configurations in order to study the prevalence of the ph-only RE and their clinical meaning. Methods: From April required for MII-RE identification (short segment RE). The aim of our study is to compare the MII-pH tracings by a pediatric and adult population. OBJECTIVE: Multichannel Intraluminal Impedance (MII) may miss a part of drops in pH<4 revealed by pH probe (pH-only reflux episodes (RE)). In 13C-Urea Breath Test. Results: Primary clarithromycin resistance was detected in 22 (25,6 %) children. The A2143G point mutation was detected in 17 (77,3%) patients and the A2142G in four (19%). In 1 child (4,8%) there was a double mutation (A2142C and A2142G). H. pylori eradication was assessed by real-time polymerase chain reaction on paraffin-embedded antral biopsies. H. pylori infection was assessed 8 weeks after therapy by 13C-Urea Breath Test. Results: Primary clarithromycin resistance was detected in 22 (25,6 %) children. The A2143G point mutation was detected in 17 (77,3%) patients and the A2142G in four (19%). In 1 child (4,8%) there was a double mutation (A2142C and A2142G). H. pylori eradication was assessed in 57 children carrying clarithromycin susceptible strains as compared to 15 children carrying clarithromycin resistant strains (89% vs 57%; p=0,002). The presence of A2143G mutation was associated with a lower cure rate compared with the rate in the absence of this mutation (50% vs 89%; p=0,002); whereas for the other mutation the eradication rate was similarly close to 80% in both mutated-type and wild-type strains. The sequential regimen achieved a higher cure rate than triple therapy in A2143G mutate strains (80% vs 0%; p=0,001). Conclusions: The prevalence rate of clarithromycin resistance in children, their in the success of eradication therapy, and the efficacy of sequential therapy as compared to standard triple therapy against clarithromycin resistant strains. Methods: All 85 H. pylori positive children consecutively diagnosed in our Center from January 2003 to July 2006 were enrolled. H. pylori infection was considered present if at least two out of three tests (histology, rapid urease test, 13C-Urea Breath Test) were positive. Patients received a clarithromycin-based 7-day triple therapy or a new 10-day sequential therapy comprising of omeprazole plus amoxicillin in 5 days followed by omeprazole plus clarithromycin and tinidazole for the next 5 days. Clarithromycin resistance was assessed by a modified clarithromycin minimum inhibitory concentration (MIC) test on paraffin-embedded biopsies and by the Etest on agar plates. H. pylori infection was assessed by histology, rapid urease test, and 13C-urea breath test. Results: Clarithromycin resistance was detected in 22 (25.4%) children. The A2143G mutation was detected in 17 (77.3%) patients and the A2142G in four (19%). In one child (4.8%) there was a double mutation (A2142C and A2142G). H. pylori eradication was assessed in 57 children carrying clarithromycin susceptible strains as compared to 15 children carrying clarithromycin resistant strains (89% vs 57%; p=0,002). The presence of A2143G mutation was associated with a lower cure rate compared with the rate in the absence of this mutation (50% vs 89%; p=0,002); whereas for the other mutation the eradication rate was similarly close to 80% in both mutated-type and wild-type strains. The sequential regimen achieved a higher cure rate than triple therapy in A2143G mutate strains (80% vs 0%; p=0,001). Conclusions: The prevalence rate of clarithromycin resistance is high in the pediatric age and A2143G is the most frequent point mutation that confers the higher risk of treatment failure. Clarithromycin resistance may be overcome by the sequential therapy.

P0487

Title: Clinical impact of Helicobacter pylori clarithromycin resistance on eradicating therapies in children: a cohort retrospective study

Ruggiero Francavilla 1, Elena Lionetti 2, Annamaria Magistà 1, Stefania Castellaneta 1, Angela De Canio 1, Nunzia Bucci 1, Domenico Piscitelli 3, Luciano Cavallo 1, Enzo Ierardi 4
1) Dipartimento di Biomedicina Età Evolutiva - University of Bari, Bari, Italy 2) Department of Pediatrics University of Catania, Catania, Italy 3) Department of Pathology, Università degli Studi di Bari, Bari, Italy 4) Department of Medical Science, Università degli Studi di Foggia, Foggia, Italy

Summary:
Objective: Three point mutations (A2143G, A2142G, and A2142C) have been involved in Helicobacter pylori (H. pylori) clarithromycin resistance. No study has assessed the distribution of the different mutations and their role on H. pylori treatment outcome in children. Recently, in adults the sequential therapy proved to be effective even in clarithromycin resistant strains. Aim of our study was to assess the prevalence and distribution of primary clarithromycin resistance in children, their in the success of eradication therapy, and the efficacy of sequential therapy as compared to standard triple therapy against clarithromycin resistant strains. Methods: All 85 H. pylori positive children consecutively diagnosed in our Center from January 2003 to July 2006 were enrolled. H. pylori infection was considered present if at least two out of three tests (histology, rapid urease test, 13C-Urea Breath Test) were positive. Patients received a clarithromycin-based 7-day triple therapy or a new 10-day sequential therapy comprising of omeprazole plus amoxicillin in 5 days followed by omeprazole plus clarithromycin and tinidazole for the next 5 days. Clarithromycin resistance was assessed by a modified clarithromycin minimum inhibitory concentration (MIC) test on paraffin-embedded biopsies and by the Etest on agar plates. H. pylori infection was assessed by histology, rapid urease test, and 13C-urea breath test. Results: Clarithromycin resistance was detected in 22 (25.6%) children. The A2143G mutation was detected in 17 (77.3%) patients and the A2142G in four (19%). In 1 child (4.8%) there was a double mutation (A2142C and A2142G). H. pylori eradication was assessed in 57 children carrying clarithromycin susceptible strains as compared to 15 children carrying clarithromycin resistant strains (89% vs 57%; p=0,002). The presence of A2143G mutation was associated with a lower cure rate compared with the rate in the absence of this mutation (50% vs 89%; p=0,002); whereas for the other mutation the eradication rate was similarly close to 80% in both mutated-type and wild-type strains. The sequential regimen achieved a higher cure rate than triple therapy in A2143G mutate strains (80% vs 0%; p=0,001). Conclusions: The prevalence rate of clarithromycin resistance is high in the pediatric age and A2143G is the most frequent point mutation that confers the higher risk of treatment failure. Clarithromycin resistance may be overcome by the sequential therapy.

P0488

Title: Impedance Catheter Configuration and Prevalence of pH-only Reflux Events

Annamaria Magistà 1, Ruggiero Francavilla 1, Nunzia Bucci 1, Antonietta Villirillo 2, Stefania Fico 1, Nunzio Ranaldo 3, Gilda Leone 1, Fulvio Moramarco 2, Luciano Cavallo 1
1) Dipartimento di Biomedicina Età Evolutiva - University of Bari, Bari, Italy 2) Department of Pediatrics PO Perrino, Brindisi, Italy 3) Department of Emergency and Organ Transplantation, Bari, Italy

Summary:
Objective: Multichannel Intraluminal Impedance (MII) may miss a part of drops in pH<4 revealed by pH probe (pH-only reflux episodes (RE)). In pediatric Imp catheter, the pH sensor is located in the middle of the most distal Imp channel (6th) as opposed to the 5th Imp channel (ImpC) of adult catheter, so, it is possible that some of the pediatric pH-only RE are refluxes restricted to the very distal esophagus not reaching the 5th ImpC required for MII-RE identification (short segment RE). The aim of our study is to compare the MII-pH tracings by a pediatric and adult population using two different Imp catheter configurations in order to study the prevalence of the pH-only RE and their clinical meaning. Methods: From April to June 2007, all consecutive patients with an height higher than 130 cm, referred to our Unit for suspected GERD were prospectively enrolled. Patients were randomized in two groups and underwent a 24-hrs combined MII-pH testing using for each group a different kind of Imp-pH catheter.
Objective: Previous papers have demonstrated an increase of IFN-α in untreated celiac mucosa, although the cellular source of this cytokine is not well known. The aim of this study was to assess, for the first time in children, the role of dendritic cells in the production of IFN-α in duodenal mucosa of untreated celiac patients. Materials: 15 untreated celiac children and 15 age and gender matched healthy controls were enrolled into the study. Peripheral DCs were enumerated by multi color flow cytometric analysis of whole blood. Plasmacytoid (PDC) and Myeloid type 1 and 2 (MDC1, MDC2) were detected by staining with anti-BDCA-2-FITC, anti-CD1c (Anti-BDCA-1)-PE and Anti-BDCA-3-APC, respectively. Number and distribution of tissue PDC and MDC1 and MDC2 were analyzed by confocal microscopic analysis of frozen duodenal biopsies, stained with purified mouse mAb anti-BDCA-4, anti-BDCA-1 and anti-BDCA-3, respectively, and detected by goat anti-mouse Alexa fluor 488-conjugated Ab. Considering that plasmacytoid DCs are the major source of INF-α, it was performed a double staining of the same biopsies for each BDCA marker and for IFN-α. The expression of IFN-α in tissue was measured by real-time PCR. Results: Blood DC enumeration showed that BDCA-2 was significantly reduced, in term of absolute number and percentage, in celiac children compared to healthy controls (10259±4812/ml vs. 9839±2340/ml, p<0,05; 0.133±0.072% vs. 0.164±0.058%, p<0,01) while no difference was detected as regard to short segment RE (0% both in the two groups). Conclusion: Ph-only RE are more frequent in pediatric as compared to adult patients, independently from Imp catheter. About a third of pediatric pH-only RE may be described as short segment RE not reaching the 5th ImpC and so missed by MII software Imp because of catheter configuration.

P0489

Title:
Plasmacytoid Dendritic Cell and Interferon alfa (IFN-α) production in children with Celiac Disease

Ruggiero Francavilla 1, Francesca Gagliardi 1, Angela De Canio 1, Antonino Castellaneta 1, Flavia Indrio 1, Lorenzo Polimeno 2
1) Departmento of Biomedicina Età Evolutiva - University of Bari, Bari, Italy 2) Department of Emergency and Organ Transplantation, Bari, Italy

Summary:
Objective: Previous papers have demonstrated an increase of IFN-α in untreated celiac mucosa, although the cellular source of this cytokine is not well known. The aim of this study was to assess, for the first time in children, the role of dendritic cells in the production of IFN-α in duodenal mucosa of untreated celiac patients. Materials: 15 untreated celiac children and 15 age and gender matched healthy controls were enrolled into the study. Peripheral DCs were enumerated by multi color flow cytometric analysis of whole blood. Plasmacytoid (PDC) and Myeloid type 1 and 2 (MDC1, MDC2) were detected by staining with anti-BDCA-2-FITC, anti-CD1c (Anti-BDCA-1)-PE and Anti-BDCA-3-APC, respectively. Number and distribution of tissue PDC and MDC1 and MDC2 were analyzed by confocal microscopic analysis of frozen duodenal biopsies, stained with purified mouse mAb anti-BDCA-4, anti-BDCA-1 and anti-BDCA-3, respectively, and detected by goat anti-mouse Alexa fluor 488-conjugated Ab. Considering that plasmacytoid DCs are the major source of INF-α, it was performed a double staining of the same biopsies for each BDCA marker and for IFN-α. The expression of IFN-α in tissue was measured by real-time PCR. Results: Blood DC enumeration showed that BDCA-2 was significantly reduced, in term of absolute number and percentage, in celiac children compared to healthy controls (10259±4812/ml vs. 9839±2340/ml, p<0,05; 0.133±0.072% vs. 0.164±0.058%, p<0,05). This finding suggests a migration to secondary lymphatic organs of BDCA-2 in active celiac disease. Confocal microscopy confirmed the results obtained by flow cytometry. In the sub mucosa, only the number and mean fluorescence intensities (MFI) of BDCA-2 (0.08 vs. 0; p<0.002)
were significantly higher as compared to controls. Only BDCA-2 in the tissue of untreated celiac patients coexpress also the INF-γ protein, that was absent in controls. This finding is supported by RT-PCR data which shows a significant increase in IFN-γ/GAPDH gene transcription in gut biopsies of celiac children as compared to controls (11.02±3.85 vs. 1.93±1.1; p<0.001). Conclusion: Our data shows that PDC derease in the circulating pool and increase in gut mucosa of untreated celiac children and that they may be the principal producer of IFN-γ.

P0491

Title:
THE ROLE OF ENTERAL FEEDING IN THE MATURATION OF GASTRIC ELECTRICAL ACTIVITY, GASTRIC EMPTYING AND INTESTINAL PERMEABILITY IN PRETERM NEWBORNS DURING THE FIRST MONTH OF LIFE

Flavia Indrio 1, Ruggiero Francavilla 1, Francesco Raimondi 1, Gennaro Salvia 3, Giuseppe Riezzo 2, Lorenzo Polimeno 1, Angela De Canio 1, Nunzia Bucci 1, Francesca Gagliardi 1, Lorenzo Polimeno 1
1) Dipartimento di Biomedicina Età Evolutiva - University of Bari, Bari, Italy 2) Laboratory of Experimental Pathophysiology I.R.C.C.S. “Saverio de Bellis”, Castellana Grotte, Italy 3) Department of Pediatric University Federico II, Napoli, Italy

Summary:
Objective: Immaturity of motility, intestinal epithelial barrier function and absorptive capacity may play a role in the pathophysiology of intestinal diseases in preterms. We determined the gastric electrical activity and emptying, and intestinal permeability, in preterm newborns during the first month of life to verify the changes in motility and permeability, and their relationships. Methods: Eighteen preterm newborns 34.4±0.8 wks completed the study. They underwent the recording of gastric electrical activity by means of cutaneous electrogastrography, the ultrasound examination of gastric emptying, and the lactulose-to-mannitol ratio from permeability-absorption test on days 3, 7, 15, and 30 after birth. Results. An evident maturation in permeability was evident between day 3 and day 7. Gastric electrical activity and emptying showed only slight changes over time whilst. Besides, a close relation was present between the half emptying time and electrogastrographic parameters (slow wave and power ratio, Spearman correlation test r=-0.61, p=0.02 and r=-0.71, p=0.007, respectively) expressed as the difference between day 7 and day 3. Conclusions. In preterm healthy newborns of 34 weeks gestational age, electrical and motor activity are completely developed at birth and improvement of gastric electrical activity is strictly related to gastric emptying time. The intestinal epithelial barrier clearly improves during the first week of life. Changes in intestinal permeability and gastric motor activity are related to enteral feeding.

P0492

Title:
Severity and Treatment Responsiveness of Pediatric Crohn's Disease With Respect to Gender

Sachin Kunde 1, Imran Awan 1, Saima Naz 1, Mohammed El-Baba 1, Namir Al-Ansari 1, Shailender Madani 1
1) Children's Hospital of Michigan, Detroit, USA

Summary:
BACKGROUND: Gender differences in pediatric Crohn's disease with respect to disease severity and response to treatment are not well explored. Girls with Crohn's disease have been proposed to have more severe course of the disease. AIM: To evaluate the difference in the severity and treatment responsiveness of pediatric Crohn's disease with respect to gender, using Pediatric Crohn's Disease Activity Index (PCDAI) scores. METHODS: A 5 yr (2002-2007) retrospective chart review was done to include biopsy proven, consecutive, incident cases of pediatric Crohn's disease at the Children's Hospital of Michigan. To assess the disease activity PCDAI score was calculated at the diagnosis and at 1 yr after diagnosis. PCDAI score of 30 or more was considered moderate to severe disease; 10-29 was considered as mild disease and <10 was considered as inactive disease. A drop of PCDAI score points by at least 12.5 after 1 yr of diagnosis was considered a 'clinically significant response' to treatment. RESULTS: 70 patients [40 males (57%) and 30 females (43%)] were identified, ranging from 3 to 17 yrs of age. The mean PCDAI score for the whole cohort was 29 +/- 11 (mean +/- SD) and was significantly higher (p=0.001) in females (34 +/- 11) vs. males (25 +/- 10). Moderate to severe disease activity was higher (p=0.02) in females (n=21, 70%) compared to males (n=17, 42%). PCDAI score after 1 yr of treatment (overall mean 10 +/- 11) was not different in females (11 +/- 11) vs. males (10 +/- 13). Both male and female patients had similar 'clinically significant response' to treatment (67% vs. 73% respectively), 1 yr after diagnosis. No significant differences were noted in surgeries related to Crohn's disease or surgical complications (perforation, strictures, abscesses or fistulas) with respect to gender. CONCLUSION: In pediatric Crohn's disease, girls have higher PCDAI scores (disease activity) than boys at the diagnosis. Females have higher proportion of moderate to severe disease activity compared to boys at the initial presentation. The disease activity score after 1 yr of treatment is similar in both groups. Both boys and girls had similar clinically significant response (drop of PCDAI score by at least 12.5) after 1 yr of treatment. The surgical complications in pediatric Crohn's disease are not different with respect to gender.

P0493
Abnormal Measured Glomerular Filtration Rate (GFR) Among Pediatric Intestinal Failure Patients Evaluated for Intestinal Transplantation.

Samuel A Kocoshis 1, Jeffrey Rudolph 1, Greg Tiao 1, Nada Yazigi 1, Maria Alonso 1, Frederick Ryckman 1
1) Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, USA

Summary:
Background: Renal insufficiency has long been recognized among non-renal solid organ recipients after transplantation. While the etiology is multifactorial, it is known that calcineurin inhibitors play a major roll in the deterioration of renal function after transplant. Less attention has been attached to pretransplant renal function outside of the context of hepatorenal syndrome. We had observed significant abnormalities in renal function among several patients prior to or subsequent to multivisceral or liver/small bowel transplantation. Thus, we have recently measured glomerular filtration rate among all patients undergoing evaluation for small bowel, liver/small bowel, and multivisceral transplantation in our institution. It is the purpose of this abstract to characterize the frequency and magnitude of abnormalities in glomerular filtration among this cohort of patients. Methods: Between 2003 and 2008, 70 patients underwent evaluation for small bowel, liver/small bowel, or multivisceral transplantation at our institution. Fifty-one of them underwent measurement of GFR utilizing Tc99DTPA during their pretransplantation evaluation. We correlated measured GFR with age, number of bloodstream infections, use of aminoglycoside antibiotics, and underlying cause for intestinal failure. Results: Twenty-one out of 51 patients (41%) had GFRs < 90 ml/min/1.73 m2. Ten of those 20 (20%) had GFRs <80 ml/min/1.73 m2, and 3 (6%) had GFRs <70 ml/min/1.73 m2. Three of 5 patients with motility disorders and megacystis had abnormal GFRs. All patients with GFRs <90 had prior histories of multiple bloodstream infections with enteric organisms requiring repeated courses of aminoglycoside antibiotics. Blood stream infections were slightly less frequent among those with normal GFRs. Times to transplantation or to death on the waiting list were somewhat shorter for those with low GFRs than for those with normal GFRs. Conclusions: Reduced GFR frequently accompanies marginally compensated liver or bowel function in patients with intestinal failure, and may have predictive value for early demise among patients listed for small bowel, liver/small bowel, or multivisceral transplant. Additionally, the post-transplant use of calcineurin-sparing immunosuppressive regimens for patients with impaired GFR seems prudent.

Reduced Incidence of Enteric Bloodstream Infections (BSI) Among Small Bowel Transplant Recipients Receiving Selective Decontamination of the Digestive Tract (SDD)

Samuel A Kocoshis 1, Jeffrey Rudolph 1, Beverly Connelly 1, Greg Tiao 1, Maria Alonso 1, Frederick Ryckman 1
1) Cincinnati Children’s Hospital Medical Center, Cincinnati, Ohio, USA

Summary:
Background: After small intestinal transplant, blood stream infections with enteric organisms are common, presumably because of translocation from the gut due to bacterial overgrowth. Disordered allograft motility, harvesting injury, acute cellular rejection, and disrupted lymphatics all contribute to this phenomenon. We employed SDD for the first 30 postoperative days following transplantation, hypothesizing that BSI can be prevented. We conducted this study to ascertain the effectiveness of this strategy. Methods: By protocol, patients received enteral tobramycin, colistin, and amphotericin B BID to QID, dosed according to patient age for 30 postoperative days. Quantitative luminal cultures were obtained weekly, and blood cultures were obtained daily x 7 and then with fever, increasing ventilatory requirement, acute cellular rejection, and distention or redness of the abdominal wall. We retrospectively assessed the results of quantitative cultures and compared the frequency of BSI/1000 catheter days during postoperative days 1-30 with the frequency of BSI/1000 catheter days among the same cohort from postoperative days 31-60. Results: Between August 2003 and March 2008, 23 patients completed the protocol, and underwent an average of 12 blood cultures during the first 30 postoperative days. There was only one blood stream infection during 690 catheter days (1.44/1000 days) compared to 5 during 690 days during the second postoperative month (7.24/1000 days among controls). Within 7 days of initiating decontamination, 22/23 patients achieved counts of either <100,000 CFU or no growth within the small intestine. One with persistently high small intestinal counts grew alpha hemolytic streptococcus from the intestinal lumen but not the bloodstream, and only one with <100,000 CFU within the intestinal lumen developed a BSI (Enterococcus) during the first postoperative month. Conclusions: SDD is associated with reduction in luminal bacterial counts and reduced incidence of BSI during therapy. Further studies of longer-term SDD should be pursued.

INCREASED INCIDENCE RATE OF NEW CASES OF CELIAC DISEASE AMONG CHILDREN IN NAVARRA (NORTH OF SPAIN) DURING 1995-2007
Summary:
An increased incidence of celiac disease (CD) over time in Europe has been previously suggested by different authors. AIM: To assess the incidence of new CD during the last 13 years in Navarra (Northern part of Spain) among children under the age of 15. METHODS: We collected cases of CD diagnosed from January 1995 to December 2007 among children less than 15 years of age using the capture-recapture method. CD cases were diagnosed following the clinical, biochemical, biopsy and HLA ESPGHAN criteria. They were ascertained through the CD paediatric data base of the Hospital Virgen del Camino (Pamplona). Diagnostic confirmation and recapture of CD cases was performed by reviewing the biopsy records of the Pathology Department. Population data (number of children under the age of 15 and number of births per year) for the province of Navarra were obtained through the National Institute of Statistic. RESULTS: A total of 398 newly diagnosed CD cases were identified for the study period. Distribution of cases by year is shown in the following Graph. We analyse the number of new CD cases / 100.000 children less than 15 years and the relation between new CD cases/ number of newborns in the same year (See Graph). Rates of CD in the population of Navarra show a marked increased tendency during the last 13 years with a frequency of 1 per 126 newborns and an incidence rate of 60,5/100.000 children less than 15 years of age for 2006, with similar rates in 2007. 76% of cases diagnosed during 2001-2006 had classical clinical symptoms. Their mean age at diagnosis was 36 months and 76% of them were under four years of age at the time of diagnosis. CONCLUSIONS: The incidence of new cases of Pediatric CD in Navarra has significantly increased during the last decade. Such increase is associated with the presence of classical symptoms in children under 4 years of age. Our results are comparable to those observed in countries with high incidence CD rates are similar to our results based on population CD screening studies.

Title:
LACK OF RELATION BETWEEN ROTAVIRUS GASTROENTERITIS AND INTUSSUSCEPTION AMONG INFANTS LESS THAN 18 MONTHS

Summary:
It has been described a possible association between acute gastroenteritis by rotavirus (AGER) and intussusception, and it was even described a possible association with the vaccine of rotavirus that was commercialized in first place. The later studies of the two vaccines against rotavirus that have been commercialized recently do not find this association in the vaccinated children. Material and Methods: Retrospective study from the year 1999 to 2005. All were infants under 18 months hospitalized in a tertiary pediatric
hospital, with de diagnose of AGER and intussusception (some of them solved by enema and other with surgical procedures). The diagnoses of the data bases of the unit of Clinical Documentation that codifies all the hospitalable discharges, by means of CIE-9 are extracted. Variables of identification (total number of hospitalizations each year, sex, age at diagnosis, month of diagnosis) in both clinical pathologies are analyzed. In the referred period 283 cases of AGER and 73 of intussusception are observed in these children. As much the AGER (61.8%) as the intussusception (56.8%) is more frequent in men and the average age is slightly superior in the intussusception (9.8 months) that in the AGER (8.9 months). Nevertheless, the temporary analysis demonstrates that the monthly maximum tip in the AGER is in December and months of winter, being the intussusception incidence similar in all the months. From the other side, a relation is not already seen being the annual number of hospitalizations by AGER and intussusceptions. So far, the increase of hospitalizations by AGER in 2003 and 2004 was not accompanied by an increase of hospitalization by intussusception, and the maximum numbers of income by intussusception even agree with lowest by AGER (years 1999 and 2000). CONCLUSIONS. The AGER and the intussusceptions occur in the same group of pediatric age (same age average and equal distribution by sex), but we did not find a direct relation in the monthly epidemiological profile nor in the annual incidence between both pathologies, as it suggests a possible lack of relation between them.

P0497

Title: Previous nasal septal perforation in a girl with Crohn’s disease

Santiago Fernández-Cebrián 1, Humberto Ordoñoztú Osorio 2, Javier Pérez Valcarcel 3, María J Pita Pérez 4, Félix J Vadillo González 4

Summary:
Introduction. Crohn’s disease is a chronic granulomatous inflammatory bowel disease that can affect numerous extraintestinal organs, like joints, skin, liver, eyes, being the nasal perforation a quite rare manifestation. Case report. Girl of 15, diagnosed 3 years ago of ileocolic Crohn’s disease with perianal fistula, that receives treatment with mesalazine, metranidazole, enteral nutrition, steroids and azathioprine, rejecting biologic initial treatment (Infliximab-Adalimumab) Being asymptomatic (PCDAI< 15) presents rhinorrea and sneezes of 3 weeks of evolution. In previous rhinoscopy, perforation of previous nasal sept of approximately 15x12 mm, without suppuration. The histopathology revealed nonspecific necrosing injury, microabscesses without granulomas and fissures with fibrinoid necrosis on basal foil. No microorganisms in the Gram were identified neither fungi nor acid-fast bacilli. Giant noncells multicored, nor viral cytopathic effect. Negative cultivation for fungi and bacteria. Paranasal TAC without other findings. FR, ANA were made, anti-dsDNA CH50, C3, C4, VDRL, VIH, PPD and were all negatives. Anti-neutrophil cytoplasmatic antibodies cANCA 1:160 (negative PR3/ANCA and MPO/ANCA). Toxics in urine and sediment negative. Ocular revision and normal audiometry. Pelvic-anal RNM: intrasphync-tianarian fistula. After this problem she accepted initiating biological therapy, with total closing of perianal fistula. We made nasal surveillance, without appreciating increase of perforation nor nasal deformity one year after. Conclusion. In the Crohn with fistulous manifestations we must be alert on outlier manifestations of fistulas masked by the immunosupression. Few bibliographical references exist about septal nasal perforations as extraintestinal manifestations of the Crohn; in most of them granulomas in the injury are not seen at the moment of the diagnosis and must be considered after exclusion of other pathologies.

P0499

Title: Oesophageal eosinophilic infiltration: meaning and evolution.

Laurence Muyschont 1, Patrick Bonments 1, Assad Salame 1, Carine Deprez 1, Samy Cadranell 1, Michèle Scallon 1
1) Hôpital universitaire Des Enfants Reine Fabiola, Brussels, Belgium

Summary:
Eosinophils are usually found in the normal esophagus and an eosinophilic infiltration (EI), always abnormal, is most often due to gastrointestinal reflux. The presence of an EI > 20 / field (f) associated to a non-response to the appropriate anti-reflux therapy suggests Eosinophilic esophagitis (EE) and represents its main criterion. Aim: To evaluate the differential diagnosis between peptic esophagitis and EE and the possible evolution of EI. Methods: The clinical data of 2817 patients (P) in whom esophageal biopsies were taken during the period 2000-2005 were revised for endoscopic findings (p=0.04): normal (39% in G1 vs 18% in G2) and erosions (32% in G1 vs 13% in G2). On the contrary symptoms as well as pH-metry recordings are similar in the two groups: abdominal pain 56% vs 50%, vomiting 34% vs 34%, allergy 26% vs 33% and abnormal pH-metry in 13/18 P in G1 (= G1a) vs 9/17 P in G2 (= G2a). After adequate anti-reflux therapy, the disappearance of the EI was observed in 10 P G1a as well as a normal pH-metry was recorded in 6 P G2a. However in these 6 P the disappearance of EI was observed only in 2P but an EI > 20/f persisted in
the remaining 4 P. Despite a normal pH-metry, 8P of G2 were treated with PPIs. A follow up, available in 6/8 P, showed a decrease of EI in 2 P and a persistence of an EI ¡Ý 20 / f in 4P. In 4/8 P defined as EE with an EI ¡Ý 20/f therapy consisted in an antiallergic diet combined with topic steroids and decrease of EI was observed in all 4P. In 16/79P, a previous earlier (1month to 6 years, med 18 months) normal oesophageal biopsy evolved into an EI (8P G1 and 8P G2 )

Conclusions: The presence of an EI may vary upon time and a gastro-oesophageal reflux should always be ruled out. An EI ¡Ý 20 / f suggests EE. Although usually unsuccessful, an anti-reflux therapy is nonetheless indicated, even in case of a normal pH-metry. Careful follow-up of the evolution of eosinophilic infiltration is not only justified but strongly advised.

P0500

Title:
UNIQUE ASSOCIATION BETWEEN GASTRIC ADENOCARCINOMA AND RAPADILINO SYNDROME IN A 8 YEARS OLD CHILD.

Catherine Adler 1, Coralie Deblicq 1, Martine Dassonneville 1, Christine Devalck 1, Samy Cadranel 1, Michele Scaillon 1
1) Queen Fabiola Children's Hospital, Brussels, Belgium

Summary:
We present the case of a 8 year old child carrier of the RAPADILINO syndrome (RADial, PATellas, absent/hypoplastic and cleft/high arched PALate, Dianthrea/Dislocated joints, Little size/Limb malformations, NOse long and slender /NOrmal intelligence) who developed a gastric carcinoma on a gastrostomy scar. Born to non consanguineous caucasian parents he was followed up since infancy for growth retardation, diaphoea and facial poikiloderma. Two mutations in the RECQL 4 gene were found, associated with the RAPADILINO and Rothmund Thomson Syndrome (RTS). Due to feeding difficulties and growth retardation he was fed through a gastrostomy during 3 years and treated with growth hormone. An upper GI endoscopy motived by chronic cough related to gastroesophageal reflux showed an infiltrating gastric tumor at the site of the previous gastrostomy. Pathology findings revealed signet-ring cells and fibrous stroma compatible with limits plastica. Endosonography showed involvement of the wall and invasion of the muscle layer with a satellite lymph node whereas CT and PET scans ruled out metastases. Following total gastrectomy with Roux-en Y anastomosis no infiltration of the mucosa nor satellite lymph node could be found and no adjuvant treatment was instituted with uneventful follow up except for occasional dumping syndrome. The patient is alive after 4 months. Discussion In children, gastric adenocarcinoma represents 0.05 % of all digestive tumors, the latter accounting for 5 % of all cancers. Literature reports only 3 other cases of limitis plastica in children, never related to an underlying syndrome. Our patient is carrier of the RAPADILINO/RTS. The RECQL4 gene implicated possesses ATP-dependent DNA helicase activity, involved in recombination, transcription and DNA replication while maintaining genome stability. The loss of function of this protein is associated with accelerated senescence and increased cancer risk (generally osteosarcomas). One case of gastric adenocarcinoma has been reported in a patient with RTS. This report is the first reported cancer developing on a gastrostomy scar. Besides our patient was treated with growth hormone which has a pro-neoplastic potential although not concerning digestive tumors. Conclusion The dysplastic field from gastrostomy scar, treatment with growth hormone and the RAPADILINO/RTS are probably important cofactors involved in the development of this gastric limitis plastica adenocarcinoma.

P0501

Title:
Alanyl-Glutamine (Ala-Gln) Transactivates Epidermal Growth Factor Receptor (EGFR) to Stimulate Mitogen-Activated Protein Kinase (MAPK) Activity and Intestinal Epithelial Cell Growth

Sean R. Moore 1, Stuart S. Hobbs 1, Mark R. Frey 1, Richard L. Guerrant 2, Aldo A.M. Lima 3, D. Brent Polk 1
1) Vanderbilt University, Nashville, Tennessee, USA 2) University of Virginia, Nashville, Tennessee, USA 3) Universidade Federal do Ceará, Fortaleza, Ceará, Brasil

Summary:
Background and Aims: Glutamine is a key metabolic fuel for intestinal cells and may be conditionally essential for intestinal barrier function during severe illness. Recent evidence suggests cellular responses to glutamine may be mediated by EGFR. Ala-Gln, a highly soluble and stable glutamine dipeptide, enhances intestinal barrier repair in laboratory and patient studies of undernutrition and HIV-associated diarrhea. Despite encouraging results from clinical trials, Ala-Gln’s mechanisms of action remain only partially understood. These studies were designed to test the hypothesis that Ala-Gln modulates EGFR signal transduction to regulate intestinal epithelial cell growth. Methods: Colorimetric cell count assays were performed in mouse small intestine epithelial (MSIE) and young adult mouse colon (YAMC) cell lines in the presence of EGF, AG1478 (an EGFR kinase inhibitor), or vehicle control, and varying concentrations of Ala-Gln. To test for Ala-Gln-stimulated EGFR and MAPK activation, glutamine-starved MSIE and YAMC cells were incubated with Ala-Gln in time course experiments and expression levels of phosphorylated EGFR and MAPKs were detected by Western blot analysis. Western blot analyses for Ala-Gln-stimulated EGFR and MAPK phosphorylation were also performed in EGFR-null and EGFR-wildtype addback mouse colon epithelial (MCE) cells. Results: After 24 hours, Ala-Gln (1 mmol/L) treatment doubled the number of viable MSIE cells when compared to unsupplemented cells. This effect was markedly inhibited by AG1478. EGF also produced significant increases in MSIE cell counts, but...
only in the presence of Ala-Gln. Western blot analysis of EGFR and MAPK phosphorylation showed rapid EGFR and MAPK activation by 2 minutes, an effect blocked by AG1478. In addition, Ala-Gln stimulated EGFR and MAPK phosphorylation in EGFRwt MCE cells, but not EGFR-/- MCE cells. Conclusions: Ala-Gln transactivates EGFR, stimulates MAPK activation, and promotes mouse small intestine and colon epithelial cell growth. Ala-Gln-stimulated cell growth requires EGFR tyrosine kinase activity and Ala-Gln-induced intestinal cell MAPK activation requires EGFR transactivation. Further studies are needed to assess whether Ala-Gln increases proliferation, decreases apoptosis, or both; and to define the roles of EGFR and MAPK signaling in these responses essential to wound healing and maintenance of intestinal epithelial monolayer homeostasis.

P0502

Title: Anti Transtissue glutamase (IgA) seropositivity in severe short stature children

SEEMA ALAM 1, FARAZ AHMAD 1, INDU SHUKLA 1, RANA SHERWANI 1, S MANAZIR ALI 1
1) JNMC, ALIGARH, INDIA

Summary:
Objective: This prospective study was planned with the aim to determine the prevalence of celiac disease in severe short stature (<-3 SD) children and adolescents between 1-18 years of age attending the Pediatric outpatient, inpatient and/or the Pediatric Gastroenterology clinic. Methods: All children in age group of 1-18 years presenting to Pediatric outpatient, inpatient and Gastroenterology clinic, having height less than -3 SD for their age and sex, were included. One age and sex matched healthy control (height more than -2 SD) was taken. The included subjects (study & control group) were subjected to anti tissue transglutaminase (tTG) (IgA) antibody assay estimation. Total IgA estimation was not done. Results: Of the 112 cases 23 were tTG positive, giving a prevalence of 20.5% for seropositivity among short stature cases for tTG, while all the controls were seronegative for tTG. All the 23 had tTG values above 40 U/ml and at least 10 had values above 100 U/ml. In 51 cases without gastrointestinal symptoms only 6 (11.7%) were seropositive for tTG. On Univariate analysis we found that the presence of chronic diarrhea (OR = 2.55, 95%CI – 1.08-5.98), bulky stools (OR = 3.03, 95%CI – 1.52-6.05), hemoglobin < 7 gm%(OR = 3.33, 95%CI – 1.70-6.54) and more severe short stature (<-4 SD) (OR = 2.45, 95%CI – 1.05-5.76) had significant association with the tTG positivity. On logistic regression analysis in all cases, haemoglobin <7gm% as well as bulky stools and in cases with no gastrointestinal symptoms hemoglobin < 7 gm% (OR = 7.99, 95%CI – 2.45-26.0) were significantly associated with tTG positivity. Conclusions: More than one fifth of all severe short stature and 11% of the asymptomatic severe short stature are seropositive for tTG and the chances of seropositivity increases if severe anemia is also associated.

P0503

Title: Tissue transglutamase (IgA) positivity in children with Recurrent Abdominal Pain.

Seema Alam 1, Anshul Gupta 1, Indu Shukla 1, Rana Sherwani 1, Syed Manazir Ali 1
1) Pediatric Gastroenterology Section, Department of Pediatrics, *Microbiology and **Pathology, JNMC, Aligarh Muslim University, Aligarh, India

Summary:
OBJECTIVE: To screen for tissue transglutaminase positivity in children between 4-16 years of age with recurrent abdominal pain. METHODS: It was a prospective case control study in which children aged 4-16 years fulfilling Apley’s criteria for recurrent abdominal pain (RAP) attending the pediatric gastroenterology clinic were included from April 2007 to March 2008. Necessary workups were made to find a cause for their abdominal pain and their serum was assayed for IgA anti tissue transglutaminase (tTG) antibody by ELISA. Data was collected from all included subjects on pretested proforma. Total IgA level was not done. RESULTS: There were 43 cases and 42 controls (age and sex matched) taken up for the study. The mean age for both cases and controls was 100.65 months. The gender ratio for cases and control was 1:0.59 and 1:0.55 respectively. There were 43 cases of RAP of which 10 (23%), 12 (27%), 4 (9%) had stunting, chronic diarrhea and severe anemia respectively. Of the 43 cases, 31(72%) had no other gastrointestinal symptoms than RAP. Of the total 43 cases, 8 (18.6%) were found to be tTG positive while in the control group, none were positive. Of these 31 cases with no other gastrointestinal complaints apart from RAP. Of the total 43 cases, 8 (18.6%) were found to be tTG positive while in the control group, none were positive. Of these 31 cases with no other gastrointestinal symptoms than RAP, the only case with severe anemia and 2 of the 4 cases with stunting were tTG positive. Hence 3 (9.8%) of the 31 cases with only RAP as GI symptom were tTG positive. Of the total tTG positive 8(18.6%) cases, 4(50%), 5(62.5%), 5(62.5%) were found to have severe anemia, stunting and chronic diarrhea respectively while 3(37.5%) cases had severe anemia, stunting and chronic diarrhea together. Of the 4 tTG positive cases where duodenal biopsies were done, 3(75%) showed features consistent with Marsh III C while 1(25%) showed inconclusive report. More biopsies have to be done. CONCLUSION: 18.6% of the all the RAP cases and 9.8% RAP cases with no other GI symptoms were tTG positive.

P0504

Title: Anti-tissue Transglutaminase Antibodies and Infectious Diseases in Children
**Title:**
**Co morbidities associated with methane production on breath test**

Shaista Safder 1, Bethany Braunstein 1, Gisela Chelimsky 1
1) Rainbows Babies and Children Hospital-Case Western Reserve University, Cleveland, USA

**Summary:**
Introduction: Methane is a by product of anaerobic bacteria. It has been shown to be elevated in children with constipation, encopresis and in small bowel bacterial overgrowth (SBBO). Methane elevation could be a result of delayed transit time or could cause it. Achlorhydria could predispose to SBBO due to loss of acid barrier in stomach. Aim: To identify patients who were found to be methane producers on breath test and analyze their associated co-morbidities which could explain the production of methane. Methods: An IRB approved retrospective chart review was performed on all lactose/glucose breath test done over the past two years in our GI department and all patients who were methane producers on breath test were included, and then evaluated for associated co-morbidities. Methane producers were divided in 3 groups: 1) methane >3ppm on more than 2 samples 15-30' apart; 2) high basal as methane >10ppm at time 0 (at least 2 samples 30' apart); 3) SBBO as H2 >20ppm or methane >10ppm above baseline within the first 60'. Results: 84 patients (41M) were methane producers, mean age 9.2 + 4.6 years. Patients with cerebral palsy, developmental delay, mental retardation, mitochondrial disease, or genetic syndromes were grouped in a single category of neurological disorders (ND). In the ND group 50% (5/10) were on acid suppression and 40% (4/10) had a history of constipation. The table summarizes the results. Conclusion: Methane production is commonly found but not limited to patients with constipation & encopresis. Dyspepsia patients are methane producers, but usually without elevated baseline or SBBO whereas patients with ND are more prone to develop SBBO. Speculations: It is uncertain if methane production is a cause or effect of poor motility, since methane may contribute to decrease motility. The pattern of elevation may be a predictor of the severity of the motility disorders, as in the case of patients with ND who have SBBO. Children with dyspepsia/GERD who are on empiric trials of PPI and H2 blockers did not show SBBO despite decrease acid production.

**P0506**

**Title:**
**Non-Psychiatric co-morbidities in Pediatric Functional Gastrointestinal Disorder (FGID): an area in need of exploration**

Gisela Chelimsky 1, Elizabeth Heller 1, Shaista Safder 1, Thomas Chelimsky 1
1) Case Medical Center, Cleveland, USA
Background: Though adults with IBS have many co-morbidities including fibromyalgia, interstitial cystitis and orthostatic intolerance, the known pediatric associations are primarily psychiatric. The aim of this investigation was to identify non-psychiatric co-morbidities of FGID. Methods: We solicited enrollment in this IRB approved study from the family of every child tested in the autonomic laboratory who met the ROME II or III criteria for FGID. All had autonomic testing and completed the ODYSYA questionnaire, a tool that evaluates the presence of 12 different autonomic diagnoses: IBD, functional dyspepsia (FD), functional abdominal pain, syncope, fibromyalgia, postural tachycardia syndrome (POTS), complex regional pain, chronic fatigue syndrome, Raynaud’s syndrome, cyclic vomiting syndrome (CVS), interstitial cystitis and migraine headache. Results: Of 40 children with FGID, 19 had IBS, 13 functional dyspepsia, 4 CVS and 4 abdominal migraine. Subjects with FGID had an average of 1.3 co-morbid diagnoses identified by ODYSYA, 32 had orthostatic intolerance, 8 had migraine and 6 had fibromyalgia. In addition, autonomic testing identified an autonomic neuropathy (AN) in 22, POTS in 26, orthostatic hypotension in 5 and syncope in 11. Taking the results of the ODYSYA questionnaire and the autonomic testing, the subjects had an average of 2 non psychiatric co-morbidities per subject. Conclusions: Co-morbid autonomic diagnoses occur commonly in children with FGID, with orthostatic disorders predominating in 90%, followed by and autonomic neuropathy, and migraine headaches. The complexities of the associated diagnoses contribute to the difficulties in treating these patients and the need for multi-disciplinary approach. Limitation of this study is the skewed population investigated, since they were enrolled from the autonomic lab. Further studies need to investigate all children with FGID, comparing them to control subjects without FGID.

Title: Postural Tachycardia Syndrome (POTS) and Functional Gastrointestinal Disorders (FGID): A role for altered electrical activity of the stomach?
Shaista Safder 1, Thomas Chelimsky 1, Elizabeth Heller, Bethany Braunstein 1, Mary Ann ORiordan 1, Gisela Chelimsky 1
1) Case Medical Center, Cleveland, USA

Summary: Background: The cause of abdominal pain in patients with orthostatic intolerance is unclear. Children can be divided into subgroups based on whether upright tilting replicates symptoms. We investigated whether the electrical activity of the stomach also changes with tilt position. Hypothesis: Children with FGID and POTS have changes in the electrical activity of the stomach during the upright portion of the tilt. Methods: All children undergoing autonomic testing were enrolled in this IRB approved prospective study. EGG was recorded 10 minutes in supine position and during the upright portion of tilt. EGG findings were correlated with autonomic diagnosis using Wilcoxon Rank Sum test. For the purpose of statistical analysis children were divided into two groups: 1) POTS and or vasodepressor syncope (VDS) 2) Non-POTS group include normal subjects and subjects with autonomic neuropathy. Results: 12 patients participated (8 females). Mean age 14 ± 3.5 years. 7 had POTS/VDS, 3 autonomic neuropathy, 2 were normal. All subjects with POTS replicated symptoms during upright portion of the tilt. When evaluating Channel 1 of EGG, subjects with POTS/VDS, but not those without POTS, showed a tendency for an increase in % tachygastria (p=0.09) and a decrease in normal gastric activity (p=0.1) in the upright position in relation to the supine position. Conclusion: This exploratory study suggests that the electrical activity of the stomach changes during the upright position in children with POTS/VDS, but not in children without this diagnosis. These changes could reflect abnormal autonomic control of gastric electrical activity and bear some relationship to the chief complaint of pain which worsens in the upright position. Further studies are needed to corroborate these findings. Legend to Figures Changes in % tachygastria and % normal gastric electrical activity lying vs standing. (Solid dot: non-POTS subjects; stars: POTS subjects)

Title: Significance of IgG RAST Testing in Patients with Eosinophilic Esophagitis
Reema Gulatti 2, Shaista Safder 1, Judy Splawski 1, Gisela Chelimsky 1
1) Case Medical Center, Cleveland, USA 2) Metro Health Medical Center, Cleveland, USA

Summary:
Background: The role of RAST IgG is not well accepted. Few reports described clinical improvement when management was based on results of RAST IgG. This study attempts to evaluate the role of RAST IgG utilizing a histological marker to describe improvement in patients with Eosinophilic Esophagitis (EE) Aim: To establish if eliminating foods based on RAST IgG titers in pediatric patients in whom no IgE mediated food allergies were detected, helped in healing the histological changes in patients with EE. Methods: We retrospectively reviewed 200 charts of patients with EE, and included subjects with proven EE. Inclusion criteria included: 1) recorded RAST IgE and RAST IgG titers 2) No allergies found based on RAST IgE; 3) food elimination diet based on results of RAST IgG titers; 4) Endoscopic biopsies before and after intervention based on RAST IgG. We defined a positive IgG RAST if the titer was = or > than class 3/5. Other medications utilized were also recorded. Results : 15 children met criteria (7 females). 13 patients showed clinical improvement with resolution of dysphagia and vomiting and 2 remained the same. Histologically 8/15 showed improvement, 6 had no change and 1 showed a stricter. 11/15 patients were on PPI and 10/15 were on swallowed fluticasone along with food elimination diet. The most common food item eliminated was milk. 3/15 had histologic improvement without the use of swallowed steroids Conclusion: RAST IgG testing of food items is helpful in patients with EE as it may serve to recognize non IgE mediated food allergies which could be contributing to the disease. The majority of patients showed clinical improvement on food elimination based on RAST IgG titers alone or with fluticasone with histological improvement or resolution. A prospective control study is needed to determine the utility of RAST IgG as a clinical tool. Limitations: The study was retrospective. The used of inhaled steroids may have contributed to the improvement. Speculation: Testing of RAST IgG titers to common food products should be standard of care along with IgE mediated food allergies and skin testing in patients with EE. It may be a useful tool in treating EE in which no IgE mediated allergy is present.

P0509

Title: Inhibition of intracellular replication of Salmonella enterica serovar Typhimurium SL1344 and IL-8 secretion in HEP-2 cells by postinfectious administration of Lactobacillus GG and Lactobacillus plantarum 299v

Shiuh-Bin Fang 1, Mark Lucas 1, Arunon Sivananthan 1, Stephanie Schüller 1, Alan Phillips 1
1) Centre for Paediatric Gastroenterology, Royal Free & University College Medical School, London, UK

Summary:
Objective: The ability of probiotics to ameliorate existing infections would be a highly desirable characteristic. The aim of this study was to investigate if Lactobacillus GG (LGG) or Lactobacillus plantarum 299v (Lp299v) could reduce IL-8 secretion and/or intracellular non-typhoidal Salmonella replication following infection of HEP-2 cells. Methods: HEP-2 cells were infected with Salmonella enterica serovar Typhimurium SL1344 (MOI = 20) for one hour, treated with gentamicyn for one hour to kill extracellular bacteria, and the infections were allowed to continue for 5 and 7 hours (positive controls). At these times intracellular bacterial cell numbers were calculated, and supernatants were collected to measure IL-8 protein with a commercially available ELISA. To determine the effect of probiotics on these parameters, low (MOI = 4) or high (MOI = 40) dose overnight cultures of LGG or Lp299v were added after gentamicyn treatment and incubated with the cells. Statistical significance (p<0.05) was tested using One-Way ANOVA. Results: Intracellular replication of SL1344 was not inhibited by 5 hours probiotic exposure. At 7 hours, high dose LGG (22%, p = 0.029), and either low (22%, p = 0.028) or high dose Lp299v (33%, p = 0.002) inhibited SL1344 replication. High, but not low, dose probiotic treatment lowered IL-8 production at 5 hours (LGG 104 ± 14 pg/ml [p = 0.0001], Lp299v 90 ± 8 pg/ml [p = 0.0001] vs positive control 255 ± 75 pg/ml). At 7 hours, both low and high dose probiotics reduced IL-8 levels (LGG low 171 ± 47 pg/ml [p = 0.0001], high 87 ± 42 pg/ml [p = 0.0001]; Lp299v low 171 ± 58 pg/ml [p = 0.0001], high 52 ± 40 pg/ml [p = 0.0001] vs positive control 288 ± 56 pg/ml). High dose probiotics reduced IL-8 more than low dose treatment at 7 hours (LGG p = 0.003, Lp299v p = 0.0001). Conclusion: The application of LGG and Lp299v to Salmonella enterica serovar Typhimurium SL1344 infected HEP-2 cells can reduce intraepithelial bacterial replication and can dose-dependently reduce IL-8 secretion.

P0510

Title: Reliable diagnosis of childhood celiac disease based on assays of antibodies against deamidated gliadin and tissue transglutaminase

Christian Prause 1, Wolfgang Schlumberger 2, Sibylle Koletzko 3, Thomas Mothes and the Celiac Disease WG of the GPGE 1
1) Institute of Laboratory Medicine, Leipzig, Germany 2) Euroimmun Medical Laboratoric Diagnostics AG, Luebeck, Germany 3) Dr. v. Haunersches Kinderspital, Munich, Germany

Summary:
Objective: Diagnosis of celiac disease (CD) still remains a complex and difficult matter. Assay of antibodies in the sera of patients is regarded as important aid but final diagnosis depends on histological inspection of duodenal tissue. Recently, a new species of antibodies directed against deamidated gliadin has been described as a new diagnostic tool. We investigated the validity of the new antibodies for diagnosis of childhood CD. Methods: IgG- and IgA-antibodies against repetitive gliadin analogous fragments (anti-GAF3X) were measured in sera of 181 children with biopsy proven CD under normal gluten containing diet and of 220 biopsied disease controls. For comparison, antibodies against native gliadin (anti-GLI), tissue transglutaminase (anti-TTG), and endomyosium (EmA) were determined. The diagnostic validity of the tests was assessed by receiver-operating-
characteristics (ROC) analysis and area under the ROC curve (AUC) was calculated (in %). Diagnostic accuracy was calculated as sum of true positives and true negatives divided by the total number of individuals tested.

Results: AUC was significantly larger (p<0.001) for anti-GAF3X (IgG 98.3%; IgA 94.8%) than for anti-GLI (IgA 88.1%; IgG 86.4%). There was no significant difference (p>0.42) in AUC between IgG anti-GAF3X, IgA EmA (97.5%) and IgA anti-TTG (97.9%). Diagnostic accuracy was 94.8% for IgG-GAF3X, 94.0% for IgA EmA and 96.0% for IgA TTG.

Conclusion: The new anti-GAF3X ELISA is based on a completely new antigen, which reflects a peptide derived from native gliadin by deamidation through TTG. Therefore, it represents a very specific epitope for antibodies in CD. The new test for antibodies against GAF is able to displace conventional assays for anti-GLI. The high validity of the IgG-class of anti-GAF3X allows detection of CD also in case of IgA deficiency. Therefore, assays for IgG anti-TTG as well as for total IgA are no longer necessary. Thus, the combination of only two tests (IgA-anti-TTG and IgG anti-GAF3X) is completely sufficient for serological diagnosis. Depending on results of further investigations the high accuracy of the 2 antibody tests at very low and at very high concentrations might even make biopsy unnecessary for part of the patients.


**P0511**

Title: Severe variant of X-linked dyskeratosis congenita (Hoyeraal-Hreidarsson Syndrome) presenting as enterocolitis with intestinal insufficiency in early childhood

Ingo Borggraefe 1, Tina Arenz 1, Tom Vulliamy 2, Véronique Weiler 3, Bernd H. Belohradsky 1, Sibylle Koletzko 1
1) Dr. von Haunersches Kinderspital, Ludwig Maximilians University, Munich, Germany 2) Department of Hematology, Hammersmith Hospital, London, United Kingdom 3) Institute of Pathology, Ludwig Maximilians University, Munich, Germany

Summary: Objective: Hoyeraal-Hreidarsson syndrome (HHS) (MIM 600545) - an X-linked multisystem disorder characterized by dysfunction of fast proliferating tissues - is due to mutations in the dyskeratosis congenita gene DKC1. The key clinical features in patients with HHS are bone marrow insufficiency with pancytopenia and immunodeficiency of variable phenotype, growth retardation, microcephaly with cerebellar hypoplasia. Here we report on two unrelated boys with HHS who initially presented with enterocolitis and intestinal failure. Case reports: Both boys were born in 2002 and developed intractable diarrhea at age 8 months (patient 1) and 3 years (patient 2), respectively. Ileocolonoscopy showed very similar macroscopic findings: an unspecific pancolitis with edema and discontinuous ulcerations and pieces of mucosa tissue floating from the ileum into the colon after bowel lavage. Histology revealed only very mild inflammatory infiltrates in the colon with crypt distortion and increased apoptosis similar to graft versus host disease. The enterocolitis was unresponsive to corticosteroids, azathioprine, and cyclosporine. Both patients required long-term parenteral nutrition, ileostomy and multiple operations due to bowel obstruction. Progressive B-cell defect and bone marrow insufficiency developed with normal T-cell function. Both patients suffered from pneumocystis jiroveci pneumonia before the diagnosis of HHS was suspected. Both patient were microcephalic with mild to moderate developmental delay. Cerebral MRT revealed cerebellar atrophy involving predominantly the vermis and the tonsils in the first child, which gave the suspicion of HHS, but to our surprise, MRT was normal in the second child. Molecular genetic analysis of the DKC1 gene showed in the first patient a previously published C to T substitution at position 1150 leading to an amino acid change from alanine at valine at position 353 in the amino acid sequence, while the second patient had an unknown mutation (c.1133G>A; Arg378Gln). Because of the poor results of stem cell transplantation in patients with HHS, treatment was palliative including antibiotic prophylaxis, i.v. immunoglobulins, blood and platelet transfusions. The first patient is still alive at 6 years of age, the second died aged 5 years of septicemia. Conclusions: HHS should be considered in young children with intractable diarrhea and B-cell dysfunction, even if not all “obligatory” symptoms of the syndrome are present.

**P0512**

Title: Elemental Diet (ED) Attenuates Gastrointestinal (GI) Symptoms in IgG Subclass Deficiency (ISD)

Simon S Rabinowitz 1, Vinod Anandpara 1
1) Richmond University Med Center, Staten Island, USA

Summary: Objectives: (1) To describe the clinical features, laboratory investigations, and gastrointestinal histologic characteristics of 3 children with ISD, GI morbidity, and failure to thrive (FTT). (2) To provide preliminary data suggesting a therapeutic role for ED in young children with ISD.

Design / methods: Retrospective chart review of 3 children with ISD. All presented with feeding problems, chronic diarrhea and FTT. They acted clinically as if they had multiple food allergies or intolerances. All had GI endoscopies with biopsies and received ED. All were followed up regularly to evaluate their growth and symptoms.
Results: A nine year (y) old Puerto Rican girl presented with FTT and recurrent bouts of diarrhea. She had low levels of IgA, IgG2 and IgG4 and had been receiving regular IV gamma globulin because of recurrent pneumonias. After biopsies of her esophagus, stomach, small intestine, colon, liver, and lymph nodes at another institute, she had severe malnutrition and no diagnosis. Parenteral nutrition via a central line was recommended. She came for a second opinion and was started on ED via a percutaneous feeding tube (PEG) with gradual, small increments in her oral diet. She realized dramatic improvements in weight and height percentiles and was able to go through full pubertal changes. As a teenager she had diminished compliance with the stringent diet yielding recurrent symptoms and weight loss.

Two (4y and 2y) Eastern European Jewish brothers presented as a toddler and an infant with oral feeding problems, FTT, recurrent bouts of diarrhea, and repeated bouts of otolaryngologic infections. The 4y old had low levels of IgA, IgG2 and IgG4 and the 2y old had low IgG4 only. Both were started on ED with very slow, deliberate introduction of additional antigens. The older brother improved his oral feeding problem and diarrhea. He consumes ED and a limited empirical diet. He is growing at the 10% weight for age. The younger brother receives ED through a PEG, gains weight at the 50%, has decreased frequency and severity of GI symptoms, and is making progress with oral feeds.

Conclusions: ISD should be considered as a potential etiology in infants, toddlers, and young children with feeding problems, GI symptoms and/or failure to thrive. A trial of ED is warranted in this cohort. Future investigations will define the prevalence of GI, feeding, and nutritional compromise in ISD children and the overall efficacy of ED in this cohort.

P0513

Title: Etiological study on acute diarrhea among children under the age of five years from 2006 to 2007 in Guangzhou

Gong Si-tang 1, Feng Xiao-min 2, Zhong Jia-ru 1, Zhou Rong 1, Ou Wen-ji 1
1) Guangzhou Children’s Hospital, Guangzhou, China 2) Guangzhou Medical College affiliated Guangzhou Women and Children Medical Care Center, Guangzhou, Guangzhou, China

Summary

Objective: Gastroenteritis disease is a major cause of childhood morbidity and mortality, especially in developing countries. Enteric virus have been recognized as the most important etiologic agents of disease, and four categories of viruses are now considered as clinically important including human rotavirus (HRV), enteric adenovirus (EAdV), noro virus (NV) and human astrovirus (HAstV). We study molecular epidemiology of four major enteric viruses among children with diarrhea in Guangzhou, Guangdong province, and provide the theory evidence for prevention and treatment to viral diarrhea. Methods: Stool specimens were collected from all 1260 children under five years of age suffering from acute diarrhea between December 2006 and November 2007 in Guangzhou Children’s Hospital. TaqMan real-time (RT-) polymerase chain reactions was used for detection of HRV, EAdV, NV and HastV. Further strain characterization of virus positive specimens respectively were carried out with nested (RT-) PCR and sequenced. Results: (1) A total infection was found in 73.25% (923/1260) and at least one viral agent was in 59.26% (547/1260) of the specimens. Shedding of EAdV was detected in 44.21% (557/1260), HRV in 36.43% (459/1260), NV genotype I (NVGI) and II (NVGII) in 6.90% (87/1260) and 16.98% (214/1260) respectively, HastV in 3.33% (42/1260) of the samples analyzed. The rate of mixed infection was 40.74% (376/1260) and the most important one was a combination of EAdV and HRV. Among 557 EAdV positive samples, type 41 (86.94%) was the most predominant strain and type 40 was in 13.06%. HRV detected in serotype G3 of most part and followed by G1, G2, G9. Of 428 NV strains that were cloned and sequenced belonged to GII-4, GI-3, GI-2 and GI-2. Serotype 1 was most commonly seen in HastV while serotype 4 was also detected. (2) EAdV and NVGII sporadically prevailed over the whole year. A peak admission of HRV diarrhea was observed between October to December and the same as NVGII. HastV diarrhea occurred in the whole year but the incidences of July and December were a little higher than other months. (3) During the study, it was observed that 92.56% of the virus positive cases were children less than 2 years. The incidence rate of EAdV was highest in infants aged 9-23 months, almost the same as NVGII. HRV was mostly detected among infants aged 6-17 months, the rate of infection with NVGII and HastV was higher for older children that was in 12-35 months and above 35 months. Conclusion: (1) EAdV was the most important pathogen for acute diarrhea among children in Guangzhou. The predominant strain circulated was type 41. And the positive rate of NV has been rising than before as GII-4 was radically prevailed over the whole year. A peak admission of HRV diarrhea was observed between October to December and the same as NVGII. HastV sporadically prevailed over the whole year but the incidences of July and December were a little higher than other months. (3) More than 92.56% of viral diarrhea occurred among children aged <2 years.

P0514

Title: Chylous Ascites in an Infant with Klippel-Trenaunay-Weber syndrome

So Young Lee ; So Yeon Lee ; Jae Sung Ko ; Jeong Kee Seo ; So Yeon Lee
Department of Pediatrics, Seoul National University, College of Medicine;

Summary:

Introduction: Klippel-Trenaunay-Weber syndrome is a congenital developmental disorder characterized by cutaneous vascular nevi, malformations of capillary, venous, and lymphatic vessels, and bony and soft tissue hypertrophy. If the malformation is predominantly lymphatic, patients develop
Pathologic Protease Activation during In Vivo Pancreatitis is Dependent upon Calcineurin Activation

Sohail Z Husain 1, Alexander J Park 1, Wayne M Grant 1, Zahir M Mannan 1, Ahsan U Shah 1

1) Yale University, New Haven, United States 2) Michigan State University, East Lansing, United States

Summary:
The premature activation of digestive proenzymes, particularly proteases, within the pancreatic acinar cell is an early and critical event during acute pancreatitis. Our previous studies demonstrate that this activation requires a distinct pathologic rise in cytosolic calcium and that a target of aberrant calcium in acinar cells is the calcium-calmodulin dependent phosphatase calcineurin (PP2B). In this study, we examined whether PP2B mediates in vivo protease activation and long term outcomes in pancreatitis. Western blot was performed in isolated pancreatic acinar cells from Swiss-Webster mice and immunofluorescence was performed in pancreatic tissue sections. Pancreatitis was induced in the mice over an 8 period by administering hourly intra-peritoneal injections of the cholecystokinin analog caerulein (50 ug/kg). Activities of the proteases chymotrypsin and trypsin were assayed from pancreatic homogenates at 1 and 8 hours post-pancreatitis induction. Serum amylase, pancreatic edema, and histological severity were measured at 8 hours. Western blot confirmed the presence of PP2B in mouse acinar cells, and by immunofluorescence it localized to the cytosol. Pretreatment of mice with FK506 1 hr prior to pancreatitis induction reduced trypsin and chymotrypsin activities at 1 hour by 40% (P<0.05) and 60% (P<0.05) and at 8 hours by 85% (P<0.05) and 15% (NS), respectively. Serum amylase was reduced by 67% at 8 hours and histo-
 logical pancreatitis score improved. However, pancreatic edema was not altered by FK506 pretreatment. These data suggest that PP2B may be an important target of the aberrant acinar cell calcium rise associated with pathologic pancreatic protease activation and pancreatitis.

P0517

Title:
Presentation and Hospital Course of Children with Acute Pancreatitis: A 12-Year Review

Sohail Z Husain 1, Sahibzada U Latif 2, Dinesh Pashankar 1, Vineet Bhandari 1, Alexander J Park 1
1) Yale University, New Haven, United States 2) Michigan State University, East Lansing, United States

Summary:
Acute pancreatitis is a painful inflammatory condition that appears to be on the increase. Data are limited on how children present, their initial course, and their overall management. For this reason, we conducted a comprehensive characterization of presentation and hospital course at our tertiary care pediatric hospital (Yale-New Haven Children’s) over a 12 yr period from 1994 to 2007. 594 cases of pancreatitis in patients between 0 and 21 yr of age were identified by ICD-9 codes, of which 271 met inclusion criteria. Mean age was 13.1 ± 5.6 yr. The most common clinical features at presentation were abdominal pain (92%, 248), epigastric tenderness (86%, 233), and nausea or vomiting (73%, 199). 69% (186) of cases had all three signs and symptoms, while 5% (15) had none. 83% (224) were associated with serum amylase or lipase levels greater than 3 times the upper limit of normal. Amylase elevations were at a median of 2.17 times the upper limit of normal (interquartile range (IQR), 1.2-4.9), while lipase was at a median of 10.3 times the upper limit of normal (IQR, 3.83-29.3). The highest amylase and lipase levels were seen in the 6 to 10 yr age group. Ultrasound (U/S) was performed twice as often as computed tomography (CT; 67%, 182 vs. 34.5%, 91). Patients who presented only once were more likely to have both U/S and CT than recurrent cases. U/S was performed at a constant rate throughout the age groups, but the CT scan rate dropped by 50% after age 11 yr. 82% of cases (223) were made NPO with only intravenous dextrose. 76% of these (169) transitioned to PO feeding in a median of 2 days (IQR, 1-3). Overall mortality was 1.9% (4). Median length of stay was 5 days (IQR, 3-10). We conclude from these data that the majority of children with acute pancreatitis present with typical clinical features. Serum lipase is more reliably elevated at diagnosis than serum amylase. Radiologic evaluation is most frequently conducted by U/S. The majority of patients are made NPO for 2 days. While the mortality of pancreatitis in children is much lower in children than in adults, the length of hospitalization appears similar. These data may be useful in understanding the way children present with pancreatitis, their baseline management trends, and areas for further study and practice improvement.

P0518

Title:
GASTROPARESIS IN DIABETIC CHILDREN AND NON-DIABETIC SIBLINGS

Stamati Kritas 1, Katy Ramsden 1, Jenny Couper 2, Ross Butler 1, Geoff Davidson 1
1) Women’s & Children’s Hospital, CYWHS, North Adelaide, Australia 2) Division of Paediatrics, The University of Adelaide, Adelaide, Australia

Summary:
OBJECTIVE: It has been established that gastric emptying (GE) of liquids and solids is abnormally slow in 30-50% of adult patients with long standing type 1 or type 2 diabetes. However, in children the prevalence of diabetic gastroparesis as well as the onset of the features associated with gastrointestinal dysfunction and their impact on diabetic control are still not fully understood. The aim of this study was to evaluate liquid and solid GE in diabetic children and their non-diabetic siblings utilising 13C breath testing. METHODS: Diabetic children (n=10) with poor diabetic control (HbA1C>9%) were recruited. Non diabetic siblings (n=9) were also included as healthy controls. All subjects known to have autonomic nervous system or gastrointestinal motility disorders were excluded. After an overnight fast and a baseline sample all diabetic children (mean±SEM; 9.8±1.6yrs) were recruited. Non diabetic siblings (10.4±1.6yrs) underwent a GE liquid breath test by ingesting 200mL full cream milk. On a separate occasion, 6 diabetic children (10.7±2.1yrs) and 6 controls (9.7±1.9yrs) ingested a standard pancake (70gr) for a GE solid breath test. Both meals contained 100mg 13C-octanoate and controls (10.4±1.6yrs) underwent a GE liquid breath test by ingesting 200mL full cream milk. On a separate occasion, 6 diabetic children (10.7±2.1yrs) and 6 controls (9.7±1.9yrs) ingested a standard pancake (70gr) for a GE solid breath test. Both meals contained 100mg 13C-octanoate and breath samples were collected at intervals before and after ingestion of each meal. Breath samples were analysed for 13CO2 content and gastric half emptying times (GEt½) were calculated. All diabetic children were given insulin subcutaneously to maintain blood glucose between 5-10mmol/l during breath testing. GEt½ were compared to age and sex matched paediatric reference values to determine normal or delayed GE. RESULTS: Sixty percent of the diabetic children and 89% of the healthy controls (non-diabetic siblings) had a delayed liquid GE when compared to the healthy reference values. Furthermore, 30% of the diabetic children and 16% of the control subjects (non-diabetic siblings) had a delayed solid GE when compared to the healthy reference values. The GEt½ of diabetic children was not significantly different to the non-diabetic siblings for either liquid (65.7±12.6min vs 96.5±13.6min) or solid meal (93.0±6.3min vs 84.8±10.9min). CONCLUSION: Delayed GE was found in a high proportion of diabetic children with poor glycemic control. The role of gastroparesis in symptom association and diabetic management should be further explored. In addition, delayed GE was also observed in a high proportion of non-diabetic siblings possibly suggesting an underlying genetic predisposition for abnormal gastric function.
Title: Fecal calprotectin (MRP8/14) as screening marker of inflammation in gastrointestinal tract in children

Stanisław Pieczarkowski 1, Małgorzata Sladek 1, Przemysław Tomaski 2, Przemko Kwinta 3, Andrzej Wendrychowicz 1, Krzysztof Fyderek 1
1) Department of Paediatrics, Gastroenterology and Nutrition, Faculty of Medicine, Jagiellonian University, Cracow, Poland 2) Department of Clinical Biochemistry, Cracow, Poland 3) Department of Paediatrics, Cracow, Poland

Summary:

Introduction: Calprotectin (MRP8/14) measured in stool is a good indicator of inflammatory processes localized in the gut. The aim of the study was to assess usefulness of calprotectin as diagnostic tool which can distinguish between organic or functional gastrointestinal disorders. Methods/Results: Study was done in 94 patients (39 boys, 55 girls mean age 11.7 years, SD± 4.06 years). Patients enrolled into the study were divided in 4 groups. Group 1 – control with 22 healthy children, group 2-14 children with functional disorders (fulfilled Rome III criteria), group 3- 29 children with organic disorders (H.pylori infection, esophagitis, duodenitis, pancreatitis and others) and group 4- 29 children with exacerbation or newly diagnosed inflammatory bowel diseases (IBD). Calprotectin was compared with CRP (C-reactive protein) values in serum. Results: (table) * p<0.0001 for Kruskal-Wallis test for variable CALPROTECTIN, ** p=0.0042 for Kruskal-Wallis test for variable CRP, Discussion / Conclusion: Fecal Calprotectin assessment is valuable method in differential diagnosis between functional and organic gastrointestinal disorders, with the highest values in IBD patients. Calprotectin concentration in stool could be a very valuable indicator of inflammatory processes of the gut and could be a very good screening marker in diagnostics of functional abdominal pain in children.

<table>
<thead>
<tr>
<th>GROUP</th>
<th>CALPROTECTIN Mean values (mg/kg of stool)</th>
<th>CRP Mean values (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-CONTROL 25.95</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2-FUNCTIONAL 30.06 3.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-ORGANIC 197.11 5.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-IBD 1308.44 9.73</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Title: PEDIATRIC PERSPECTIVES ON PATENCY: THE AGILE PATENCY CAPSULE (AC) DURING A PROSPECTIVE EVALUATION OF PEDIATRIC CROHN’S DISEASE (CD) WITH CAPSULE ENDOSCOPY (CE)

Stanley A Cohen 1, Ian Gralnek 3, Tamara Gobin 2, Angela Stallworth 2, Cathy Simms 2, Hagit Ephrath 4
1) Children’s Center for Digestive Health Care, Children’s Healthcare of Atlanta, Atlanta, Georgia, USA 2) Children’s Center for Digestive Health Care, Atlanta, Georgia, USA 3) Rambam Health Care Campus, Technion Institute, Haifa, Israel 4) Given Imaging, Yoqneam, Israel

Summary:

CE retention remains a concern in patients with CD. We previously reported our experience with an earlier iteration of a patency capsule. This report reviews the first pediatric results with the revised AC. Methods: The dissolvable AC, the same size as the Small Bowel CE capsule, contains a radio-frequency identification (RFID) tag. Dual timer plugs erode and allow dissolution of the body so the remaining fragments of the AC can pass even small orifices. The AC can be located by x-ray or RFID reading device. A single center, prospective study evaluating the impact of CE on CD management used AC to screen patients (pts) for inclusion. Those passing the AC < 40 hours were able to undergo CE within the study. Passed ACs were inspected for capsule integrity. Results: 18 pts (10-16 y, 9 M) ingested the AC. 8 had known CD; 10 had suspected CD. 5 in the first group and 7 in the second excreted the AC within 40H (mean 28.5H) and proceeded with CE. 1 pt with suspected CD excreted the AC intact at 48 H and was included in the study; 3 with suspected CD passed the capsule at 49-57.5H and underwent CE independent of the study, without difficulty. Of the 17 returned AC, 15 were intact. The mean time of passage for the intact AC was 34.7H; the longest time for passage of an intact AC was 60H. The shortest time for partial disintegration was 38H. 6 pts underwent radiological evaluation prior to AC evaluation, 5 were normal. No significant difference in duration of disease, Hgb, ESR, or albumin distinguished those who passed the AC in < 40H from those who did not. However, the pts passing the capsule < 40 H were younger than those > 40H (12.6y ± 1.9 v 14.8y ± 1.8, p= 0.035). Physician global assessment suggested moderate disease activity in 8/12 passing < 40H vs 4/6 who did not. CD was eventually diagnosed in all with prolonged AC transit, whereas CD was the diagnosis in 6/12 in < 40 H; two were non IBD, and 4 had IC or UC. None of the pts had prolonged retention or adverse effects. 2 pts subsequently had CD that did not enter the cecum. They had prolonged gastric passage despite AC transit < 40H. Physician post-CE evaluation indicated that CE aided diagnosis and/or treatment in 9 (50%) of the pts. Conclusion: Evaluation with AC may be useful in CD where potential retention of the CE capsule is a concern. Radiographic studies may not be necessary, Additional studies may show broader applicability and further define the usefulness of AC and
P0521

Title: VSL#3 improves symptoms in children with irritable bowel syndrome. Results of an international, randomized, placebo-controlled, double-blinded, cross-over study.

Stefano Guandalini; Giuseppe Magazzù; Salvatore Cucchiara; Sarath Gopalan; Claudio Romano; Mala Setty; University of Chicago; Universita' di Messina; Universita' di Roma La Sapienza; CRNSS; Universita' di Napoli Federico II; Universita’ di Firenze; Chicago, IL; Messina; Roma; New Delhi; Naples; Florence;

Summary:
Background. Irritable bowel syndrome (IBS) is an extremely common problem in pediatrics, for which no safe and effective treatment is available. Probiotics have shown some promising results in adult studies, but no positive study has been published in pediatric age. Aim. We investigated the efficacy of VSL#3 in a population of children and teenagers affected by IBS, defined according to the Rome II criteria, in a randomized, double-blinded, placebo-controlled, cross-over multicenter study conducted in 7 pediatric gastroenterology divisions located in Chicago, IL (USA); Messina (2 pediatric units), Rome, Naples and Florence, Italy; and New Delhi, India. Methods. Children of 4 to 18 years of age meeting eligibility criteria were enrolled. The patients were assessed by a questionnaire for a 2 week baseline period. They were then randomized to receive either VSL#3 450 billion lyophilized bacteria (once a day for children 4-11 years of age, twice a day for 12-18 years old); or an identical looking and tasting placebo for 6 weeks, with controls every 2 weeks. At the end of the 6 weeks, after a "wash-out" period of 2 weeks, each patient was switched to the other group and followed likewise for further 6 weeks. Primary endpoint: improvement in the subject’s global assessment of relief (SGARC). Secondary endpoints: improvements in: abdominal pain/discomfort; bloating/gassiness; stool pattern. Results. A total of 59 children completed the study, mean age 12.5 yrs. (5-18), 24 females. VSL#3 resulted in a statistically significant improvement in the primary endpoint (SGARC) as well as in 3 out of 4 secondary endpoints. SGARC: VSL#3: from 4.0 at baseline to 2.3 after 6 weeks, p<0.001; placebo: from 4.0 at baseline to 3.3, NS. Abdominal pain/discomfort: VSL#3: 2.6 at baseline to 1.2 after 6 weeks, p<0.001; placebo from 2.1 to 1.6, NS. Abdominal bloating/gassiness: VSL#3: from 2.9 to 1.1, after 6 weeks, p<0.001; placebo: 2.2 to 1.5, p<0.05; comparison between VSL#3 and placebo effects: VSL#3 more effective, p<0.0001. For the last parameter, stool pattern: both VSL#3 and placebo were significantly effective: 2.8 to 1.2 for VSL#3, p<0.001; 2.2 to 1.3 for placebo, p<0.001; difference in effectiveness between VSL#3 and placebo: NS. No untoward side effect was recorded in any of the patients. Conclusions. We conclude that VSL#3 is safe and effective in ameliorating symptoms and quality of life (as judged by the SGARC index) in children affected by IBS.

P0522

Title: Norovirus infection in children hospitalized with acute gastroenteritis

Su Jin Jeong 1
1) College of Medicine, Pochon CHA University Bundang CHA General Hospital, Kyonggi-do, Korea

Summary:
Objective : To investigate the feature of norovirus infection in hospitalized children. Patients and Methods: Of 100 children under 5years who were hospitalized with acute gastroenteritis in Bundang-Cha hospital between July 2006 and June 2007 tested positive for norovirus by RT-PCR. Results: In total noroviruses were found in 16%(16/100) of children included in the study. Norovirus infection manifested as vomiting(94% of all cases), diarrhea (81%), and fever(68%). Repeated vomiting (>4 times/day) has been common for norovirus infected children. One of them complained of hematemesis. A 15-month old female patient suspected to meningitis due to febrile convulsion with vomiting was confirmed norovirus infection. Seasonal peak of norovirus infection was seen in February through May. Of children with viral enteritis, 9.3% had a mixed norovirus-rotavirus infection. Duration of diarrhea was longer for co-infection than for only norovirus infection. Conclusion : Norovirus - associated enteritis is characterized by the sudden onset of vomiting and watery diarrhea, accompanied by several unspecific symptoms, e.g. abdominal pain, hematemesis, febrile convulsion. With few exception, disease due to noroviruses are self-limited and the illness duration is restricted to a few days. Our results support important role of noroviruses as a causing agent of gastroenteritis in children.

P0523

Title: Efficacy and Safety of Polyethylene Glycol 4000 for Disimpaction in Children with Chronic Functional Constipation at Outpatient Clinic

Sun Hwan Bae 1, Jeong Hee Lee 1

Summary: Objective: To investigate the feature of norovirus infection in hospitalized children. Patients and Methods: Of 100 children under 5years who were hospitalized with acute gastroenteritis in Bundang-Cha hospital between July 2006 and June 2007 tested positive for norovirus by RT-PCR. Results: In total noroviruses were found in 16%(16/100) of children included in the study. Norovirus infection manifested as vomiting(94% of all cases), diarrhea (81%), and fever(68%). Repeated vomiting (>4 times/day) has been common for norovirus infected children. One of them complained of hematemesis. A 15-month old female patient suspected to meningitis due to febrile convulsion with vomiting was confirmed norovirus infection. Seasonal peak of norovirus infection was seen in February through May. Of children with viral enteritis, 9.3% had a mixed norovirus-rotavirus infection. Duration of diarrhea was longer for co-infection than for only norovirus infection. Conclusion : Norovirus - associated enteritis is characterized by the sudden onset of vomiting and watery diarrhea, accompanied by several unspecific symptoms, e.g. abdominal pain, hematemesis, febrile convulsion. With few exception, disease due to noroviruses are self-limited and the illness duration is restricted to a few days. Our results support important role of noroviruses as a causing agent of gastroenteritis in children.
Summary:
Object: To evaluate the effect of fluid intake on the outcome of treatment with osmotic laxatives in children with chronic functional constipation.
Methods: In this trial, 32 children out of hundreds with chronic functional constipation satisfying the following criteria were enrolled: (1) on a stable maintenance dosage of treatment medication; (2) no dosage modification or drug change occurred between the two periods compared; (3) no clinical events occurred during the investigation that could affect oral intake of food and medication or the clinical outcomes; (4) compliance with diaries including the frequency of bowel movements, the consistency of stools, the ease of defecation, and the amount of fluid intake; (5) each diary included more than 25 days and each period was within three months of each other. A scoring system was developed. For bowel movements, 1 point for more than one bowel movement per day, for stool consistency, 1 point for soft or watery stools, 0.5 points for stools of normal consistency and 0 points for hard stools. The scores in the two categories of defecation were converted into points per 30 days. The scores during a period of each defecation diary were converted into points per 30 days.
Results: Eighty three out of 86 children completed the study, and success rate of disimpaction was 99% (82/83). The mean dose of PEG 4000 for disimpaction was 0.93±0.28 g/kg/day (0.4-2.0 g/kg/day, Max.: 30 g/day). Frequency of bowel movement increased (5.02±2.71/wk vs 11.25±5.43/wk) in most children (79/83). Fecal impaction on simple abdominal X-ray test improved with statistical significance in 25 children (P = 0.0007). Because of adverse effect of PEG 4000, 3 children did not completed the study; urticaria, severe diarrhea, diarrhea and abdominal pain. one 6-year-old girl who completed the study complained tingling sensation in the hand and foot without laboratory abnormality (4/86, 4.7%). Laboratory test revealed hyperosmolarity without clinical symptom in 1 child, eosinophilia in 6 children. Conclusions: The average safe and effective dose of PEG 4000 for disimpaction at outpatient clinic was 0.93±0.28 g/kg/day (0.4-2.0 g/kg/day, Max.: 30 g/day) in children with chronic functional constipation.

P0524

Title: Evaluation of the Rectoanal Function in Children Using Profilometry and Conventional Rectoanal Manometry
Sun Hwan Bae 1, Jeong Kee seo 2, Kwi Won Park 3
1) Department of Pediatrics, Konkuk University Hospital, Seoul, South Korea 2) Department of Pediatrics, Seoul National University Children’s Hospital, Seoul, South Korea 3) Department of Surgery, Seoul National University Children’s Hospital, Seoul, South Korea

Summary:
Object: to evaluate and to compare the subjective and the objective rectoanal functions in children with functional chronic constipation and those in children who had undertaken Duhamel operation under the diagnosis of Hirschsprung’s disease about 5-10 years ago. Methods: 11 children(4-15 years old) with functional chronic constipation, and 8 children(5-12 years old) with Duhamel operation at Seoul National University Children’s Hospital were enrolled in this study. Conventional rectoanal manometry and 3-dimensional, eight-channel radial rectoanal manometry(profilometry) were performed at rest and at squeeze under the protocol on station pull through(SPT) and rapid pull through(RPT) methods. Results: No significant difference was found between two groups in the aspects of multiple parameters for the rectoanal functions of conventional rectoanal manometric test, such as maximal anal resting pressure, volume of fullness, maximal tolerable volume, voluntary contraction pressure, squeezing pressure, threshold of RAIR, and volume of constant relaxation. Profilometry revealed that the resting vector volume(15,812.2±14,591.0), length of high pressure zone at rest(13.3±3.3 vs. 18.3±3.4), and maximal resting pressure at rest(64.2±33.0 vs. 103.4±23.4) were lowerer in children with Duhamel operation than those in children with functional chronic constipation by RPT method(P<0.05). The column of percent difference(224.5% vs. 276.1%) and Maximal pressure difference(42.9% vs. 100.1%) were higher in children with Duhamel operation than those in children with functional chronic constipation by RPT method. All data were collected and analyzed by the computer software; polygram lower GI version 6.4. Conclusion: in addition to conventional balloon rectoanal manometry, profilometry was invaluable for evaluating the difference in the rectoanal function of children with functional chronic constipation and of children with Duhamel operation.

P0525

Title: Fluid intake has different effect on the outcome of treatment of chronic constipation in children : PEG 4000 versus lactulose
Sun Hwan Bae 1
1) department of Pediatrics, Konkuk university hospita, Seoul, South Korea

Summary
Object: To evaluate optimal dose for disimpaction, efficacy and safety of PEG 4000 in children with chronic functional constipation at outpatient clinic. Methods: Eight six children with chronic functional constipation were enrolled in this prospective study at Konkuk university hospital March, 2003 through August, 2006. Success in disimpaction with PEG 4000 was defined as meeting at least two out of three criteria; resolution of chief complaint, getting easiness of defecation with respect to frequency of bowel movement and hardness of stool based on defecation diary, and decrease in fecal impaction on simple abdominal X-ray test. Adverse effects of PEG 4000 were monitored clinically and biochemically. Results: Eighty three out of 86 children completed the study, and success rate of disimpaction was 99% (82/83). The mean dose of PEG 4000 for disimpaction was 0.93±0.28 g/kg/day (0.4-2.0 g/kg/day, Max.: 30 g/day). Frequency of bowel movement increased (5.02±2.71/wk vs 11.25±5.43/wk) in most children (79/83). Fecal impaction on simple abdominal X-ray test improved with statistical significance in 25 children (P = 0.0007). Because of adverse effect of PEG 4000, 3 children did not completed the study; urticaria, severe diarrhea, diarrhea and abdominal pain. one 6-year-old girl who completed the study complained tingling sensation in the hand and foot without laboratory abnormality (4/86, 4.7%). Laboratory test revealed hyperosmolarity without clinical symptom in 1 child, eosinophilia in 6 children. Conclusions: The average safe and effective dose of PEG 4000 for disimpaction at outpatient clinic was 0.93±0.28 g/kg/day (0.4-2.0 g/kg/day, Max.: 30 g/day) in children with chronic functional constipation.
good fluid intake were compared to those during a period of poor fluid intake, for the same patient. The Wilcoxon signed-rank test was used for the analysis. Results: With PEG 4000 (N=14), for bowel movements, the score for good fluid intake was 26.23±3.60, while the score for poor fluid intake was 24.67±4.07 (P=0.009). For stool consistency, the score for good fluid intake was 19.74±5.62, while the score for poor fluid intake was 15.63±3.59 (P=0.002). With lactulose syrup (N=13), there was no statistical difference with respect to three categories of defecation. Conclusions: increasing fluid intake positively affected the outcome of treatment with PEG 4000, but not with lactulose in children with chronic functional constipation. This result may explain the potential difference in clinical efficacy between PEG 4000 and lactulose.

**P0526**

**Title:**
**Maintenance Dose of Polyethylene glycol 4000 in Korean Children with Chronic Functional Constipation**

Sun Hwan Bae 1, So Hee Lee 1  
1) Department of Pediatrics, Konkuk university hospita, Seoul, South korea

**Summary:**
Object: To determine optimal maintenance dose and to evaluation the efficacy and safety of polyethylene glycol 4000 (PEG 4000) in children with chronic functional constipation in Korean children. Methods: This study enrolled 41 children with chronic functional constipation at the Konkuk university hospital August 2005, then June, 2007. Effective maintenance dose was defined as initial amount of PEG4000 that improved defecation difficulty, frequency, and stool consistency for more than 2 months. Clinical outcome was analysed on the basis of defecation diary. Adverse effect was monitored clinically and biochemically. Results: As a whole group effective maintenance dose of PEG 4000 was 0.55±0.16 g/kg/day (0.25-0.86). With respect to age, 3-5 years (0.60±0.15), 6-8 years (0.57±0.16), 9-13 years (0.44±0.14) (P=0.024). With respect to body weight, < 30 kg (0.62±0.14), ≥ 30 kg (0.41±0.10) (P=0.001). One child complained epigastric soreness on fasting medication. Laboratory monitoring was normal in 12 children. Conclusion: PEG 4000 is effective and safe in children with chronic constipation. Initial maintenance dose of PEG4000 was 0.55 g/kg/day. This could be modified with respect with age and body weight.

**P0527**

**Title:**
**Rotavirus gastroenteritis in children**

Tamara Marcovici 1, Ioan Sabau 1, Ioan Simedrea 1, Elena Filip 2, Oana Belei 1, Marinela Lesovici 2  
1) University of Medicine and Pharmacy “Victor Babes”, Timisoara, Romania 2) “Louis Turcanu” Children’s Emergency Hospital, Timisoara, Romania

**Summary:**
Introduction: Rotavirus is the leading cause of infectious diarrhea in young children. It causes significant morbidity, being most common in winter months in temperate climates. The risk of food allergies, intolerance to lactose and malnutrition is increased in infected children. The goals in rotavirus gastroenteritis therapy are avoiding and treatment of dehydration and maintaining patient’s nutritional status. Objectives: Evaluating the cases with rotavirus gastroenteritis by epidemiologic, clinical and biologic criteria and treatment assessment. Methods: We present 27 children diagnosed in our department with rotavirus gastroenteritis during a 6 months period from October 2007 to March 2008. A comprehensive evaluation of cases was done: history of illness, physical examination, laboratory tests. Diagnosis was made by identification of the rotavirus antigen in stool samples by latex agglutination assay. Results: The patients (15 males, 12 females) were aged between 3 months to 5 years, 15 cases (55%) being under 2 years of age. The seasonal peak in incidence was from January to March (18 cases, 66%). The most common clinical characteristics were watery diarrhea in all patients, moderate and high fever (89%), vomiting in 21 patients (77%), mild to moderate dehydration in 19 patients (70%) and rino/orrhea. Patients with developmental problems (prematurity, malnutrition, iron deficiency anemia) and those from disadvantaged socioeconomic backgrounds experienced a moderate prolonged illness. Medium period of hospitalization was 5 days. Fecal occult blood was positive in one patient. Stool cultures revealed no concomitant bacterial infection. Leukocyte counts were normal in 55% of patients. A mild rise in aminotransferase serum level proved hepatic involvement in 8 patients. Rehydration with intravenous fluids was necessary in 77% of patients. Diet was used in all cases and two third of patients have received lactose-free formula for several days. All patients recovered from the diarrheal illness on follow-up. Conclusions: Early diagnosis of rotavirus gastroenteritis is important for a good outcome and to prevent nosocomial infection among hospitalized patients. Routine vaccination against rotavirus would substantially reduce this morbidity among children.

**P0528**

**Title:**
**Search for virulence factors among fecal Escherichia coli isolates from Brazilian children with and without diarrhea**
Tamara B Souza 1, Ulysses Fagundes-Neto 1, Isabel C A Scaletsky 1
1) UNIFESP, São Paulo, Brazil

Summary:
Introduction. Diarrheagenic Escherichia coli (DEC) strains are classified into six different pathotypes: enteroaggregative E. coli (EAEC), diffusely adherent E. coli (DAEC), enteroinvasive E. coli (EIEC), enteropathogenic E. coli (EPEC), enterohemorrhagic E. coli (EHEC), and enterotoxigenic E. coli (ETEC). Serotyping, screening for virulence factors, and adherence to cultured epithelial cells comprise the main laboratorial diagnosis tool for diarrhea caused by DEC. Objective. A total of 1,428 E. coli isolates obtained from 338 children with diarrhea and 322 matched controls were tested for HEp-2 adhesion and DNA probes in order to classify them into the different pathotypes. Of the 660 fecal specimens analyzed, 373 (199 from patients and 174 from controls) carried E. coli isolates, which did not present any virulence characteristics of DEC strains. In the present study, these E. coli were examined for the presence of genetic sequences related with virulence factors. Methods. A total of 785 E. coli strains (419 from patients and 366 from controls) were tested for the presence of 15 virulence genes by colony hybridization with DNA probes obtained by PCR amplifications from prototype strains. Results. Hybridization with 6 of the 15 sequences tested was detected among the strains; aer (aerobactin) (36.7%) and iha (IrgA homologous adhesin) (35.6%) were the most frequent. In addition, 34.3% of strains possessed genes encoding the EAST1 toxin (astA), 11% of strains carried the Shigella enterotoxin 1 (shET1) or the α-hemolysin (hl) and 7.8% of strains had the pet (plasmid-encoded toxin) sequences, virulence factors found frequently in EAEC strains. All of these genes were detected more frequently in strains from patients than from control subjects, but the difference was not statistically significant (P > 0.05). None of the strains hybridized with the cdt, cnf, espC, sfa, pap, afa, aggA, aafA, and agg3 probes. Conclusion. Certain fecal E. coli strains may carry DEC virulence properties, mostly associated to the EAEC pathotype. This finding raises the possibility that at least some fecal E. coli strains might represent potential enteropathogens.

P0529

Title:
INCIDENCE OF GASTROESOPHAGEAL REFLUX DISEASE IN CHILDREN UNDER TWO YEARS IN BURSA

Tanju B Ozkan 1, Cenk Goker 2, Gulin Erdemir 1, Emel Irgil 3, Eray Alper 4
1) Uludag University Medical Faculty, Department of Pediatric Gastroenterology, Hepatology and Nutrition, Bursa, Turkey 2) Uludag University Medical Faculty, Department of Pediatrics, Bursa, Turkey 3) Uludag University Medical Faculty, Department of Public Health, Bursa, Turkey 4) Uludag University Medical Faculty, Department of Nuclear Medicine, Bursa, Turkey

Summary:
Objective: The aim of this study is to determine the incidence of gastro esophageal reflux disease(GERD) in children between 2months and 2 years by using radionuclide scintigraphy and 24-hour esophageal pH monitoring. Method: The study conducted between July 2005 and December 2006 in Nilufer region of Bursa-Turkey. A questionnaire form was prepared asking the occurrence, frequency and severity of reflux symptoms. By using the Uludağ University Public Health Department’s records, children between 2 months and 2 years were determined and home visits were made. Mothers/caregivers asked to fill out the questionnaire form and a written informed consent obtained individually. After the analysis of questionnaire forms, children having GERD symptoms called for a hospital visit for detailed physical examination, and diagnostic studies (radionuclide scintigraphy and 24 hour pH monitoring). Results: Five hundred sixty-five children, 290 girls (51%) and 275 boys (49%) enrolled the study. The mean age of the group was 14.5 months (2-28 mo) and the mean weight was 10.1 kg (3.5-16.5 kg). Eight percent of children were breast-fed only and 92% were not been diagnosed as GERD before. Family history of GERD found in 39%. The frequencies of common symptoms were; cough (35%), vomiting (25%) and weight loss (19.5%). Forty-one children with clinically suspected GERD underwent further investigation: radionuclide scintigraphy and 24 hour pH monitoring. While Ph monitorisation demonstrated GERD in 31 children (75%), scintigraphic reflex observed in 27 children (68%). Conclusion: According to the results of our local surveillance study, the incidence of GERD in children under 2 years was 7.3%. This result is concordant to the literature.

P0530

Title:
Selective leukocyte apheresis as a maintenance therapy in paediatric IBD

Tarja Ruuska 1, Y Sutas 1, M Ashorn 1, M Kalliomäki 2, M-L Lähdeaho 1, J Grönlund 1
1) Tampere University Hospital, Tampere, Finland 2) Turku University Hospital, Turku, Finland

Summary:
Granulocyte, monocyte adsorption apheresis (GMA) is a new promising treatment of IBD. As corticosteroid dependency and relapses are common, we wanted to evaluate the efficacy of GMA treatment as a maintenance therapy in pediatric IBD. Methods: Six children with ulcerative colitis...
(UC) (age 8-17y) and 7 children with Crohn's disease (CD) (age 11-17y) with initial response to GMA were selected to receive maintenance treatment once per month for 5-18 months. 6 children with UC and 3 with CD, who had also initially responded to the treatment, served as disease controls remaining on their current medications. There was no difference in the severity or the distribution of the disease between control and treatment groups. Results: Of UC patients 4/6 in control group relapsed during the first 6 months (5 wks-6 months), one 1.5y later and 1 one was lost from control after 7 months. In maintenance group 1 relapsed at 6 months, got a new apheresis treatment and continues with maintenance therapy; 2 had maintenance therapy for 5 months and are still in remission after follow-up of 8 and 12 months. 2 patients have been on maintenance therapy for 12 months and one 18 months and they are in remission (p=0.04 between treatment and control groups; Fishers exact test). In Crohn's group the three controls had relapses 5, 10 and 16 wks after treatment. In maintenance group 1 had relapse 3 months after the commencement of maintenance therapy, one after 4 months and one after 5 months. Three children had maintenance treatment for 6 months without relapses, but when treatment was stopped all relapsed within 3 months. One child has been on maintenance therapy for 10 months and is in remission (p=ns). Conclusion: Granulocyte, monocyte adsorption apheresis seems to postpone and protect from relapses in pediatric IBD, 1/6 relapsed during the follow up in UC maintenance group vs 5/6 in control group. In Crohn's group the respective numbers were 3/7 in treatment group and 3/3 in control group. More research is needed to find the patients who benefit most of the therapy, to evaluate the optimal time interval and the length of maintenance treatment.

P0531

Title: Increased Prevalence of Gastroesophageal Reflux Disease (GERD) and GERD-Related Complications in Hospitalized U.S. Children

Tejas R. Mehta, MD 1, Troy E. Gibbons, MD 2, Jana A. Stockwell, MD 1, Traci Leong, MPH 1, Seton McRae, BIE 3, Benjamin D. Gold, MD 1
1) Emory University School of Medicine, Department of Pediatrics, Atlanta, USA 2) University of Arkansas for Medical Sciences, Department of Pediatrics, Little Rock, USA 3) Children’s Healthcare of Atlanta, Atlanta, USA

Summary:
Objective: Gastroesophageal reflux disease (GERD) in children results in a range of esophageal and extra-esophageal manifestations. Many adult studies over the past 10 years showed a higher prevalence of GERD and its sequelae. Reproducible standards for diagnosis and management of pediatric GERD and population based epidemiology studies are lacking. Our objective was to characterize the epidemiology of GERD in hospitalized U.S. children. Methods: We employed the Pediatric Hospital Information Survey database encompassing initially 32 and now 46 participating children’s hospitals in the U.S. We analyzed clinical and financial data of hospitalized children from 1995-1999 and 2002-2006. ICD-9 codes for esophageal reflux and esophageal complications were used for data queries. Collected data characteristics included: age, gender, race, and discharges/year. Discharge rates were calculated per 10,000 hospital discharges. Results: There were 1,848,349 hospital discharges from 1995-1999 and 2,128,205 from 2002-2006. Over the 2 time periods, the number of discharges where GERD was a principal or secondary discharge diagnosis increased (64,815 to 91,641). Overall, there was a rise in GERD as a principal or secondary discharge diagnosis from 2002 (366.8/10,000) to 2006 (446.9/10,000), p<0.0001. However, there was a decrease in GERD as only a principal diagnosis from 2002 (76.9/10,000) to 2006 (52.1/10,000), p<0.0001. The hospital discharge ratio of male:female for both time periods was the same at 1.27:1. Between 1995 and 1999, there were 2 cases of esophageal adenocarcinoma. Between 2002 and 2006, there were 6 cases of esophageal adenocarcinoma and 56 cases of Barrett’s esophagus. The rate of fundoplications performed decreased significantly from 2002 (71.3/10,000) to 2006 (55.3/10,000), p<0.0001. The hospital discharge ratio of male:female for both time periods was the same at 1.27:1. Between 1995 and 1999, there were 2 cases of esophageal adenocarcinoma. Between 2002 and 2006, there were 6 cases of esophageal adenocarcinoma and 56 cases of Barrett’s esophagus. The rate of fundoplications performed decreased significantly from 2002 (71.3/10,000) to 2006 (55.3/10,000), p<0.0001. Conclusion: Overall, a substantial rise in hospitalizations for the complications of GERD was seen over the 10 years studied. From 2002-2006, the rate of discharges with a principal or secondary diagnosis of GERD increased, while rate of discharges with GERD as only a principal diagnosis decreased. This contrasts a significant rise in GERD as a primary diagnosis from 1995-1999. Also, there is higher prevalence of esophageal cancer, but decreased surgical management of GERD. Based on these observations, there appears to be an overall increasing prevalence and hospitalization rate, and thus, greater healthcare burden of GERD and its complications in U.S. children.

P0532

Title: Elevated Fecal Calprotectin does not Predict Response to Hypoallergenic Formula in Clinically Diagnosed Allergic Enteropathy

Nagendra Natarajan MD 3, Fernando Zapata MD 1, Christine Reyes MD 2, Thomas M Attard MD 1
1) University of Nebraska Medical Center, Omaha, USA 2) Children’s Memorial hospital, Omaha, USA 3) Creighton University School of Medicine, Omaha, USA

Summary:
Background: Fecal calprotectin (FC) is a sensitive assay of colon inflammatory and other pathologic processes. Although calprotectin is predomi-
nant a neutrophilic intracytoplasmic protein, FC levels have been reported as elevated in the normal newborn and in infants with allergic enterocolitis. We have demonstrated increased CF in children older than 6 months with histologically proven colitis compared with children with normal biopsies on colonoscopy. Herein we studied the correlation between FC at diagnosis with response to hypoallergenic formula change in children presenting with diarrhea and clinically diagnosed allergic enterocolitis. Methods: We have prospectively tracked all patients undergoing FC assay at our institution, we conducted a retrospective chart review of all patients with FC assayed and clinically diagnosed allergic enterocolitis presenting with diarrhea and who underwent transition to hypoallergenic (hydrolysate or elemental) formula. Individuals with positive stool cultures were excluded. Symptoms were recorded as resolved, improved or persistent at one month follow up. Results: 17 patients (10 M) with a mean age of 23 months were included in the study; there were no statistically significant differences in demographics between responders (11) and non-responders (6). All responders had complete resolution of their symptoms including hematochezia (2) upon follow-up. In 2 responders and 1 non-responders diagnosis was corroborated with histopathological evidence of colitis with FC below 200 mcg/g. Discussion: FC is established as a reliable assay of intestinal inflammatory processes in a variety of contexts, its use in the diagnosis of allergic enterocolitis in children remains unproven. Our study is limited by sample size and the absence of histopathologically established diagnosis. Our population exhibited a high mean FC independent of response to hypoallergenic formula; this may represent inclusion of individuals with undiagnosed chronic non-allergic inflammatory states. Further studies will be needed to prospectively correlate FC with clinically and endoscopically histologically confirmed allergic enterocolitis.

**P0533**

**Title:** Fecal Calprotectin Correlates with the Endoscopic-Histopathologic Diagnosis of Colitis in Children Under 5 Years of Age

Crystal Knight MD 1, Kristin D Peterson RN 1, Fernando Zapata 1, LeAnne Vitito LPRN 1, Chris Reyes MD 2, Thomas M Attard 1
1) University of Nebraska, Omaha, US 2) Children’s Memorial Hospital, Omaha, US

**Summary:**

Introduction: Fecal calprotectin (FC), a leukocyte-cytosolic, calcium-binding protein is a noninvasive and highly specific assay useful in distinguishing between organic-inflammatory and functional gastrointestinal disorders. The initial assay reported norms in adults (<50 mcg/g) and although several reports have questioned the specificity of FC assay in children, the same norms have been shown to be applicable in 4-17 year old children. Herein we correlated colonoscopic-histopathologic evidence of colitis with FC in children 4 years old and younger. Methods: We prospectively recorded all patients followed through our clinic undergoing FC estimation (Genova Diagnostics) from 2006 – 2007. We identified patients studied by FC and who subsequently underwent flexible sigmoidoscopy / colonoscopy and recorded the findings as normal or showing mild, moderate or severe inflammatory changes. Patients with culture positive colitis, and patients with FC assay more than 6 weeks after endoscopy were excluded from the study. Results: We identified 33 eligible patients (23 M), with 2 patients having 2 sets of FC - biopsy within the study time frame. Their mean age was 17.5 months (SD 15); 19 (54%) had evidence of colitis predominant amongst which were acute and chronic eosinophilic, and lymphocytic-plasmacytoid infiltrate. Mean (SD) FC in children less than 6 months was 273 (220) mcg/g with poor discrimination between normal and abnormal histology on endoscopy. The correlation between abnormal histology and elevated FC was very significant in the population older than 6 months of age with a two sided P value = 0.0031, a positive and negative predictive value of 0.82 and 0.85 respectively. Discrimination was best between FC concentration in patients with moderate-severe compared to normal histology (Fig. 1). Conclusion: Fecal Calprotectin has previously been shown to be a useful marker of bowel inflammation; its use in younger children has been disputed limiting its applicability in (infantile) allergic and toddler’s diarrhea. Herein we have demonstrated a close correlation between FC and histopathologically proven colitis in children older than 6 months. FC is elevated in eosinophilic - allergic enteropathy in children and its concentration correlates with the severity of colitis noted on biopsy. Adult norms appear applicable in this population, however its use in children less than 6 months old is unsupported because of higher normal levels.

**P0534**

**Title:** Fecal Calprotectin Elevation in a Child with Juvenile Polyp
Functional dyspepsia as a cause of chronic abdominal pain

Trini Fragoso 1, Dency Rivas 1, María Elena Trujillo 2, Rebeca Milan 1, Beatriz Purón 1
1) Department of Gastroenterology and Nutrition, Pedro Borbás Astorga Children’s University Hospital, La Habana, CUBA 2) Department of Gastroenterology and Nutrition, Juan Manuel Márquez Children’s University Hospital, La Habana, CUBA

Summary:
Calprotectin is a predominantly neutrophilic cytoplasmic protein with calcium binding and antimicrobial properties. Fecal calprotectin is a reliable, noninvasive and cost-effective modality to assess for the presence of intestinal inflammatory and other organic disease. Recent studies have shown fecal calprotectin is elevated in adults with colorectal polyps. Elevated fecal calprotectin has not been reported with Juvenile Polyps. Our patient was a 3 year old caucasian female who presented with recurrent, longstanding, poorly characterized abdominal pain unrelated to food. There was no change in bowel habit, diarrhea or hematochezia. Physical examination was normal and initial screening laboratory investigations included a normal complete blood count and urinalysis. One out of three stool hemocults was positive. A stool calprotectin ELISA (Genova Diagnostics) obtained at the time of presentation was markedly elevated (>2500ug/g; ref. range 0-10) therefore the child underwent esophagogastroduodenoscopy and colonoscopy because of the concern of (allergic) colitis. During endoscopy a large, ie. 3 x 2.7cms, pedunculated polyp was noted at the hepatic flexure and was snared and removed. Prominent chicken-skin mucosa was noted around the polyp. Polyp histology was reported as juvenile (hamartomatous-inflammatoriy) polyp, routine tissue biopsies, including terminal ileal and chicken-skin mucosal biopsies were normal. Post procedure the child did well with immediate and complete resolution of her symptoms. Repeat calprotectin at 13 days post-procedure was improved (113 ug/g). The child was discharged to follow up. Discussion: Stool calprotectin is useful in children older than 10 weeks to distinguish between inflammatory and non-inflammatory pathophysiologic processes. Stool calprotectin can be elevated in patients with polyps - our case report suggests that markedly high calprotectin levels that have heretofore been considered suspect of severe colitis are also consistent with (juvenile) polyps. We postulate that the source of calprotectin in our patient was the inflammatory polyp mucosal lining, hence the trend to normalized fecal concentrations post-polypectomy. Future studies need to address the comparison in sensitivity between fecal calprotectin and hemoccult testing. References: Carroccio A, Iacono G, Cottone M et al. Clin Chem. 2003 Jun;49(6):861-7. Pezzilli R, Barassi A, Morselli Labate AM et al. Dig Dis Sci. 2008 Jan;53(1):47-51

Title: Outcomes after ileal resection in paediatric Crohn Disease: a 30 year single centre experience

Thomas D Walters 1, A Chow 1, J Langer 1, R McLeod 1, Mark S Silverberg 1, Anne M Griffiths 1
1) Hospital for Sick Children, University of Toronto, Toronto, Canada

Summary:
BACKGROUND/AIM The possibility of a significant disease-free interval (DFI) makes surgery an attractive option for patients with localized Crohn disease (CD). We reviewed post-operative outcomes in order to generate recommendations concerning use of biologic therapies in CD amenable to limited resection. METHODS Patients undergoing resection of the terminal ileum +/- right colon (ICR) were studied. Patients were excluded if there was gross residual disease left in situ. Recurrence was defined by the return of symptoms with imaging consistent with CD. DFI was analyzed using the Kaplan-Meier Curve, the log-rank statistic, and Cox’s proportional hazards. PATIENTS 180 CD patients (58% male) underwent their first ICR between 1971 and 2005. Median age was 12.6yrs (IQR:10.7-14.3) at diagnosis, and 15.2yrs (IQR:13.6-16.6) by time of surgery. At diagnosis, 22% had non-inflammatory disease (NID), either structuring or penetrating, increasing to 77% by time of surgery (18% penetrating; 59% strictureting). 91pts (51%) had macroscopic disease involving ileum and cecum (IC); 27% had isolated ileal disease (SB); 22% ileal-right-colon disease (SBC). SBC disease was more often inflammatory at the time of surgery (OR 3.4, p=0.002). NOD2 status was available on 30% of patients. 60% received post-op prophyllactic therapy with 5-ASA (24%), metronidazole (30 %) or azathioprine (7%). RESULTS Median time to surgery (TTS) for patients with inflammatory disease (n=140) was 2.7yrs (IQR:1.2 to 4.4yrs). The majority of the 40 patients with NID at diagnosis were resected within 3 months. Overall, 66 (36%) patients developed post-operative recurrence (17% within 12mths), with a median DFI of 5.31 yrs (95%CI 4.6-6.0yrs). Independent of location, DFI was markedly shorter for those with inflammatory vs complicated (penetrating or stricturing) CD at resection (median 2.64 yrs vs 6.31 yrs, p=0.0001). OR 3.05 (p=0.01) for risk of recurrence by 12mths. NOD2 fs1007 carriage did not influence TTS for patients with initially inflammatory disease, but was associated with a shorter post-operative DFI (OR 37% vs 15% recurrence by 2yrs, p=0.02). CONCLUSIONS Young patients undergoing ICR for structuring or penetrating complications can anticipate a post-op DFI lasting many years. However, patients whose disease is inflammatory have a much shorter DFI post-op. These data support use of biologic therapies in otherwise medically refractory patients without intestinal complications.

Title: Functional dyspepsia as a cause of chronic abdominal pain

Trini Fragoso 1, Dency Rivas 1, María Elena Trujillo 2, Rebeca Milan 1, Beatriz Purón 1
1) Department of Gastroenterology and Nutrition, Pedro Borbás Astorga Children’s University Hospital, La Habana, CUBA 2) Department of Gastroenterology and Nutrition, Juan Manuel Márquez Children’s University Hospital, La Habana, CUBA
Summary:

Introduction: Irritable bowel syndrome (IBS) in pediatric population is poorly defined and chronic abdominal pain (CAP) is a frequent motive for consultation during infancy and adolescence. Objective: Our aim is to determine the clinical characteristics and natural history of IBS in children and adolescents attending our outpatient practice of pediatric gastroenterology, according to Roma criteria. Methods: The sample was all outpatients with CAP diagnosis. Within a 3 years period (1-05/12-07), in their first visit a questionnaire for symptoms was to be filled out by patients and/or parents or tutors and a complete physical examination was performed. The following tests were performed in all patients: hemogram, erythrocyte sedimentation rate, glycemia, amylase, creatinine, uric acid, determination of blood lipids, hepatic enzymes, antigliadin antibodies. Those who were positive were then tested for tissue transglutaminase auto-antibody, microbiological and parasitological examination of the feces, occult blood and bile acids in stools, urine culture, metabolic tests in urine, electroencephalogram, upper gastrointestinal endoscopy and anatomopathological study, abdominal ecography to screen for organics causes. These data were loaded into an Epiinfo-6 Program. Percentual distribution was the selected statistic method. Results: 384 patients with CAP were studied, 41 patients (10.7%) were considered as FD: age 6.5-18 years (mean 12 years), 57.4% male. Family history of peptic ulcer disease in 13 (24%). Most frequent symptoms and signs were: abdominal pain localized in epigastrium in 52 (96.3%), acidity in 35 (64.8%), nausea 19 (35,2%), vomiting 15 (27,8%). No evidence of failure to thrive. 10 (18,5%) showed signs of irritable bowel syndrome; 12 (22,2%) cysts of Giardia lamblia in stools and 9 (16,6%) Helicobacter pylori in gastric mucosa (urease test). Evolution time was from 3 months and more than 3 years, predominant the 37% in the group of 3 month, followed by the 20,4% more than 1 year. Conclusions: FD is a frequent cause of functional CAP and diagnosis based in clinical symptoms according to Roma criteria is useful as a diagnosis method. The majority of patients with FD in their childhood has a satisfactory evolution and should be managed by physicians at the Primary Health Care level.

P0537

Title: Irritable bowel syndrome as a cause of chronic abdominal pain

Trini Fragoso 1, Dency Rivas 1, Beatriz Purón 1, Yania Benech 1
1) Paediatric University Hospital “Pedro Borrás”, Servicio de Gastroenterology and Nutrition., La Habana, CUBA

Summary

Introduction: Irritable bowel syndrome (IBS) in pediatric population is under diagnosed and chronic abdominal pain (CAP) is a frequent motive for consultation during infancy and adolescence. Objective: Our aim is to determine the clinical characteristics and natural history of IBS in children and adolescents attending our outpatient practice of pediatric gastroenterology, according to Roma criteria. Methods: The sample was all outpatients with CAP diagnosis. Within a 3 years period (1-05/12-07), in their first visit a questionnaire for symptoms was to be filled out by patients and/or parents or tutors and a complete physical examination was performed. The following tests were performed in all patients: hemogram, erythrocyte sedimentation rate, glycemia, amylase, creatinine, uric acid, determination of blood lipids, hepatic enzymes, antigliadin antibodies. Those who were positive were then tested for tissue transglutaminase auto-antibody, microbiological and parasitological examination of the feces, occult blood and bile acids in stools, urine culture, metabolic tests in urine, electroencephalogram, upper gastrointestinal endoscopy and anatomopathological study, abdominal ecography to screen for organics causes. Patients meeting IBS criteria were selected. These data were loaded into an Epiinfo-6 Program. Percentual distribution was the selected statistic method. Results: 384 patients with CAP were studied, 41 patients (10.7%) were considered as SII: age 5-15 years (mean 9,5 years, 51,2% between 5-9 years); 22 male (53,7%). No family history of inflammatory bowel disease. Most frequent symptoms and signs were: pain or abdominal discomfort localized in hypogastrium in 28 (68,3%) and in the periumbilical region in 13 (31,7%); diarrhea in 21 (51,2%); constipation in 8 (19,5%); diarrhea alternating with constipation in 12 (51,2%); relief with defecation in 30 (73,2%). Cysts of Giardia lamblia in 9 (22%). Undernourishment in 12,2% and 12,2% obese patients. Evolution time was from 3 months to more than 2 years: 31,6% more than 1 year; 24,4% more than 2 years; 22% with 3 years and 22% between 4 and 6 months. Conclusions: SII is a frequent cause of functional CAP and diagnosis based in clinical symptoms according to Roma criteria is useful as a diagnosis method. The majority of patients with SII in their childhood should be managed by physicians at the Primary Health Care level.

P0538

Title:

An Epidemiologic Study of Irritable Bowel Syndrome

Gülcan Seymen 1, Tülay Erkan 1, Fügen C Cokugras 1, Tufan Kutlu 1
1) Pediatric Gastroenterology, Hepatology and Nutrition Unit, Cerrahpaşa Medical Faculty, Istanbul University, Istanbul, Turkey

Summary:

Objective : To assess the epidemiological characteristics of irritable bowel syndrome (IBS) in children. Methods : Subjects were 310 new patients, 3-18 years of age, seen in pediatric outpatient clinic of Cerrahpaşa Medical Faculty from August 2007 through March 2008. The children and parents were requested to fill in a questionnaire based on Rome III criteria. IBS was diagnosed in patients who met criteria for IBS with normal complete blood count, erythrocyte sedimentation rate, negative stool studies for bacterial and parasitic infections . Results : The prevalence of IBS was 22% (68) in 310 patients. Median age was 9 years. Among children who received a diagnosis of IBS, prevalence of vomiting was 14% (10/68) and strange
Intestinal symptoms were assessed by a validated questionnaire. They underwent a series of rectal isobaric balloon distensions (from 4 mmHg to 100 mmHg).

**Study design:** 51 patients (25 girls; median age 14.2 years; range 8.4–17.6) with abdominal pain > 2 months were prospectively studied. Gastro-abdominal pain.

**Objective:** To evaluate the diagnostic value of the rectal sensory threshold for pain (RSTP) measured by barostat in children and adolescents with functional abdominal pain (FAP), an association with rectal hypersensitivity and abnormal pain perception has been reported. However, the diagnostic value of the determination of the visceral sensitivity threshold remains unknown.

**Background:** Functional gastrointestinal disorders (FGD) affect 10–15% of the pediatric population. In children with irritable bowel syndrome (IBS) or functional abdominal pain (FAP), an association with rectal hypersensitivity and abnormal pain perception has been reported. However, the diagnostic value of the determination of the visceral sensitivity threshold remains unknown.

**Study design:** 51 patients (25 girls; median age 14.2 years; range 8.4–17.6) with abdominal pain > 2 months were prospectively studied. Gastro-intestinal symptoms were assessed by a validated questionnaire. They underwent a series of rectal isobaric balloon distensions (from 4 mmHg to 100 mmHg).
a maximum of 48 mmHg with tracking) using an electronic barostat. The patients' perception (gas, stool, discomfort, pain) was noted during each distension. RSTP was defined as the pressure in the balloon when abdominal pain was experienced. Children were also asked to draw a standardized human body diagram their pain experienced at home and during the procedure. The attending physician was blind of the barostat results and supplementary investigations were done at his discretion. All patients were followed for at least 3 months to determine their final diagnosis. At this time, subjects were classified as having a FGD or an organic disease. Results: 35 patients (69%) had a FGD (19 IBS, 16 FAP) and 17 (31%) had an organic disease. RSTP was lower in the FGD group than in the organic disease group (25.4 mmHg: 95%CI 21.5 - 29.3 vs 37.1 mmHg: 95%CI 33.9 - 40.3; P=.0002). At the cut-off of 30 mmHg, the RSTP measurement for the diagnosis of IBS and FAP had a sensitivity of 94% and a specificity of 77%; the area under the corresponding receiver operating curve (ROC) was 0.82 (95%CI, 0.71-0.94). The odds of a diagnosis of IBS or FAP was 24 times greater if the RSTP was less than 30 mmHg (95%CI 4 - 127) than for an RSTP greater than 30 mmHg. Abdominal pain location was not a significant predictor of disease outcome (p=0.63). Conclusion: The RSTP, as measured by barostat, is a valid diagnostic tool for the differentiation of organic disease from IBS or FAP in children with chronic abdominal pain. In children, RSTP is a biological marker of IBS and FAP as defined by Rome III criteria.

P0541

Title: Anti-Saccharomyces cerevisiae and pancreatic autoantibodies in families of Crohn’s disease children.

Urszula Jedynak-Wasowicz 1, Kinga Kowalska-Duplaga 2, Andrzej Wedrychowicz 2, Katarzyna Przybyszewska 2, Małgorzata Sladek 2, Krzysztof Fyderek 2
1) Dept. of Children’s Diseases PAIP, Jagiellonian University, Cracow, Poland 2) Dept. of Pediatrics, Gastroenterology and Nutrition PAIP, Jagiellonian University, Cracow, Poland

Summary:
Objective: to determine the prevalence of anti-Saccharomyces cerevisiae antibodies (ASCA) and pancreatic antibodies (PAB) in healthy first-degree relatives of children with Crohn’s disease (CD) from south-eastern Poland. Methods: One hundred forty four healthy first-degree relatives from 60 families of affected children and 104 healthy aged matched control subjects were included into the study. ASCA were detected using ELISA, PAB – using indirect immunofluorescent method. Also healthy relatives were asked to complete questionnaire related to gastrointestinal symptoms. Results: ASCA were present in 26% of families of children with CD, whereas ASCA were detected in 22/60 of families (36%) and in 35/144 persons. ASCA were present in 4% of healthy relatives. There was a significant difference in ASCA prevalence in families of ASCA-positive CD children when compare to families of ASCA-negative CD children (p=0.01). There was no correlation between gastrointestinal symptoms and antibodies status in healthy relatives. In contrast ASCA were found in 2.3% and PAB in none in control group. When compared to healthy controls (p=0.001) the prevalence of ASCA was significantly increased in children with CD and their first-degree relatives. Conclusions: 1. The presence of ASCA in healthy first-degree relatives of CD children from south-eastern Poland is high. We found over 60% prevalence of ASCA in children with Crohn disease and their healthy first-degree relatives, and much lower PAB presence. 2. Considering the genetic background of Crohn's disease, the detection of ASCA in families of patients with CD seems to be purposeful.

P0542


Urszula Jedynak-Wasowicz 1, Andrzej Wedrychowicz 2, Kinga Kowalska-Duplaga 2, Katarzyna Przybyszewska 2, Małgorzata Sladek 2, Krzysztof Fyderek 2
1) Dept. of Children’s Diseases PAIP, Jagiellonian University, Cracow, Poland 2) Dept. Of Pediatrics, Gastroenterology and Nutrition PAIP, Jagiellonian University, Cracow, Poland

Summary:
Objective: A prospective study of inflammatory bowel disease in Southern Poland was performed to investigate the prevalence and clinical status of children and adolescents with IBD hospitalized in our University Hospital between 2002 – 2006. Methods: Between January 2002 and December 2006 each month newly diagnosed case of childhood IBD we were prospectively surveyed and reported to database. Diagnosis of IBD was based on Porto criteria. Results: A total of 93 new IBD patients aged less than 17 years were identified, which corresponds to a mean annual incidence of 1.51 per 100,000. Crohn’s disease (CD) was diagnosed in 54.8%, ulcerative colitis (UC) in 36.6% and indeterminate colitis (IC) in 8.6%. The mean age at diagnosis was 11 years of age or more (72 children, 77.4%). The mean delay from onset of symptoms to diagnosis was 5 months, with one tenth having symptoms of more than one year. Delays were most common in CD children. Ileo-colonic involvement was documented in most CD cases (71.6%), with only a small minority having isolated ileal or isolated colonic disease. Left- side and pancolitis were reported in most UC cases (74.2%). Conclusions: In Southern Poland, the incidence of IBD has increased, compared to previous years (retrospective study 1992-2002), but is
still rather low as compared to other western European countries. We observed prevalence of CD cases, which were almost not diagnosed in 90’s.

P0543

Title: CHILDREN WITH IgA NEPHROPATHY HAVE ELEVATED COELIAC DISEASE SPECIFIC ANTIBODIES

Vaidotas Urbonas 1, Rimante Cerkauskiene 1, Birute Pundziene 2, Augustina Jankauskiene 1
1) Vilnius University Children’s Hospital, Vilnius, Lithuania 2) Kaunas University Hospital, Kaunas, Lithuania

Summary: Objective. The most common cause of primary glomerulonephritis is IgA-nephropathy (IgAN). Etiology of this disease is unknown. Coeliac disease (CD) is an autoimmune enteropathy with definite etiology – wheat, rye and barley prolamines cause CD. The finding of increased levels of IgA against food antigens in patients with IgA-nephropathy hypothesize of an association between IgAN and CD and with the progression of IgAN. The aim of this study was to establish the frequency of CD in children with IgAN. Methods. The study was done at Vilnius University Children Hospital between 2003-2005. We examined 25 IgAN children (10 girls and 15 boys; median age at examination 15.9yr, range 1.9 – 19yr) for the IgA antibodies to tissue transglutaminase (IgA-tTG) and IgA anti-gliadin antibodies (IgA-AGA). The diagnosis of IgAN was confirmed by kidney biopsy. IgA antibodies to tTG were analysed with recombinant human antigen with a commercially available kit from IBL, Hamburg (Germany). Patients who has positive IgA-tTG or IgA-AGA were advised to undergo small bowel endoscopy. Results. Elevated IgA-tTG antibodies were detected in 3 of 25 IgAN patients (12%). IgA-AGA were positive in 1 of 25 children (4%). No patient had elevated both types of antibodies. Small bowel endoscopy was suggested for 4 patients who were positive for IgA-tTG or IgA-AGA but performed only in one patient with positive IgA-tTG. It was normal. Other three patients were not willing to undergo endoscopy (Table 1). Conclusions. 1. Coeliac disease antibodies is common in IgAN (12% IgA-tTG and 4% IgA-AGA) 2. Patients with IgAN should be checked for coeliac disease

<table>
<thead>
<tr>
<th>Sex</th>
<th>Positive IgA antibodies</th>
<th>Age at diagnosis of IgAN (yr)</th>
<th>Age at investigation of IgA-tTG (yr)</th>
<th>Digestive symptoms</th>
<th>Small bowel biopsy</th>
</tr>
</thead>
<tbody>
<tr>
<td>M tTG 10 17</td>
<td>Vomiting, nausea, abdominal pain</td>
<td>Normal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M tTG 8 18</td>
<td>no</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F tTG 11 17</td>
<td>no</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M AGA 14 19</td>
<td>no</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P0544

Title: NO CHANGES IN SEVERITY OF GASTROESOPHAGEAL REFLUX DISEASE DURING 2000-2006

Vaidotas Urbonas 1, Jurate Sakalinskiene 1, Danguole Ruzeviciene 1
1) Vilnius University Children’s Hospital, Vilnius, Lithuania

Summary: Objective. The prevalence of gastroesophageal reflux disease (GERD is increasing especially in the western countries. The etiology of the disease in most cases is unknown. The hallmark of GERD is erosive esophagitis. The aim of this study was to evaluate the trend of the severity of erosive esophagitis in the country where life style during the past 15 years has changed greatly. Methods. Retrospectively we investigated 540 children (0 to 16 years of age) with erosive esophagitis. The diagnosis was made after upper endoscopy performed at Vilnius University Children’s Hospital during 2000-2006 years. Esophagitis was diagnosed when erosive lesions were seen on endoscopy. Modified Savary-Miller scale was used to grade erosive esophagitis (1). Children with combustion of the esophagus, immunodeficiency were excluded. The same two physicians performed all endoscopies. Results. During 2000-2006 years the total number of upper endoscopies was similar: 2000 - 1271, 2002 – 1470, 2004 – 1414, 2005 – 1253, 2006 - 1124 endoscopies. During study period the severity of erosive esophagitis didn’t change (table1). Conclusion. Severity of erosive esophagitis didn’t change during 2000-2006 years. References 1. Thomson M. Esophagitis. In: Pediatric Gastrointestinal Disease. Eds. Walker W.A., Durie P.R., Hamilton J.R., Walker-Smith J.A., Watkins J.B. B.C. Decker Inc., Ontario, 2000, 297-316.

P0545

Title: Association between extraesophageal symptoms and gastroesophageal reflux disease in children: a systematic review
Vasundhara Tolia 1, Yvan Vandenplas 2
1) Providence Hospital, Southfield, Michigan State University, Michigan, USA 2) Department of Paediatrics, Academic Hospital, Free University of Brussels, Brussels, Belgium

Summary:
Objective: Gastroesophageal reflux disease (GERD) in adults is associated with several extraesophageal symptoms affecting various organs. We aimed to review systematically the association between GERD in children and extraesophageal symptoms. Methods: We searched Medline and EMBASE systematically for articles studying the prevalence of GERD in children with extraesophageal symptoms or of extraesophageal symptoms in children with GERD, and studies assessing the effect of GERD therapies on extraesophageal symptoms. We excluded studies with no control cohort and those not published in English. Overall prevalence estimates were determined by calculating average pooled values weighted by sample size. Results: We identified 17 relevant articles. Asthma, pneumonia, bronchiectasis, sinusitis and dental erosion were significantly more prevalent in children with GERD than in healthy controls (p<0.05; Table 1). GERD was more prevalent in children with asthma, apparent life-threatening event (ALTE) or laryngotracheitis than controls. Two studies showed that proton pump inhibitor (PPI) therapy significantly reduced asthma symptoms in children compared with placebo. A third study showed that cisapride was not superior to placebo in improving persistent, unexplained crying in infants. Conclusions: Our analysis suggests an association between asthma and GERD in children. Possible associations exist between GERD and childhood pneumonia, bronchiectasis, laryngotracheitis, sinusitis and dental erosions, but the paucity of data and varying disease definitions used mean that firm conclusions cannot yet be drawn. The reported effect of GERD pharmacological therapy on extraesophageal symptoms also varied, probably due to the different drugs used, methods of data collection, symptoms studied or small populations. PPIs were beneficial in controlling childhood asthma. Our review highlights a need for further well-designed, case-controlled trials in children, using a standardized definition of GERD and extraesophageal conditions.

P0547
Title: Functional constipation is the most frequent cause of chronic abdominal pain in children
Vera Loening-Baucke 1, Alexander Swidsinski 2
1) University of Iowa Children's Hospital, Iowa City, IA, United States 2) Charité Hospital, Berlin, Germany

Summary: Objective: Chronic abdominal pain (cAP) is a frequent complaint in children. The aims were to evaluate the prevalence rate and causes of cAP and to evaluate how well the pediatric Rome III classification system for pain-related functional gastrointestinal disorders (FGIDs) performs in a large academic pediatric primary care population. Methods: Identification of the study group: 1002 children, ≥4 years old, who were seen for at least one health maintenance visit during a 6-month period. Excluded were 40 children with chronic disabling disease. We reviewed retrospectively the complete charts, from birth on, in 962 children (493 boys, 469 girls) for complaints and causes of cAP using the pediatric Rome III criteria for FGIDs. Results: We found that 12.7% had suffered from cAP in the past, 10.8% of the boys and 14.7% of the girls. We found that functional constipation was the cause of cAP in 83%, the AP resolved with treatment of the constipation. Childhood functional abdominal pain was the cause in 8.2% and colic in 4.9%. Four children suffered from gastroesophageal reflux disease and 2 had chronic infections of the GI tract. One suffered from side pain during running. There was no significant difference in the causes of cAP in boys and girls. Using the Rome III criteria for FGIDs, we found that cAP was due to functional constipation in 83%, but only in 13% due to a cause classified under pain-related FGIDs and colic. Conclusions: In a primary care setting, functional constipation is the most frequent cause of cAP in children.

P0548
Title: Observational study of aerophagia in constipated children
Vera Loening-Baucke 1, Alexander Swidsinski 2
1) University of Iowa Children’s Hospital, Iowa City, Iowa, United States 2) Charite Hospital, Berlin, Germany

Summary: Objective: Aerophagia is rare in healthy children. The diagnosis is often delayed, especially when it occurs concomitantly with functional constipation. The aim is to increase awareness about aerophagia. Methods: 2 girls and 7 boys, 2-10.4 years of age, with visible gaseous abdominal distention and functional constipation were evaluated retrospectively at the Children's Hospital of the University of Iowa. The following data were collected using a structured form: age, gender, clinical symptoms, past medical history, findings on physical examination and the results of evaluations such as abdominal x-rays, anorectal manometry and laboratory data, time to diagnosis, treatment and outcome. Results: 7 children were healthy except for problems with constipation and 2 had pervasive developmental disorder. Air swallowing (4), belching (1), flatulence (3), vomiting (2) and abdominal pain (3) were occasionally reported. A history of less distension on awakening helped in making the diagnosis of aerophagia in all. The abdomen was visibly distended, nontender, and tympanitic in all. The rectal examination often revealed a dilated rectum filled with gas or stool.
and gas. The abdominal x-ray showed gaseous distension of the colon in all and of the stomach and small bowel in 8. Mean time to diagnosis was 9 months, even the authors needed 2.6 months. Treatment consisted of education about the air sucking and swallowing, encouraging the child to stop the excessive air swallowing, and eliminating the use of straws and carbonated beverages. All resolved the aerophagia in 2-20 months, mean 7 months. Conclusion: The diagnosis of aerophagia is often delayed, especially in children who also have functional constipation. Excessive burping or flatulence is often not observed in these children. Asking about or documenting less distention on awakening should help to make the diagnosis.

P0549

Title: Assessment of gluten in homemade foods prepared by celiac disease patients

Vera L Sdepanian 1, Karin B Hirayama 1, Ulysses Fagundes-Neto 1, Ricardo P Oliveira 1, Mauro B Morais 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary:
Objectives: 1. To evaluate the presence of gluten in homemade food prepared by patients with celiac disease and/or their caretakers, as well as in processed products that might be used to prepare the homemade food where gluten was identified. 2. To establish a relationship between compliance with gluten-free diet and gluten analysis in homemade food. Methods: Some 151 homemade foods and 52 processed products were analyzed by R5 ELISA, and prior to this an extraction procedure of gliadin for heat-processed foods was used. The test detection limit was set at 3 ppm of gluten. The compliance with gluten-free diet was performed by antibody anti-tissue transglutaminase and verbal information. Results: 9.3% (14 of 151) of the homemade foods and 11.5% (6 of 52) of the processed products showed quantity higher than the test detection limit (3 ppm of gluten). Dietary transgression was present in 48.4% patients. There was no statistical difference of the proportion of homemade food containing gluten above the test detection limit (3 ppm of gluten) and also above the limit for naturally gluten-free food proposed by Codex Alimentarius Commission (20 ppm of gluten) between those who complied with and those who do not complied with gluten-free diet. Conclusions: The greater part of the homemade food and the processed product did not contain gluten. Both groups, those who complied with and those who did not complied with gluten-free diet, adequately prepared gluten-free food. Nevertheless, a large number of patients did not comply with the diet therapy.

P0550

Title: Assessment of gluten in supposedly gluten-free foods prepared in bakeries

Vera L Sdepanian 1, Daniela R M Salles 1, Mauro B Morais 1, Ricardo P Oliveira 1, Ulysses Fagundes-Neto 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary
Objective: To evaluate the presence of gluten in supposedly gluten-free foods prepared in bakeries in the city of São Paulo. Methods: Some 214 supposedly gluten-free food samples were analyzed. They were sold in bakeries in four regions of the city of Sao Paulo and were distributed within the following groups: cheese bread, foods prepared with corn flour, foods prepared with manioc, and foods prepared without flour. The analysis technique employed was the ELISA R5, and prior to this an extraction procedure of gliadin for heat-processed foods was used. The test detection limit was set at 3 mg/Kg of gluten. Results: 83.2% (178/214) of the supposedly gluten-free foods showed gluten quantity higher than the test detection limit (3 mg/Kg of gluten) and some 63.1% (135/214) of the food samples analyzed had a gluten quantity above 20 mg/Kg of gluten, the limit for naturally gluten-free foods proposed by the Codex Alimentarius Commission. The proportion of foods prepared from corn flour with gluten content higher than 20 mg/Kg of gluten was statistically greater than the proportion of the other groups. The median gluten content of the total of foods analyzed equaled 30.3 mg/Kg of gluten and the minimum and maximum range equaled < 3 mg/Kg of gluten and 175.3 mg/Kg of gluten, respectively. Conclusion: The majority of supposedly gluten-free foods prepared in bakeries contain gluten.

P0551

Title: Celiac disease in São Paulo – Brazil: changing clinical patterns in the new millennium

Leonardo Meireles 1, Ulysses Fagundes-Neto 1, Mauro B Morais 1, Vera L Sdepanian 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary
Objective: To compare clinical patterns of celiac disease in patients diagnosed before the turn of the millenium with those diagnosed after that date. Methods: 174 children and adolescents outpatients were analyzed according their clinical patterns at the moment of diagnosis and compared
as follows: the patients diagnosed before December 31, 2000 with those diagnosed after that date. Typical form of celiac disease was characterized according the presence of history of diarrhea at diagnosis while patients with atypical form did not present history of diarrhea at diagnosis. Patients who were diagnosed up to 2 years old were named as having early form while those diagnosed after 2 years old were named as having late form. Results: Typical form is still the most frequent clinical presentation of celiac disease (66%). The proportion of patients with celiac disease with atypical form was greater after December 31, 2000 (51.0%) compared with the period before (10.8%), $P < 0.001$. The proportion of atypical and late form (43.4%) was greater than those with atypical and early form (43.4%), $P = 0.002$. Increased prevalence of late diagnosed form has been observed after December 31, 2000 (68%) compared with the period before (51.4%), $P = 0.039$. Conclusion: Atypical and late form of celiac disease are increasing in the new millennium.

P0552

Title: Comparison between steatocrit and van de Kamer method for fecal fat analysis in intestinal malabsorption syndrome

Ricardo P Oliveira 1, Renata Vigliar 1, Vera L Sdepanian 1, Ulysses Fagundes-Neto 1, Mauro B Morais 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary:
Objective: To analyze the diagnostic effectiveness of the steatocrit in relationship to the van de Kamer method for fecal fat analysis. Methods: The study included stool samples from 244 patients of both genders, from 3 months to 19 years, who were suspected to have intestinal malabsorption syndrome. Steatocrit, carried out by the micro method of Phuapradit, and fecal fat concentration according to the van de Kamer method for fecal fat analysis were performed in the same stool sample collected in the 3 days after a 6 days of rich fat diet (1 g/Kg, maximum 32 g/day). The cutoff point in the van de Kamer method for fecal fat analysis to characterize steatorrhea was of 2.0 g/day for children under 6 years and of 7.0 g/day for those above of 6 years. Results: Weak correlation was observed ($r = +0.402$) but with statistical significancy ($p <0.000$) between the steatocrit and the van de Kamer method for fecal fat analysis. Steatorrhea was characterized in 65 (26.6%) of the 244 samples. The sensitivity and the specificity of the steatocrit (>2%) in relation to the van de Kamer method for fecal fat analysis (reference standard) were, respectively, 72.3% (confidence interval 95%: 61.4% - 83.2%) and 30.2% (confidence interval 95%: 23.5% - 36.9%). Conclusion: Steatocrit effectiveness for screening of steatorrhea is low compared to the van de Kamer method for fecal fat analysis.

P0553

Title: Experimental colitis induced by trinitrobenzenesulfonic acid (TNBS) as an assessment model of Saccharomyces boulardii effect

Vivian F C Luiz 1, Francy R S Patrício 1, Ivan Hong Jun Koh 1, Olga M S Amâncio 1, Ulysses Fagundes-Neto 1, Vera L Sdepanian 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary:
Objective: To describe clinical and morphological characteristics of rat’s distal colon in acute TNBS-induced model of colitis and to assess the preventive and therapeutic effect of Saccharomyces boulardii in this experimental model. Methods: 30 male Wistar rats were divided in three groups: 1) treated group – received Saccharomyces boulardii probiotic (1x108 CFU/ml) from day 1st to day 14th; 2) non-treated group – received saline solution 0.9% from day 1st to day 14th; 3) control group. At day 7th, colitis was induced in groups 1 and 2 by rectal administration of 10 mg of TNBS (50 mg TNBS/Kg) and ethanol 50%. After that, clinical evaluation was performed daily, during the last 7 days. After the sacrifice, at the day 14th, the distal colon was extracted for morphological assessment. Results: There were no differences between treated group and non-treated group in relation to weight loss and fecal consistency. The fecal blood presence score was higher in treated group than non-treated group. TNBS rectal administration caused severe colitis. The control group macroscopic score was lower ($P<0.001$) either in treated group and non-treated group, without differences between treated group and non-treated group. Concerning the microscopic score, control group was lower ($P<0.001$) either in treated group and non-treated group, without differences between treated group and non-treated group. Conclusion: TNBS-induced model of colitis in rats caused severe colitis. Saccharomyces boulardii did not improve clinical or morphological characteristics in this experimental colitis model.

P0554

Title: Increased trend of inflammatory bowel disease in São Paulo – Brazil from 1991 to 2007

Vera L Sdepanian 1, Leticia H C Lopes 1, Denise U Santana 1, Juliana T Saito 1, Elisabete Kawakami 1, Ulysses Fagundes-Neto 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary:
Objective: To analyze trends of inflammatory bowel disease among children and adolescents from 1991 to 2007. Methods: Data from 121 inflammatory bowel disease outpatients were studied. The statistical method applied to analyze the time series of the cases from 1991 to 2007 was polynomial regression. The dependent variable (y) was the cases of inflammatory disease, and the independent variable (x) the year. The medium point of the time series was considered in this study. Results: It was observed significant increased trend of the total number of patients with inflammatory bowel disease (R²=87.1%; P <0.001; y=4.929+0.855x). There was an increase trend in cases of Crohn’s disease (R²=75.5%; P <0.001; y=1.857+0.303x), and ulcerative colites (R²=75.5%; P <0.001; y=1.857+0.303x). Increase trend of inflammatory bowel disease was noticed in children (R²=56.1%; P <0.002; y=2.714+0.484x) and adolescents (R²=55.2%; P <0.002; y=1.857+0.303x). Conclusion: At the end of the period under the study the data suggest an increased trend among children and adolescents with inflammatory bowel disease.

P0555

Title: Infliximab for the treatment of Crohn’s disease and ulcerative colitis in children and adolescents

Juliana T Saito 1, Ulysses Fagundes-Neto 1, Mauro B Morais 1, Vera L Sdepanian 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary:
Objective: To evaluate the response of infliximab in children and adolescents with Crohn’s disease and ulcerative colitis. Methods: Twenty-one patients with inflammatory bowel disease received 5mg/kg of infliximab at weeks 0, 2, 6, 14 and 22. The following parameters were evaluated: 1. clinical manifestations; 2. activity index of inflammatory bowel disease by the Pediatric Crohn’s Disease Activity Index (PCDAI) for Crohn’s disease, the Lightiger Colitis Activity Index (LCAI) and the Pediatric Ulcerative Colitis Activity Index (PUCAI) for ulcerative colitis and the modified Harvey-Bradshaw index for Crohn’s disease and ulcerative colitis; 3. reduction or suspension of corticosteroids. Results: All patients had improvement in clinical manifestations after first infusion of infliximab. At week 22, 18 of 21 (85.7%) patients were categorized as remission, 3 of 21 (14.3%) patients were categorized as clinical improvement and no patient was categorized as no response. There was a statistically significant difference in all inflammatory bowel disease activity index at week 0, compared at the weeks 2, 6, 14 and 22. The corticosteroid was completely discontinued in 6 of 15 patients up to week 22. Conclusions: Infliximab is an efficient medication in the treatment of Crohn’s disease and ulcerative colitis in children and adolescents up to week 22.

P0556

Title: Lactose malabsorption and small intestine bacterial overgrowth in children and adolescents with celiac disease

Vera L Sdepanian 1, Vivian P Pereira 1, Mauro B Morais 1, Ulysses Fagundes-Neto 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary:
Objective: To evaluate lactose malabsorption and small intestine bacterial overgrowth in celiac disease children and adolescents who comply with and who do not comply with gluten-free diet. Methods: Forty six celiac disease patients between 5 and 11 years were included in the study. The compliance with gluten-free diet was performed by human recombinant IgA, antitissue transglutaminase antibody and verbal information. Lactose malabsorption and small intestine bacterial overgrowth were diagnosed by the hydrogen breath test. Breath hydrogen excretion was measured in parts per million (ppm) using a gas chromatographer (Quintron Instrument Company Inc.) at baseline, 15-, 30-, 45-, 60-, 90-, 120-, 180-, 210-, and 240-min intervals after the ingestion of lactose (2 g/Kg, maximum 50 g) to evaluate lactose malabsorption or after the ingestion of lactulose (10 g) to evaluate small intestine bacterial overgrowth. The test was indicative of bacterial overgrowth in the small intestine when the concentration of hydrogen in the expired air collected up to 60 min since the beginning of the test (fasting) showed increased equal or higher than 20 ppm. Lactose malabsorption was considered when excretion was higher than 20 ppm compared to baseline. The control group was made up of 40 children and adolescents siblings of the patients who were human recombinant IgA antitissue transglutaminase antibody negative with normal level of immunoglobulin A. Hydrogen breath test was performed to the control group for diagnosis of lactose malabsorption and small intestine bacterial overgrowth. Results: The proportion of lactose malabsorption was greater in patients who did not comply with gluten-free diet (96.0%) when compared with those who complied with gluten-free diet (52.4%), P <0.001, and also when compared with the control group (65%), P <0.009. There was no significant difference between the proportions of small intestine bacterial overgrowth in patients who did not comply with gluten-free diet (28.0%) compared with those who complied with gluten-free diet (14.3%). The proportion of small intestine bacterial overgrowth was greater in patients who did not comply with gluten-free diet compared with the control group, P <0.021. Conclusion: Lactose malabsorption and small intestine bacterial overgrowth was associated with patients who did not comply with gluten-free diet.
P0557

Title:
Weight and height velocity in children after the diagnosis of celiac disease: relation with compliance with gluten free diet

Vera L Sdepanian 1, Denise U Santana 1, Mauro B Morais 1, Ulysses Fagundes-Neto 1
1) Federal University of São Paulo - UNIFESP, São Paulo, Brazil

Summary:
Objective: To evaluate height and weight velocity in children in the first year of treatment of the celiac disease, and its relationship with compliance with gluten-free diet. Methods: Longitudinal study of height and weight velocity in the first year of treatment of 60 patients with celiac disease was carried out. The median age (25th and 75th percentiles) was 2.4 (1.6 – 5.6) years, 38 (63.3%) were female. Whole-year height and weight velocity index Z score were calculated according to Tanner, Whitehouse and Takaishi (British standard) whole-year velocity standard tables for height and weight (chronological age based). The mean profile of the height-for-age index Z score and weight-for-age index Z score in the first year of treatment of celiac disease patients was analyzed by a study of analysis of variance for repeated measures. Confidence information from the responsible of the child was assessed through structured questionnaire applied by pediatric gastroenterologist and nutritionist that followed the child, at the outpatient clinic, regarding compliance with gluten-free diet in at least three appointments at the celiac disease outpatient clinic during the first year of treatment. No compliance with gluten-free diet was considered when it was detected gluten ingestion in the period previous to the appointment. Results: No compliance with gluten-free diet was detected in 45% (27/60) of patients. There was no significant difference (Mann-Whitney test, P = 0.223) in the median age (25th and 75th percentiles) among children who comply (2.0 years; 1.3 and 6.9 years) and who do not comply with gluten-free diet (3.2 years; 2.0 and 5.5 years). The mean of whole-year height velocity index Z score of patients who do not comply with gluten-free diet was lower (P = 0.015) than those who comply with gluten-free diet. The mean of whole-year weight velocity index Z score of patients who do not comply with gluten-free diet was lower (P = 0.002) than those who comply with gluten-free diet. Conclusion: Patients who complied with gluten-free diet had higher height and weight velocity than those who did not comply with gluten free diet, in the first year of treatment of the celiac disease. Unfortunately, a large number of celiac disease patients do not comply with gluten-free diet.

P0558

Title:
Follow-up of infants with Cow's Milk Protein Allergy

Busoni, Verónica 1, Orsi, Marina 1, Donato, Gabriela 1, Gallo, Julieta 1, Sanchez, Camila 1, DAgostino, Daniel 1
1) Hospital Italiano, Buenos Aires, Argentina

Summary:
The diagnosis and management of infants with cow’s milk protein allergy (CMPA) is a real challenge in our clinical practice. Since exclusion diets are expensive and difficult to maintain, the usual question posed by parents and pediatricians is until when will this indication be necessary. Objective: To analyze different clinical presentations and formula requirements in infants with cow’s milk protein allergy (CMPA) related to the time needed to restore a normal diet. Methods and materials: A retrospective, descriptive study was performed with 50 infants (26 female, 24 male) diagnosed with CMPA between April 2001 to April 2006, who at February 2008, were consuming cow’s milk protein regularly. Initial diagnosis was confirmed with an exclusion-challenge test at a median age of 0.3 (4 months). At diagnosis maternal exclusion diet or an extensively hydrolysated formula was indicated and if symptoms did not improve an amino acid formula was introduced. In some patients, a soya formula had been already indicated by the pediatrician, and if the child was doing well, they continued with it. Provocation tests were done after 12 months of age and every 3 to 6 months thereafter in order to evaluate the likelihood of becoming tolerant to cow’s milk protein. Challenges were always indicated to be done at the hospital. Nevertheless, some parents did so at home and previous to medical indication. Results: Thirty two patients begun with symptoms after formula introduction and 18 did so during exclusive breast-feeding. Clinical settings were group 1 (G1): rectal bleeding (25/50); group 2 (G2): enteropathy (diarrhea, colic, vomiting) (17/50) and group 3 (G3): skin rash (8/50). Fifteen infants became asymptomatic with maternal elimination diet, 30 with extensively hydrolysates and 5 with soy formula. Five patients had to switch to an amino acid formula (4/5 belonged to G1). Infants in G1 tolerated cow’s milk protein at a median age of 1.06 years old (SD 0.26), and G2 at a median age of 1.65 (SD 0.57), showing a statistically significant difference between both groups (p = 0.000). G3 gained tolerance at 1.34 years (NSp). Conclusion: Rectal bleeding is the most impressive allergic presentation but infants with this concerning form, were the first to be able to resume cow’s milk protein in the diet.

P0559

Title:
Is Multichannel Intraluminal Impedance - pH Monitoring useful in infants with ALTE?
Summary:
Objective : To evaluate the presence of acid or non-acid (NA) gastroesophageal reflux (GER) episodes and symptom correlation in infants with Apparent Life Threatening Event (ALTE), with the 24 hour Multichannel Intraluminal Impedance(IMM)-pH probe. Method: Since January 2005 to March 2008, a prospective, multicenter study was conducted in 69 infants (42 girls, 27 boys) which were referred to evaluate GER in patients with ALTE. Evaluation was performed with 24h Sandhill Sleuth Monitoring Recorder using catheters(ZIN or ZPN S61CO1E): 7 impedance sensors and 1 pH probe at distal end. Patients with congenital anomalies, mental retardation, or on medications were excluded. Results: 69 infants were evaluated (male 27; female 42); mean age 0.21 months (m), range 0.06 - 2m, median: 0.21. 3191 episodes were detected by impedance, 1310 acid (41%), 1881 NA (59%). 908 acid episodes were detected by pH probe; 402 acid episodes registered by IMM were not detected by pH study. Patients were divided in groups: Group I: Patients with Boix Ochoa score > 16.6 were considered pathologic. Group II: Patients considered normal (score < 16.6). Group I: 13 infants (17.3%), (table 1). Acid episodes by pH: 417, by IMM: 418, NA: 232. 92% reached the proximal channel. 3 patients with apnea had positive score and the column arrived to proximal channel Group II: 56 infants (81%). Acid episodes by pH: 491, by IMM: 892, non-acid: 1649. 76% reached the proximal channels. The apnea: Reflux Symptom Index (RSI) was positive in 3 patients in Group I and in 24 in Group II with more full column NA reflux episodes. Conclusions: In infants the Multichannel Intraluminal Impedance-pH monitoring was a useful method because it showed the presence of NA events and full height gastroesophageal episodes related to ALTE. Although the reflux-apnea correlation may be low, in these patients there should be more concern on the temporal occurrence than with the phmetry score or the symptom index. More studies are necessary to better understand the real impact on the information this novel tool is revealing and the possible consequences on therapeutic approaches.

P0561
Title: Evaluation of Clinic Performance of Classification Plans and Treatment of Persistent Diarrhea used by PRODIAPE (Persistent Diarrhea Assisted Program)
Verônica Santos de Oliveira 1, Debora Santos de Oliveira 1, Elvira Alonso Lago 1, Marise Elia de Marsillac 1, Giuseppe Santalucia 2, Myrna Santos Rocha 1
1) Hospital Municipal Jesus, Rio de janeiro, Brazil 2) Hospital Geral de Bonsucesso, Rio de janeiro, Brazil
Summary:
Objective: The PRODIAPE was created in 1996 to offer better assistance to children with persistent diarrhea and the principal objective is the ambulatory treatment, reducing the period of hospitalization. The program advocates consequent classification of the severity of persistent diarrhea and its treatment plans as model to be followed by other health services. The objective is the evaluation of clinic performance (cure to diarrhea and nutritional recovery) of classification plans and treatment used by PRODIAPE. Methods: 906 children with persistent diarrhea (PD) were kept track of from June 1996 to June 2007. To classify diarrhea, we used 4 categories and established respective therapeutic plans as follows: Mild PD (children over 6 months old, weight above 5 percent from NCHS and diarrhea span between 15 to 30 days) - Treatment A: reduced amounts of lactose (3.5 g/150 kcal) and sacarose / Moderate PD (children between 6 to 24 months, weight under 5 percent and/or diarrhea span over 30 days) - Treatment B: lactose free diet and low sacarose / Moderate PD (children above 6 months old) - Treatment C: advocates sole use of lactose and sacarose free diet and soy protein formula / Very Severe PD (children above 6 months old and weight above 5 percent) - Treatment D: whey protein formulas. These formulas are provided by the Municipal Health Bureau of Rio de Janeiro. Results: 906 children: 11% were classified as mild PD; 67% were moderate; 11.5% severe and 10.5% very severe. The nutritional recovery was an important fact: 96% of the children who were discharged showed weight gain over 10 percent and 95% of the children who were monitored on June 2007 showed an upward weight X age curve. Conclusion: PRODIAPE provide rational and free formula distribution (during the ambulatory treatment), the cure to diarrhea and an evident impact on the nutritional recovery of these children from poor segments of society.

P0562
Title: Do we need to Supplement Zinc in Children with Celiac Disease?
Thapa BR 1, Rawal P 1, Prasad KK 1, Gupta V 1, Prasad R 1, Singh K 1
1) Postgraduate Institute of Medical Education and Research, Chandigarh, Chandigarh, India
Summary:
17.2 cm. Male to female ratio was 1.5:1. Major symptoms at presentation were diarrhea (54.5%), failure to thrive (52.2%), abdominal distension
(41%), anemia (40%) and pain abdomen (19.4%). Mean serum anti TTG level was 164.24U/ml (range 1-749 U/ml) and levels correlated with the severity of small intestinal damage on biopsy. Mean Zn levels at baseline and after 4 weeks were 52.35 µg/dl and 71.9 µg/dl in G group and 51.21 µg/dl and 74.9 µg/dl in (G+Z) group respectively (p=NS). Rise in serum zinc level was significant in individual group with or without Zn supplementation (19.5 µg/dl in G group and 23.7 µg/dl in G-Z group) after 4 weeks and difference was not significant when both groups compared. Mean serum zinc levels at baseline and rise was statistically similar at 4 weeks in patients with diarrhea and short stature. Conclusion There is zinc deficiency in patients with celiac disease. Gluten free diet is the mainstay of treatment. Serum zinc levels rises with GFD irrespective of zinc supplementation. P 5.5 kgs and mean height 102.6 cm (Division of Pediatric Gastroenterology, SSGE and Dept of Biochemistry, Postgraduate Institute of Medical Education and Research, Chandigarh. Background Celiac disease is a common cause of malabsorption in Northwest Indian children. Comparative data about effect of gluten free diet (GFD) with or without zinc supplementation on serum zinc levels is scanty. Objective To study serum levels of zinc in children with celiac disease, to correlate serum zinc levels among the celiac disease patients with short stature and diarrhea and to compare serum zinc levels in deficient patients on GFD with or without four weeks of zinc supplementation. Methods A prospective randomized open label controlled study was conducted on 134 children diagnosed with celiac disease in Division of Pediatric Gastroenterology, Postgraduate Institute of Medical Education and Research, Chandigarh from July 1st 2006 to December 31st 2007. All the patients underwent hemogram, liver function tests, IgA anti-tissue transglutaminase (anti TTG) antibodies, UGI endoscopy and serum zinc levels at baseline and after 4 weeks. Zinc deficient patients (n=96) were randomized into 2 groups. Group G (n=48) received GFD without and group G+Z (n=48) received GFD with zinc supplementation for 4 weeks. Results Mean age was 6.2 ± 3.2 years, mean weight was 14.6 kg.

P0563

Title:
Skin Prick Test in infants with IgE mediated Cow’s Milk (CM) Allergy

Andrea K Gushken 1, Aline P M Pegas 1, Luciana Caixeta 1, Vivian P Oliveira 1, Antonio C Pastorino 1, Cristina M A Jacob 1
1) Departamento de Pediatria da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brasil

Summary:
Objective: To describe the results of specific IgE to cow’s milk (CM) through skin prick test (SPT) in allergic to cows milk infants. Methods: It was selected 38 infants (17F: 21M) from 0 to 2 years old among 170 pediatric patients allergic to cow's milk followed in tertiary pediatric center. CMA diagnosis included: characteristic anamnesis and/or positive double blind placebo controlled food challenge. SPT was performed by a trained specialist according to modified Pepy's Technique. Results were considered positive when allergen (commercial CM and CM in natura) and positive control (histamine 10mg/ml) wheals were higher or equal than 3mm. Patients with anaphylaxis were submitted to SPT only after one year of follow up without anaphylaxis episodes. Results: Patients were divided in two groups. Group I: patients younger than six months (n=8). Group II: patients from 6 months to 2 years old (n=30). Cutaneous symptoms were present in 2 from group I and 28 from group II; anaphylaxis was present in 2 from group I and 12 from group II; gastrointestinal symptoms were present in 2 from group I and 19 from group II and respiratory symptoms were present in one from group I and 8 from group II. In group I, SPT was positive in seven patients, being wheal higher or equal than 6mm in one patient. In group II, SPT was positive in 22 patients, being wheal higher or equal than 6mm in 19 patients. Comparing the two allergens (commercial CM and CM in natura), commercial CM was positive in 6/7 in group I and 18/22 in group II. CM in natura was positive in 4/7 in group I and 12/22 in group II. Conclusion: SPT is a simple and accessible methodology for specific IgE research that can help in diagnosis of cow’s milk allergy in patients from different ages. Although the correct interpretations of the results can only be done by trained physicians, this approach can be included at the diagnostic methodology of IgE mediated CMA in infants.

P0564

Title:
Prevalence of parasites in children up 2 to 15 years, until and after treatment, in a poor district of Espirito Santo State - Brazil

Viviane Lucia Vago 1, Giselle Perini Bicudo 1, Ana Daniela Izoton de Sadovsky 1
1) Centro Universitário Vila Velha, Vila Velha, Brazil

Summary:
Objective: The first objective was analyzing the prevalence of helminths and protozoa in children of a municipal school in a poor district of Espirito Santo State – Brazil. The next objectives were collect socioeconomic data; treat these children and an ambient education to their families. Methods: From April 2007 to September 2007, 105 stools samples were obtained and analyzed in Laboratory of UVV (Sedimentation method), prospectly from 71 children in two different times – Group 1 (G1) = 71 – first colect and Group 2 (G2) = 34 – after treatment and education. The parents were invited to sign a term informed consent, answered a socioeconomic questionnaire and received the collector of the sample. When the samples were positives to pathogenic parasites, children were submitted a medical examination, prescription and delivery of nitazoxanide in correct dose to their
families. The next steps were explanations about transmissions of parasites and playful games about individual hygiene and recollect feces samples after 3 months. Results: The children median of age was 11 years; 47% were female and 53%, male, 76% had filter in their houses and 94% access the basic sanitation. The prevalence of intestinal parasitism was of 54.9% (31/71). The prevalence of pathogenic and non pathogenic enteroparasites was 41% and 23% (G1) and 24% and 14% (G2) respectively. The biggest intensity was represented by the commensal protozoa Entamoeba coli (30%), followed of Giardia lamblia (23%) and Endolimax nana (11%). It was verified that 38 (54%) children of G1 and 14 (41%) of G2, had some parasite. Entamoeba coli and Giardia lamblia had been found in both the groups, with 22% and 17% (G1) and 11% and 9% (G2), respectively. The helminths more identified were Ascaris lumbricoides and Tricuris trichiura in G1 (15% and 7%, respectively), whereas Tricuris trichiura was not found in G2. In G1, twelve children (37%) had more than one parasite in the fecal sample, while in G2, only 2 (16%). The associated factors with presence of parasites were individuals’ habits: to gnaw nails, don’t wash their hands and absence of filter water ingestion. Conclusion: The high number of observed children with parasites in this sampling was similar of other Brazilian studies, but other studies were necessary to analyze drug efficacy and ambient recontamination.

P0565

Summary:
Introduction: Inflammatory bowel disease (IBD) was previously thought of as a rare entity among the pediatric population in our country. Most of the diarrhea cases were attributed to infective causes. Objectives: Studying the epidemiology of IBD among children in the state of Kuwait and comparing its features with those of children in the rest of the world. Methods: All children with IBD referred to the pediatric gastroenterology unit in the period from February 1998-January 2008 were reviewed. Results: 130 children with IBD were studied. 92 patients (70%) had crohn’s disease (CD), 36 (28%) had ulcerative colitis (UC) and 2 (2%) had indeterminate colitis (IC). 53% of all patients were females. The age range was 9 months -15 years, (median: 11years) and 72% were 12 years or younger. 76% were Kuwaiti nationals. Positive family history of IBD was found in 23%. The most common presenting symptoms were abdominal pain (87%) and diarrhea (82%). Failure to thrive was detected in 36% and short stature in 20% of our series. Anemia and thrombocytosis were common laboratory findings. The ileocolonic region was the commonest site affected in CD patients (48%) followed by isolated ileal disease (24%) then isolated colonic disease (20%). Pancolitis was the commonest lesion in UC (64%) followed by left sided colitis (33%). Steroids induced remission in the majority of patients. 23% were maintained on thiopurines and 22% on monoclonal antibodies. Conclusion: IBD is not a rare disease in our native pediatric population. Its presentation and characteristics are similar to those reported in the rest of the world.

P0566

Title: INDIRECT MEDICAL COST IN CHILDREN REQUIRED HOSPITAL CARE FOR DIARRHEAL DISEASES

Pei-Fan Chai 1, Way-Seah Lee 1
1) University Malaya, Kuala Lumpur, Malaysia

Summary:
Introduction: Admissions for childhood diarrheal diseases accounted for 1.2% of all hospital admissions and 0.5% of all patient-bed-days in University Malaya Medical Centre (UMMC), Kuala Lumpur, in 2002. Rotavirus (RV) was the most common causative agent. With the introduction of new rotavirus vaccines, data on the financial burden would help to determine the cost-effectiveness of a possible rotavirus vaccination program. We aimed is to determine the indirect cost of children admitted for acute diarrheal disease. Methodology: All children younger than 12 years old, admitted to the children’s wards of UMMC with acute diarrhea from 1st August 2006 till 31 July 2007 were prospectively studied. Parents or guardians were interviewed by using a standard questionnaire at set time intervals. Results: Of the 260 children hospitalized with acute diarrhea during the study period, 198 patients had stool samples analyzed. Of these, 46 (23%) were positive for RV. The total indirect cost incurred was significantly higher in children who were RV positive (RV +ve vs. -ve; US$ 187 vs. US$ 162; P=0.03). Major items contributing to the total indirect cost included parental work-day loss and hospital bill. Table1: Indirect cost (in US$) of rotavirus and non-rotavirus diarrhoeal disease. Conclusion: Indirect medical cost in children hospitalized for diarrheal diseases in children posed a significant financial cost to Malaysian parents, accounting for approximately a quarter of monthly income.

P0568

Title: Is gluten challenge really necessary for the diagnosis of coeliac disease in children under the age of two years?

Victorien M Wolters 1, CM Frank Kneepkens 2, Caroline FM Gijsbers 3, Joachim J Schweizer 4, Mark A Benninga 5, Roderick HJ Houwen 1
1) University Medical Centre, Utrecht, The Netherlands 2) VU Medical Centre, Amsterdam, The Netherlands 3) Juliana Children’s Hospital/ Haga Teaching Hospital, The Hague, The Netherlands 4) Leiden University Medical Centre, Leiden, The Netherlands 5) Academic Medical Centre, Amster-
Summary:
Introduction In the diagnosis of coeliac disease (CD) gluten challenge is recommended for children under the age of two years at initial biopsy. Objective To investigate the diagnostic yield of gluten challenge in this group of children. Methods We included children aged 2 years or younger analysed for possible CD and having villous atrophy at initial small bowel biopsy in the period 1993-2004. We subsequently identified all patients who underwent a complete gluten challenge. Results We identified 334 children with possible coeliac disease. In 100 children (30%) a gluten challenge was performed, with the diagnosis being confirmed in 97. Retrospectively, in two of the three children without mucosal relapse, data available before gluten challenge did not justify the initial diagnosis of CD. In the third patient transient gluten intolerance could not be excluded. At first biopsy, the two children without mucosal relapse had negative serologic parameters, while the third patient had IgA anti-gliadin antibodies, but no IgA anti-endomysium antibodies (EMA). Indeed all patients with EMA at diagnosis had a relapse at gluten challenge. Conclusion Routine gluten challenge in children less than 2 years at initial diagnosis of CD has an extremely low diagnostic yield. We suggest that routine gluten challenge in this group of patients is not necessary when patients have villous atrophy in combination with EMA. Therefore, a revision of the current diagnostic criteria has to be considered.

P0569
Title: PREVALENCE OF EOSINOPHILIC ESOPHAGITIS IN CHILDREN WITH CELIAC DISEASE
Yasar Doğan 1, Ibrahim H Ozercan 2, Mustafa Demirol 3, Gulcin Changiroğlu 2, Tugba Karaca 3
1) Fırat University, Department Pediatric Gastroenterology Hepatology and Nutrition, Elazığ, Turkey 2) Fırat University, Department of Pathology, Elazığ, Turkey 3) Fırat University, Department of Pediatrics, Elazığ, Turkey
Summary:
Objective: Eosinophilic esophagitis (EE) and celiac disease (CD) are distinct clinical entities with specific clinical, laboratory and histological features. The aim of this study is to evaluate the possible coexistence of these two conditions. Methods: Between December 2005 and December 2007, Eighty children with newly diagnosed CD were included in the study. Upper gastrointestinal endoscopy was performed all patients by the same endoscopist. By using standard forceps, at least two biopsy specimens were taken from each of the following three sites: the distal esophagus, the antrum of the stomach and the duodenum. Endoscopic features required for a diagnosis of EE included esophageal mucosal furrowing, erythema, exudates, or decreased vascular markings. Histologic features of EE were more than 24 eosinophils per high-power filed, thickening of basal cell later, and papillary lengthening or elongation. Results: Sixty-nine children whose esophagus biopsy specimens were adequate enough for the evaluation were included (39 male and 30 female, mean age 7.4 years). Of the 69 children with CD, two (2.9 %) were also diagnosed with EE. While the one patient had failure to thrive and elevated tranaminase level, the other patient had diarrhea. Conclusion: Awareness of the potential coexistence of eosinophilic esophagitis and celiac disease should promote optimal diagnosis of these conditions.

P0570
Title: Nonoperative treatment of pediatric appendiceal abscess or phlegmon
Yi-Jung Chang 1, Man-Shan Kong 1, Ming-Wei Lai 1, Shao-Hsuan Hsia 1, Chang-Teng Wu 1, Hsun-Chin Chao 1
1) Chang Gung Memorial Hospital, Taoyuan, Taiwan
Summary:
Object: Appendicitis is the most common gastrointestinal emergency in children. Younger children present with more advanced appendicitis involving perforation and possible abscess or phlegmon formation than adult. In this study, we review the children with initial nonsurgical treatment for appendiceal abscess or phlegmon, with emphasis on clinical characteristic, outcome, and seek the risk factor for the failure in conservative medical treatment. Material and method: The medical records of all children with initial nonoperative therapy for acute appendicitis at Chang Gung Children’s hospital between 2003 to 2007 were retrospective reviewed. Those children who underwent appendectomy before initial treatment plan were defined as failure of the nonoperative management. To determine the success rate and the risk factor for the failure in nonoperative treatment, possible risk factor including age, sex, onset of symptoms to diagnosis, laboratory data, and image finding were analyzed. Statistical significance was determined by using the Fisher Exact and Mann-Whitney test. Result: Fifty-one children (24 boys) with appendicitis were treated initially nonoperatively. There were an average age of 9.3 ± 3.5 years. The mean length of duration of symptom was 7.4 ± 5.0 days. At the time of referral to our unit, the mean white cell count (WBC) was 15.6(±6.0)×109/L. The mean C-reactive protein (CRP) was 145.1(±99.7) mg/L. Ultrasound was performed in 46 patients with the initial 91.3% sensitivity of acute appendicitis. The 14 appendiceal phlegmon and 37 appendiceal abscesses were confirmed by the series radiologic evaluation. The success rate for initial nonoperative therapy was 78.4% (40/51). There was no significant difference between successful and failure groups when comparing presenting symptoms, duration of symptoms, WBC, and present of abscess
or appendicolith. The mean CRP was significantly higher in the failure group (118.9 ± 35.8 mg/L vs 97.3 ± 15.4 mg/L; p<0.05). The postoperative hospital stay in those 51 children was with average 3.6 ± 0.9 days. No patient had postoperative readmission for residual abdominal abscess or adhesion ileus. Conclusion: Most children with appendiceal abscess or phlegmon can be treated successfully initial with antibiotics. The higher CRP level is associated with failure of nonoperative management. The initial nonoperative treatment of pediatric appendiceal abscess or phlegmon is benefit for postoperative outcome.

P0571

Title: Spleen abscesses in children: a single center experience

Yi-Jung Chang 1, Yi-Jung Chang 2, Man-Shan Kong 1, Man-Shan Kong 2, Ming-Wei Lai 1, Ming-Wei Lai 2, Shao-Hsuan Hsia 1, Shao-Hsuan Hsia 2, Hsun-Chin Chao 1, Chang-Teng Wu 1, Chang-Teng Wu 2, Hsun-Chin Chao 2
1) Chang Gung Memorial Hospital, Taoyuan, Taiwan

Summary:
Object: Spleen abscesses are rarely in children and are potentially life-threatening conditions in nonrecognized and untreated cases. The recommended treatment has been a combination of total splenectomy and appropriate antibiotic therapy. However, an increasing number of patients is now being managed conservatively, thereby avoiding splenectomy. The aim of this study was to investigate the clinical features and management in children with spleen abscesses for benefiting diagnosis and treatment. Material and method: we analyzed our database of all children (<18 years of age) between 1995 and 2005 and performed a case note review of all patient with a radiologically proven spleen abscess. Clinical features, demographic details, radiological information, and treatment were analyzed. Result: We study 6 cases (4 boys), with median age 6 years (range 1 year to 8 years). The median length of duration of symptoms at the time of diagnosis was 11 (range 3-27) days. In two cases, spleen abscesses developed in children with acute leukemia under chemotherapy and in another two cases subsequent to operations with colon perforation and traumatic spleen. Clinically, five patients presented fever, one with chest pain, four with abdominal pain, and one had Irritability. The image confirmed the diagnosis. The ultrasound revealed splenic lesions with 100% sensibility. Two children with acute leukemia had multiple splenic microabscesses. The pathogen was isolated in two patients (33%). One with group A Streptococcus and the other had the mixed flora with viridans streptococci, and Bacteroides fragilis. Combined treatment with drainage and broad-spectrum intravenous antibiotics (cephalosporin, metronidazole, and gentamicin) were performed in one patient. Intravenous antibiotics was used in the other 5 children (including 2 with amphotericin B, fluconazole in acute leukemia with multiple spenic microabscess). They were subsequently modified according to antibiotics sensitivities of the culture and clinical response. The median duration of intravenous antibiotic treatment was 4 (range 1-4.5) weeks. The conservative treatment was successful in all patient by clinical improvement and sonographic follow-up. Conclusion: Spleen abscess is a rare diagnosis in children. Conservative parenteral antibiotic therapy guided by microbiological sensitivitie therapy guided by microbiological sensitivities with sonographic follow-up are recommended.

P0572

Title: Immune response to influenza vaccine in children with inflammatory bowel disease

Ying Lu 1, Lori Ashworth 1, Anthony Meyer 2, Monica McNeal 2, Denise Jacobson 3, Athos Bousvaros 1
1) Children’s Hospital, Boston, USA 2) Children’s Hospital, Cincinnati, USA 3) Harvard School of Public Health, Boston, USA

Summary:
OBJECTIVE: Patients with inflammatory bowel disease (IBD) including Crohn’s disease (CD), ulcerative colitis (UC), and indeterminate colitis (IC) are frequently on immunosuppressive therapies (e.g., azathioprine). The immune response in these patients to routine childhood vaccines has not been well studied. We conducted a prospective, open label study to evaluate the seroprotective immune response to influenza vaccine in children with IBD. METHODS: We enrolled 146 children and young adults with IBD (88M:58F; mean age 15.4 ± 3.9y; 96 CD, 47 UC, 3 IC). All patients had a baseline hemagglutination inhibition titer drawn prior to immunization (pre-vaccination). After the baseline titer was drawn, patients were immunized with an inactivated vaccine to three strains of influenza: A/Solomon Islands/3/2006 (A/H1N1), A/Wisconsin/67/2005 (A/H3N2), and B/Malaysia/2506/2004. Each patient returned for a repeat titer 3-9 weeks after immunization (post-vaccination). Seroprotection to each influenza strain was defined as having a hemagglutination inhibition titer ≥ 1:40. Patients were categorized by the IBD therapy they received: salicylates only or no therapy (non-immunosuppressed), immunomodulators (6MP/AZA/MTX), tacrolimus (TAC), or TNF inhibitors (infliximab/adalimumab/thalidomide).

RESULTS: The data shown are from the first 92 patients enrolled in the study (TABLE). The percentage of patients with a seroprotective titer at each time point (pre-vaccination, post-vaccination) is shown in the table. The prevalence of seroprotection was higher at baseline for the A/H1N1 and A/H3N2 strains than for the B strain. At least 90% of patients in each group had a seroprotective titer to the two influenza A strains after vaccination irrespective of the type of immunosuppressive therapy. In contrast, patients receiving TNF inhibitors were less likely to have a seroprotective titer to
strain B after immunization compared to the other groups (p<0.02). CONCLUSION: Influenza vaccination results in a high prevalence of seroprotection when administered to IBD patients, particularly to the A strains of influenza. Routine administration of this vaccine to IBD patients is recommended whether or not patients are receiving immunosuppressive medications.

P0573

Title:
H. pylori infection decreases serum active ghrelin level but not the appetite and body weight in schoolchildren

Shu-Ching Huang 1, Yao-Jong Yang 1, Bor-Shyang Sheu 2
1) Departments of Pediatrics, National Cheng Kung University Hospital, Tainan, Taiwan 2) Departments of Internal Medicine, National Cheng Kung University Hospital, Tainan, Taiwan

Summary:
Objectives: The gastric ghrelin was associated with appetite and regulated by chronic H. pylori infection. This study aimed to investigate whether H. pylori infection decreased serum active ghrelin level and further resulted in poor appetite and low body weight and height in children. Methods: This study had enrolled healthy schoolchildren aged 4 to 12 years old: A questionnaire addressing the issues of underling diseases, H. pylori infection status, intake habits, and appetite scores (AS) was reviewed by the individual and his parents. After obtaining informed consents from the parents, sera samples of children were tested for anti-H. pylori IgG antibody and active ghrelin level by ELISA methods. Results: A total of 837 schoolchildren received screening with anti-H. pylori IgG. The 13C-urea breath test confirmed 58 (85%) of 68 seropositivity and 4 (20%) of 20 borderline seropositivity to be H. pylori infected (n = 62). The H. pylori-infected children had a significantly lower serum active ghrelin level than age and gender-matched controls (40.2 vs 83.4 pg/ml, p < 0.001). However, the body weight, height, body mass index, and AS did not differ (p > 0.05) between H. pylori-infected and non-infected children. Conclusions: H. pylori infection decreased the serum active ghrelin level but

P0574

Title:
Helicobacter pylori Infection Decelerates Body Weight and Height Growth in Schoolchildren

Yi-Yuan Tseng 1, Yao-Jong Yang 1, Bor-Shyang Sheu 2
1) Department of Pediatrics, National Cheng Kung University and Hospital, Tainan, Taiwan 2) Department of Internal Medicine, National Cheng Kung University and Hospital, Tainan, Taiwan

Summary:
Objective: Helicobacter pylori infection is associated with low body weight and height in children. This study aimed to evaluate the distinction of weight and height growth in schoolchildren with and without H. pylori infection. Methods: Four hundred healthy schoolchildren aged 6-13 years were investigated the H. pylori infection using Enzyme-linked immunosorbent assay (ELISA) test. The seropositive children were tested by 13C-urea breath test (UBT) for ongoing H. pylori infection. The body weight (BW) and height (BH) were measured at the beginning of study and the 12th and 18th month follow-up. The net changes of BW, BH and body mass index (BMI) were used to determine the growth velocity in H. pylori-infected and non-infected children. Results: The seroprevalence of H. pylori infection was 9.5% (38/400) of the participants. The 13C-UBT was positive in 24 of 33 seropositive children. Twenty-four H. pylori-infected and 315 non-infected children completed follow-up. On the beginning of study, the mean of BW, BH and BMI were not different between children with and without H. pylori infection (P > 0.05). The net changes of BW (2.8 vs. 4.12 kg, P = 0.04), BH (5.25 vs. 5.86 cm, P = 0.07) and BMI (0.59 vs. 0.37 kg/m2, P = 0.08) in H. pylori-infected children were lower than non-infected ones at the 12th month. The net changes of BW (4.78 vs. 6.51 kg, P = 0.04) and BMI (0.91 vs. 0.31 kg/m2, P = 0.04) in H. pylori-infected children were lower than non-infected ones at the 18th month. The negative effect of H. pylori infection on weight and height growth occurred in both old (≥10 years) and young (< 10 years) children and was independent to gender. Conclusions: H. pylori infection decelerates body weight and height growth in schoolchildren. Therefore, we suggest eradication of childhood H. pylori infection could improve the body weight and height growth.

P0575

Title:
The therapeutic role of antimicrobial susceptibility test in H. pylori-infected children

Yao-Jong Yang 1, Bor-Shyang Sheu 2
1) Departments of Pediatrics, National Cheng Kung University Hospital, Tainan, Taiwan 2) Departments of Internal Medicine, National Cheng Kung University Hospital, Tainan, Taiwan
Summary:
Objectives. This study is aimed to evaluate the therapeutic role of endoscopic bacteria culture and antimicrobial susceptibility test in children with H. pylori infection. Methods. This study enrolled consecutive children undergoing panendoscopic examinations for upper gastrointestinal symptoms. H. pylori infection was based on tissue culture or positive results of any two involving tests, including rapid urea test (RUT), histology, and 13C-Urea breathing test (13C-UBT). Patients diagnosed with H. pylori infection were allocated to two groups based on culture results. Patients with culture-positive were treated according to the susceptibility test. The culture-negative patients were treated with clarithromycin-based triple therapy. The successful eradication was confirmed by 13C-UBT 8 weeks after complete therapy. Results. A total of 28 (18 culture-positive and 10 culture-negative) of 33 H. pylori-infected children completed the eradication therapy. H. pylori isolates were resistant to amoxicillin, clarithromycin, and metronidazole was 0, 15%, and 10%, respectively. The eradication rate of culture-positive group was evidently higher than that in culture-negative group (89% vs. 70%, OR: 3.4, P = 0.32). Conclusions. Endoscopic bacterial culture and antimicrobial susceptibility test offered a higher eradication rate than clarithromycin-based triple therapy in symptomatic H. pylori-infected children. The cost-benefit of antimicrobial susceptibility test for childhood H. pylori eradication should be widely studied.

P0576

Title: Habitual constipation in children: It's all in the family!!
Waseem Ostwani 1, Mary rewalt 1, Yoram Elitsur 1
1) MArshall University, Huntington, West Virginia, USA

Summary:
Background: Habitual, non-retentive constipation in children is one of the most common diagnoses in the primary care physician's clinic, with an increasing incident rate every year. Although the genetic nature of this disease is not known, recent data in adults showed a tendency towards familial clustering. Similar data are not available in the pediatric population. Objective: To investigate familial clustering of habitual constipation in the pediatric patients. Methods: Pediatric patients, who attended the general pediatric and the gastroenterology clinics at Marshall University, were prospectively recruited to the study. Children with the diagnosis of functional, non-retentive constipation from both clinics constituted our study population. Aged matched children with no constipation were the control group. Constipation was established according to the revised Rome-III criteria for children and adults. The diagnostic criteria were reviewed in the family members of each participant. Exclusion criteria included children <6 months old, children from broken families (single parent, divorced families), and children with various neuromuscular diseases. Results: A total of 87 families were recruited of whom 33 had constipated probands (test group) and 54 families were in the control group. A total of 242 family members completed the questionnaires. Significantly more family members from the test group (siblings and/or parents) had constipation compared to the control group (p<0.04; Table1) Conclusion: Habitual constipation in children seemed to cluster in families. The pathophysiology behind this phenomenon is unknown.

P0577

Title: Grandmother as source of Helicobacter pylori infection
Yoshihisa Urita 1, Toshiyasu Watanabe 1, Tadashi Maeda 1, Yosuke Sasaki 1, Kazuo Hike 1, Motonobu Sugimoto 1
1) Department of General Medicine and Emergency Care, Toho University, Tokyo, Japan

Summary:
Objectives: The prevalence of Helicobacter pylori (H.pylori) antibodies increases with age and the main period of acquisition is reported to be childhood. However, the route of transmission of H.pylori infection remains unclear. The aim of this study is to examine the pattern of acquisition and transmission of H.pylori infection in the family members of children with a mean internal of at least 2 years. Methods: H.pylori IgG antibody concentrations were measured in 838 consecutive children (age range, 1-18years) at the first visit. Of these 838 children, 296 were measured in two samples taken with 2-6.8 year intervals (Mean 3.0 years). The family members of these children consisted of 448 fathers, 597 mothers, 205 grandfathers, 361 grandmothers and 589 siblings. H.pylori IgG antibody concentrations were measured with an ELISA method (HM-CAP). The calculated ELISA is read as positive if the ELISA value is >2.2, negative if <1.8, and indeterminate if it is between 1.8 and 2.2. Results: Of 838 children, 101(12%) were seropositive. The acquisition rate of H.pylori infection in childhood was 2.2% per person year. Most of the acquisitions occurred in children aged 11-16 years. H.pylori acquisition in children aged 5 to 15 was correlated with the prevalence of their siblings. Conclusion: Seroconversions in the study population seem to take place at somewhat higher rate than previously described in childhood. Most of the acquisitions occurred in children aged 11-16 years. Intrafamilial child-to-child transmission is more important than mother-to-child transmission in children aged more than six.
**P0578**

**Title:** Serum pepsinogen levels and H.pylori infection in children

Yoshihisa Urita 1, Toshiyasu Watanabe 1, Tadashi Maeda 1, Yosuke Sasaki 1, Kazuo Hike 1, Motonobu Sugimoto 1

1) Department of General Medicine and Emergency Care, Toho University, Tokyo, Japan

**Summary:**

Objectives: Serum pepsinogens (PG) have been used as biomarkers of gastric mucosal status, including atrophic change, and inflammation before the discovery of Helicobacter pylori (H.pylori). Although serum PG1 and PG2 levels are known to increase in the presence of H.pylori-related non-atrophic chronic gastritis in adults, there are few reports of the relationship between serum PG levels and H.pylori infection in children who are considered to keep the infection for shorter periods. The aim of this study is to evaluate the difference in serum PG levels between H.pylori-infected and non-infected children. Methods: H.pylori IgG antibody and serum PG levels were measured in 522 consecutive children (age range, 1-18 years) and 2111 adults (age range, 20-88 years) at the first visit regardless of their symptoms. H.pylori IgG antibody concentrations were measured with an ELISA method (HM-CAP). The calculated ELISA is read as positive if the ELISA value is >2.2, negative if <1.8, and indeterminate if it is between 1.8 and 2.2. Results: H.pylori IgG antibody was detected in 85 children and 1478 adults. In H.pylori-infected subjects, serum PG1 was increased with age and peaked at 20-29 year of age, whereas PG2 was peaked at 17-18 year of age and plateau later. In non-infected subjects, both serum PG1 and PG2 were increased with age and peaked at 40-49 year of age. PG1 levels were significantly higher in H.pylori-infected subjects aged more than 10 years than in non-infected subjects, whereas there were significant differences in serum PG2 level between H.pylori infected and non-infected children aged less than 10 years. Conclusion: These results suggest that serum PG2 could be considered a useful marker for gastritis in children. In contrast, PG1/PG2 ratio should be used as an index of atrophic gastritis in adults aged older than 40 years.

**P0579**

**Title:** ESOPHAGEAL PHMETRY IN VARIOUS CLINICAL MANIFESTATIONS OF GASTROESOPHAGEAL REFLUX IN INFANTS

Yu K L Koda 1, Eliana Vidolin 1, Marcos J Ozaki 1, Renato C Mattar 1, Liane G Okamoto 1, Kelly Murasca 1

1) AREA DE GASTROENTEROLOGIA DO INSTITUTO DA CRIANÇA DO HOSPITAL DAS CLINICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SAO PAULO, SÃO PAULO, BRAZIL

**Summary:**

Objectives: To study the indications and the results of prolonged esophageal pH monitoring in the evaluation of Gastro esophageal Reflux Disease (GERD) in infants in a Pediatric Gastrointestinal Service. Methods: Retrospective study of 307 esophageal pHmetry performed in infants during the period of December/1993 - August/2007. The infants were divided into groups, according to the clinical manifestations that motivated the indication of pHmetry: Group I (digestive); II (respiratory); III (digestive and respiratory); IV (cyanosis crisis/apnea) and V (others). Mark III Digitrapper (Synectics Medical, Stockholm, Sweden) was used, and the four classic parameters of the recordings were analyzed by EsopHgram version 5.7 software. Results: 124 (40.4%) infants were female and 183 (59.6%) male with mean age 12.2±6.2 (1-23mo). 148 (48.2%) aged between 1-12mo and 159 (51.8%), 13-23mo. 131 (42.7%) attendances were made by public health system and 176 (57.3%) by private health care. Esophageal pH monitoring were indicated in 20.2%, 39.1%, 21.2%, 13.7% and 5.8% of infants respectively in groups I, II, III, IV and V. 56 (18.2%) infants had abnormal exams. Of this abnormal exams, 23/56 (15.5%) and 33/56 (20.7%) belonged respectively to age groups of 1-13mo and 13-23mo and 29/56 (22.1%) and 27/56 (15.4%) respectively to public health system and private health care attendances. Abnormal pHmetry were found in 24.2% of group I, 12.5% of II, 21.5% of III, 23.8% of IV and 11.1% of V. No statistically significant differences were present between different analyzed variables. Conclusions: 1. the frequency of pathologic GER revealed elevated in infants; 2. there were no differences in frequency of pathologic GER between different age groups, types of attendance and indications of esophageal ph monitoring.

**P0580**

**Title:** EVALUATION OF ANTHROPOMETRIC DATA OF ADOLESCENTS WITH INFLAMMATORY BOWEL DISEASE AT CLINICAL REMISSION AND AT DIAGNOSIS

Yu K L Koda 1, Patricia W Caldeira 1, Maria A S Rego 1, Rosana Tumas 1, Eliana Vidolin 1, Glaucé H Yonamine 1

1) ÁREA DE GASTROENTEROLOGIA DO INSTITUTO DA CRIANÇA DO HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, SÃO PAULO, BRAZIL
Summary:
Objective: To evaluate the sexual maturity in adolescents with Inflammatory Bowel Disease (IBD) at the time of clinical remission. Methods: 27 adolescents, 16 Ulcerative Colitis (UC) and 11 Crohn’s disease (CD) were evaluated. 13 were female and 14 male. Disease activity was measured using the Pediatric Crohn’s Disease Activity Index score (PCDAI) for CD patients and the Modified Truelove and Witts Severity Index score (MTWSI) for UC. PCDAI <10 and MTWSI <4 were considered in clinical remission. Age at menarche in girls, age at first ejaculation episode in boys and, age at onset of sexual activity were obtained by one investigator during interview. Self-assessment and the assessment by one investigator of sexual maturity status (SMS) were conducted by using the drawings and descriptions of the 5 Tanner stages for breast and pubic hair development in girls and genital and pubic hair development in boys. The adolescents rated themselves in a private setting during the research visit and parents were not allowed to assist their children in the assessment. The investigator’s assessment was conducted on the same day independently, as part of the physical examination. The results of the self-assessment of SMS were compared with those from the investigator’s assessment and revealed to be reliable. Results: Mean age at the study was 14.6±2.6 yr (10.3-19.7). Mean PCDAI and MTWSI scores were respectively 1.4±3.3 (0-10) and 1.6±0.9 (0-3). Menarche occurred in 8/13 girls and mean age at menarche was 14.0±1.4yr (13-17.5). None was sexually active. Spermarche occurred in 9/14 of the boys and mean age at first ejaculation was 13.9±1.5 yr (12-17). Three were sexually active. Delayed puberty could be diagnosed undoubtedly in only one 18.2 yr old girl. Four boys had already completed their puberty but, because of the lack of a definitive pubertal landmark in males like menarche in females, it was impossible to infer how the progression of puberty had occurred in them. 10/27 of the adolescents (8 girls and 2 boys) showed a pattern of late sexual maturation. Possibly, these adolescents either had delayed their entry into pubertal development or progressed very slowly between the stages. Conclusions: In this study, delay at the occurrence of the pubertal landmarks and a pattern of late sexual maturation were quite commonly found in IBD adolescents at clinical remission.

Title:
EVALUATION OF SEXUAL MATURITY IN ADOLESCENTS WITH INFLAMMATORY BOWEL DISEASE IN CLINICAL REMISSION

Yu K L Koda 1, Maria A S Rego 1, Patricia W Caldeira 1, Rosana Tumas 1, Marta M Leal 1, Eliana Vidolin 1

1) ÁREA DE GASTROENTEROLOGIA DO INSTITUTO DA CRIANÇA DO HOSPITAL DAS CLÍNICAS DA FACULDADE DE MEDICINA DA UNIVERSIDADE DE SÃO PAULO, SÃO PAULO, BRAZIL

Summary:
Objective: To evaluate the sexual maturity in adolescents with Inflammatory Bowel Disease (IBD) at the time of clinical remission. Methods: 27 adolescents, 16 Ulcerative Colitis (UC) and 11 Crohn’s disease (CD) were evaluated. 13 were female and 14 male. Disease activity was measured using the Pediatric Crohn’s Disease Activity Index score (PCDAI) for CD patients and the Modified Truelove and Witts Severity Index score (MTWSI) for UC. PCDAI <10 and MTWSI <4 were considered in clinical remission. Age at menarche in girls, age at first ejaculation episode in boys and, age at onset of sexual activity were obtained by one investigator during interview. Self-assessment and the assessment by one investigator of sexual maturity status (SMS) were conducted by using the drawings and descriptions of the 5 Tanner stages for breast and pubic hair development in girls and genital and pubic hair development in boys. The adolescents rated themselves in a private setting during the research visit and parents were not allowed to assist their children in the assessment. The investigator’s assessment was conducted on the same day independently, as part of the physical examination. The results of the self-assessment of SMS were compared with those from the investigator’s assessment and revealed to be reliable. Results: Mean age at the study was 14.6±2.6 yr (10.3-19.7). Mean PCDAI and MTWSI scores were respectively 1.4±3.3 (0-10) and 1.6±0.9 (0-3). Menarche occurred in 8/13 girls and mean age at menarche was 14.0±1.4yr (13-17.5). None was sexually active. Spermarche occurred in 9/14 of the boys and mean age at first ejaculation was 13.9±1.5 yr (12-17). Three were sexually active. Delayed puberty could be diagnosed undoubtedly in only one 18.2 yr old girl. Four boys had already completed their puberty but, because of the lack of a definitive pubertal landmark in males like menarche in females, it was impossible to infer how the progression of puberty had occurred in them. 10/27 of the adolescents (8 girls and 2 boys) showed a pattern of late sexual maturation. Possibly, these adolescents either had delayed their entry into pubertal development or progressed very slowly between the stages. Conclusions: In this study, delay at the occurrence of the pubertal landmarks and a pattern of late sexual maturation were quite commonly found in IBD adolescents at clinical remission.

Title:
PERIANAL DISEASE IN CHILDREN AND ADOLESCENTS WITH INFLAMMATORY BOWEL DISEASE

Yu K L Koda 1, Eliana Vidolin 1, Kelly Murasca 1, Liane G Okamoto 1

1) Área de Gastroenterologia do Instituto da Criança do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil
Summary:
Perianal disease (PD) is frequently described in Inflammatory Bowel Disease (IBD), especially in Crohn’s disease (CD). Objectives: To review the clinical features of PD in children and adolescents with IBD as well as its frequency. Methods: Records of 128 children and adolescents with IBD (50 CD, 61 Ulcerative Colitis (UC) and 17 Indeterminate Colitis (IC)) were reviewed. Therapy with antibiotics, local and systemic steroids, metronidazole, mesalazines, immunosuppressors anti-TNF-alfa, enteral and/or parenteral nutrition was used in various combinations. Results: Of 128 children and adolescents, 20 (6 UC, 14 CD and none IC) between 6 months and 14y of age had PD. PD was present in all patients at the moment of diagnosis. Of the 6 patients with UC, 5 had fissures and skin tags and 1 had external fistulas whereas of the 14 with CD, 5 had fissures and skin tags, 3 had external fistulas and abscesses, 4 had internal fistulas and abscesses and 2 had internal fistulas, abscesses and anal canal strictures. Surgery was necessary in 7 patients: dilations of anal canal stricture in 2 and incision and drainage of perianal abscesses in 5. Over a follow-up period ranging from 1 to 17 yr, fistula closure was observed in all patients with external fistulas but, in only 2 with internal fistulas. Comments: PD was present in 15.6% of our patients with IBD. Accordingly to the literature, in our service there were more PD in CD than in UC.

Title:
Celiac Disease today in Mendoza

Yu C Cheang 1, Mariana Torres 1, Ada M Sardi 1, María G Saleq 1
1) Gastroenterology Unit. Pediatric Hospital Dr Humberto Notti, Mendoza, Argentina

Summary:
The Celiac Disease is a permanent intestinal intolerance to dietary gluten and related proteins that cause mucosal damage in genetically susceptible individuals. Objectives: Assess Hospital Notti celiac population epidemiological features. Evaluate clinical form presentation, associated pathologies and nutritional state. Methods: retrospective epidemiological study. It was taken randomly 155 Medical Records from 838 celiac patients diagnosed between January/93 to December/06 using the most appropriate variables. Results: The median age at the first visit was 5.2 years and 2.4 years the age that onset symptoms. Clinical presentation was 64% “classic”, 29% “non classic” and 7% asymptomatic. It was observed that 70% of the patients were malnourished at first visit and 23% at the last control. Low percentage of bread feeding. The average age of the intestinal biopsy was 6.4 years. It was found that 38% of the patients had some associated pathologies and 10% had familiar antecedents of Celiac disease. 61% fulfill the diet. The patients who do not fulfill the diet have two times the risk to malnourish than fulfill (p=0.001). The relation between the patients who come to periodical control and the nutritional state is directly proportional (p=0.0055). Of that who do not come to control approximately 50% is malnourished. Conclusions: There is a delay of 2.8 years between the onset of symptoms and derivation to gastroenterologist. 29% of the patient with atypical form and 7% asymptomatic, these findings compels to sharpen the diagnostic suspicion. The periodic controls and the fulfillment of the GFD are related to the nutritional improvement. It will be necessary to obtain major adhesion to the treatment and clinical follow up as well as social programs of aid for the population with less spending power. A formation, and information policy will attain an early derivation for timely diagnose and effective treatment.

Title:
Clinical evaluation of the Multicare-Bed®

Yvan Vandenplas 1, Thierry Devreker 1, Etienne Denayer 1, Stephanie Verheyden 1, Marianne Peelman 1, Bruno Hauser 1
1) UZ Brussel Kinderen, Brussels, Belgium

Summary:
Aim. Regurgitation and feeding related infant distress is a frequent cause for consult. Material and methods. A special “AR-mattress” was developed in collaboration between our Unit and Peos company (pilot study in about 20 infants); the system allows infants to “hang” relatively comfortable in a 40° inclination in supine position. We tested the efficacy of this bed (single intervention) in 30 babies (3 weeks - 3 months old) referred to the Unit because of frequent regurgitation and inconsolable crying, in which dietary treatment (extensive hydrolysate, AR-formula) and medication (domperidone, H²RA, PPI) had been unsuccessful. The parents filled in a diary (frequency of regurgitation, crying time, time asleep, “overall sleep comfort” on a 1-10 Scale) during 2 days as baseline and during 1 week intervention. An esophageal pH monitoring was performed before inclusion and after 7 days in 12 infants. Results: 8/30 parents stopped the intervention after the 1st or 2nd day, mainly because the infant’s crying increased or because the infant bended over (27% failure). (In the mean time, the problem of “bending over” has been dealt with by increasing the size of the special “hanging-system”.) 22/30 parents were satisfied (sleep comfort (median): “3” before inclusion to “8” after one week). According to the diary, the incidence of regurgitation decreased significantly. The reflux index (% time pH was < 4.0 in the esophagus) was 17.3 % (median 13.6; range 2.1 – 52.5) at inclusion and 8.7 % (median 6.6; range 32.5-0.5) after 1 week (p: 0.007 Wilcoxon-test). Conclusion. The Multicare-Bed® is reasonable effective in the majority of a group of infants presenting with persistent crying and frequent regurgitation not responding to reflux medication (domperidone, H²RA, PPI) and dietary treatment (AR formula, extensive hydrolysate). A significant decrease of esophageal acid expo-
sure is demonstrated. The Multicare-Bed® can be considered especially in infants in whom history suggests a close time relation between feeding and regurgitation and distress.

P0585

Title: IS THERE A CHANGE IN RESISTANCE PATTERN OF HELICOBACTER PYLORI IN CHILDREN IN THE BRUSSELS AREA?

Thierry Devreker 1, Mark van Oort 3, An Naessens 2, Bruno Hauser 1, Yvan Vandenplas 1
1) UZ Brussel Kinderen, Brussels, Belgium 2) UZ Brussel, Department of Microbiology, Brussels, Belgium 3) Atrium MC, Heerlen, The Netherlands

Summary: Introduction. Helicobacter pylori (HP) is one of the most studied pathogens during the last two decades. Knowledge about this germ is still increasing; treatment is still a challenge. Treatment is proven to be more successful when at least triple therapy is given, two antibiotics combined with a proton-pump inhibitor. Material and methods. Cultures were collected from 1998 through 2006. Results. The number of HP positive patients did not change over time. Susceptibility to claritromycin, metronidazole and ampicillin were analysed in 258 HP strains isolated during the period 1998 through 2006 from 250 children. No resistance to ampicillin was detected. Overall, resistance to clarithromycin and metronidazole was 35% and 23%, respectively. There was no significant change in resistance over the years. During the period 1999-2002 resistance for claritromycin was 47.5% and for metronidazole 25%. During the period 2003-2006, resistance decreased to 20% for clarithromycin and 13.5% for metronidazole. Although the resistance to metronidazole is lower, the risk of being resistant to both antibiotics in this group is higher, 52% vs 32% (p<0.0048). Conclusion. Over the past eight years, no significant difference in resistance pattern for HP was observed. Because resistance of HP to metronidazole is lower than to clarithromycin, and because half of the HPs that are resistant to metronidazole are also resistant to clarithromycin, a combination of ampicillin and metronidazole is recommended.

P0586

Title: The anti-regurgitation Multicare-Bed® and sleep.

Yvan Vandenplas 1, Bruno Hauser 1, Thierry Devreker 1, Etienne Denayer 1
1) UZ Brussel Kinderen, Brussels, belgium

Summary: Positional treatment in prone 30° anti-Trendelenburg position was recommended in infant regurgitation until a clear relation between prone sleeping and sudden infant death was demonstrated. The Multicare-Bed® decreases infant regurgitation and acid reflux by placing the infants in a 40° supine anti-Trendelenburg sleeping position. Method We tested the effect of the 40° supine anti-Trendelenburg sleeping position in 16 infants with symptoms suggesting GER-disease and treated with undergoing polysomnography. All infants slept at random for about 4 hours in “flat supine” and 4 hours in the 40° supine anti-Trendelenburg sleeping position during a one night polysomnographic recording. The tracings were read-out by the same expert (ED), blinded for the sleeping position. The number of obstructive apneas per hour, number of sighs and number of arousals per hour were calculated. Results There was no statistical significant difference between the flat horizontal and 40° anti-Trendelenburg sleeping position for any of the parameters evaluated. Conclusion The particular sleeping position seems not to influence the quality of sleep.

P0587

Title: Diaphragmatic Eventeration - A Rare Cause of Recurrent Abdominal Pain

Zahangir Khaled 1, Hemalatha G. Rangarajan 1, Ravindra K. Vegunta 1
1) University of Illinois College of Medicine at Peoria and Children’s Hospital of Illinois, Peoria, USA

Summary: Introduction: Diaphragmatic eventration is a condition whereby the diaphragm is raised, atrophied and thinned out. It usually presents in early neonatal period or in infancy with respiratory distress. It has been rarely reported in later childhood. Objective: To report a case of diaphragmatic eventration who presents with recurrent abdominal pain. Case Summary: A 12 year old white Caucasian female presented to the office with history of intermittent abdominal pain of 3 months duration. The pain was predominantly in the epigastric region and was aggravated by ingestion of food. Despite being on prevacid for 2 weeks, she continued to be symptomatic. There was no history of vomiting and her bowel movements were normal. Past medical history was not contributory. She was a keen participant in the athletic activities at her school. She however had no symptoms
of dyspnea after strenuous physical activity. Physical examination revealed epigastric tenderness, but was otherwise normal. She was seen in the GI clinic and underwent an upper GI endoscopy. The endoscopy revealed an unusual position of GE junction. A subsequent upper GI series revealed elevated left dome of diaphragm, stomach in chest cavity with gastric volvulus but no herniation of the stomach. CT scan of the chest and abdomen confirmed eventration of the diaphragm on the left side. Plication of the diaphragm with an overlay of an alloderm graft was done thoracoscopically. There was recurrence of diaphragmatic eventration in the immediate post operative period. Four weeks later a repeat plication along with gastropexy was carried out. Follow up CT scan showed resolution of diaphragmatic eventration. Discussion: Diaphragmatic eventration is a rare condition, which is characterized by replacement of diaphragm muscle by fibro-cartilaginous tissues. It is more common in males and occurs on the left side. It can be congenital or acquired. The later is usually due to birth trauma to the phrenic nerve. This can be confused with a diaphragmatic hernia. The latter is characterized by a gap through which the hernia occurs. The underlying lung is usually well developed in an eventration compared to a diaphragmatic hernia. Conclusion: Recurrent abdominal pain can be a presentation of diaphragmatic eventration in older children. In our experience, gastropexy along with plication yields better result than plication alone for the treatment of this condition.

**P0588**

**Title:**

TREATMENT WITH AN OX40 SPECIFIC AGONISTIC ANTIBODY UP-REGULATES FOXP3+ REGULATORY T CELLS AND ATTENUATES DEXTRAN SULFATE SODIUM -INDUCED COLITIS

Zili Zhang 1, Wenwei Zhong 1, Keith Wegmann 2, David Hinrichs 2
1) Oregon Health & Science University, Portland, USA 2) Portland VA Medical Center, Portland, USA

**Summary:**

Objective: Inflammatory Bowel Disease (IBD) is characterized by recurrent and serious intestinal inflammation. Regulatory T (Treg) cells play an essential role in controlling intestinal inflammation. CD4+CD25+Foxp3+ lymphocytes are a well-documented subpopulation of Treg cells. These Treg cells exert an immune modulatory effect mainly through their production of interleukin (IL)-10. However, the molecular mechanism of Treg cell activation remains to be fully elucidated. Unlike other effector T cells, the majority of CD4+CD25+Foxp3+ T cells constitutively express OX40 (a co-stimulatory molecule). Therefore, this study was performed to determine whether in vivo infusion of an agonistic OX40 specific antibody would expand and/or up-regulate peripheral Foxp3+ Treg cells and consequently attenuate dextran sulfate sodium (DSS)-induced colitis. Methods: We induced colitis in wild type (Wt) and IL-10 knockout mice by providing them with 4% dextran sulfate sodium (DSS) in water. Some mice were treated with 100 ug OX40 antibody 7 days prior to DSS challenge. The body weight of all mice was monitored daily as a marker of colitis severity during the 10-day course of DSS treatment. Histology and IL-6 were assessed subsequently in the colons of these mice to assess the severity of colitis. CD4+CD25+Foxp3+ Treg cells were measured by flow cytometry. Results: The mice that received the OX40 antibody had a significant expansion of Foxp3+ Treg cells after day 7 of OX40 antibody administration. Moreover, these animals were protected from DSS-induced colitis as evidenced by virtually no weight loss and less production of colonic IL-6. To further elucidate the OX40-mediated anti-inflammatory mechanism, we examined the protective effect of the OX40 antibody in IL-10 knockout mice. In contrast to their wild-type counterpart, DSS-induced colitis was not markedly alleviated in IL-10 knockout mice despite expansion of their CD4+CD25+Foxp3+ cells. Conclusions: This study demonstrates that in vivo administration of an agonistic antibody directed to the OX40 surface molecule leads to increased numbers of Foxp3+ Treg cells in naive mice. The expansion of the regulatory T cell subset coincides with a significantly reduced development of colitis following DSS ingestion. Finally, our data indicate that IL-10 is a crucial effector cytokine of Treg cells activated by OX40 stimulation.

**P0589**

**Title:**

Vitamin D insufficiency in patients with Autoimmune Hepatitis at the onset of the treatment

Ana Carolina Arias Cau 1, Alina Fucci 1, Adriana Afazani 1, Claudia Insua 1, Carlos Quintana 1, Oscar Brunetto 1
1) División Endocrinología y Servicio de Gastroenterología Hospital de Niños Dr. Pedro de Elizalde, Buenos Aires, Argentina

**Summary:**

Vitamin D is one of the most important determinants of the bone mineralization with PTH, minerals, genetic and environmental factors. Bone mass acquisition during the childhood and adolescence depend on these factors. Bone metabolism in autoimmune hepatitis can be affected by the use of glucocorticoids and immunosuppressant, nutrition disorders, delayed puberty and growth, vitamin D deficiency. Aim: analyze the vitamin D prevalence and bone mineral density at the diagnosis in patients affected with Autoimmune Hepatitis (AI). Patients: 20 patients (17 females) were evaluated in auxologic and biochemical aspects. Lumbar spine bone densitometry was performed (Hologic QDR 4500).Results: age (mean ± SD) was 10.37 ± 2.7 2, height: -0.21 ± 1.11, Laboratory: PTH: 34.54 pg/ml ± 28.67 (range: 1 – 92), 25 (OH) vitamin D: 32 ng/ml ± 19.33 (range: 4.9 – 90). Calcium and phosphorus levels were normal in all patients. BMD Lumbar Spine (n: 14 patients) expressed in ZScore were (mean ± SD): -0.71 ± 1.86 .Three patients presented Z score below – 2 SD. Five patients (25%) presented vitamin D deficiency and three patients (15%) insufficiency. In the whole
group negative correlation between PTH levels and 25 (OH) D was observed (p:0.007, R:0.596). Conclusions: Vitamin D deficiency was observed in a high percentage of patients at diagnosis of AI. Bone densitometry follow up is an important tool in this disease. At the moment of the therapeutic decision it is necessary to consider the high frequency of vitamin D insufficiency and deficiency among these patients.

P0590

Title: Cholestatic jaundice in children less than 2 years old: Two year review of liver biopsies

AJ Terblanche 1, C Campaini 2, DF Wittenberg 1
1) Department of Paediatrics and Child Health, University of Pretoria, Pretoria, South Africa 2) Department of Anatomical Pathology, University of Pretoria and National Health Laboratory Services, Pretoria, South Africa

Summary: Cholestatic jaundice in children less than 2 years old: Two year review of liver biopsies AJ Terblanche, C Campaini, DF Wittenberg Department of Paediatrics and Child Health. Department of Anatomical Pathology and National Health Laboratory Service. University of Pretoria, South Africa

Introduction Cholestasis in early life reflects a diverse group of aetiologies. Prompt identification and diagnostic assessment are imperative to recognize disorders amendable to treatment. Our clinical impression of an increased number of neonatal hepatitis cases in our hospital prompted further investigation. Objectives To review the prevalence of the various histopathological categories found in infants with cholestatic jaundice in our setting, and compare it to that described in the literature. Methods A retrospective analysis of all liver biopsies performed in infants less than 24 months of age presenting mainly with cholestatic jaundice at the Pretoria Academic and Kalafong Hospitals from January 2006 to April 2008.

Results A total of 51 liver biopsies were performed at the median age of 5 months (range 4 days to 18 months). The histopathological findings were as follows: neonatal hepatitis 15 (29%), extrahepatic biliary atresia 13 (25%), liver cirrhosis with uncertain etiology 6 (12%), ascending cholangitis 3 (6%), bile duct paucity 3 (6%), intrahepatic cholestasis with uncertain etiology 4 (8%), non specific changes 3 (6%), veno-occlusive disease 2 (4%), Gaucher’s disease 1 (2%), cavernous hemangioma 1 (2%).

Discussion In comparison to the estimated frequency of the various clinical categories of cholestasis reported in the literature, the prevalence of extrahepatic biliary atresia (25-30%), intrahepatic cholestasis syndromes (20%) and infective causes (2-5%) were fairly similar. Neonatal hepatitis, however, is significantly more prevalent in our series and is the most common cause: 29%. This is virtually double the expected 15% frequency in the literature. Many patients present late with established cirrhosis. Conclusion The prevalence of neonatal hepatitis shown in this series exceeds the usual frequency described in the literature by far. This study serve as a pilot study for further investigation of the possible causes, including the effect of HIV infection, Nevirapine exposure as part of the Prevention of Mother to Child Transmission Programme, toxicity of traditional herbal medication administered and geograph.

P0591

Title: Age dependency of Galactose Elimination Capacity in children

Aksel Lange 1, Henning Grønbæk 2, Hendrik Vilstrup 2, Peter Ott 2, Susanne Keiding 2
1) Pediatric Department, Skejby Hospital, Aarhus University Hospital, Aarhus, Denmark 2) Department of Medicine, Aarhus University Hospital, Aarhus, Denmark

Summary: Aim: The Galactose Elimination Capacity (GEC) is a quantitative liver function test commonly used in adult liver patients as a prognostic factor in acute and chronic liver failure. It has, however, never been evaluated in children. The aim was to describe GEC in children with and without liver disease. Methods: GEC was measured in 9 healthy children and 31 patients (age 0-15 years) with a variety of liver diseases. Galactose 50% (1 ml/kg) was given i.v. and GEC calculated from the blood galactose concentration decay curve corrected for urine excretion. A total of 86 measurements were performed. Results: GEC in children was significantly higher than in adults and fell with child age with teenagers approximating adult values (Fig. 1). GEC was lower in children with liver affection (high ALAT and INR) compared to children with normal liver parameters at the same age. In 2 patients with alpha-1-antitrypsin deficiency liver transplantation was performed. The GEC before transplantation is marked with a circle in the figure. Conclusion: This study presents for the first time measurements of the GEC liver function test in children. We observed that GEC is markedly and negatively associated with age and was lower in children with severe
liver disease. The results indicate that GEC may be clinically useful for quantitatively evaluation of liver function in children with liver diseases.

P0592

Title:
MANAGEMENT OF EXTRAHEPATIC PORTAL HYPERTENSION IN CHILDREN

Aleksandar Lj. Sretenovic 1, Zoran Krstic 1, Vojislav Perisic 1, Dragana Vujovic 1, Vladan Mladenovic 1, Bozina Radevic 2
1) University childrens hospital, Belgrade, Serbia 2) Institute for cardiovascular surgery, Belgrade, Serbia

Summary:
We are presenting a single-center prospective study of consecutive children who underwent elective portal systemic shunts and partial resection of the spleen as a treatment for recurrent bleeding from esophagogastric varices, splenomegaly and blood dyscrasia caused by extrahepatic portal hypertension (EHPH) associated with portal vein thrombosis (PVT). Forty five consecutive pediatric cases with EHPH (age range, 2 to 16 years) underwent shunting procedures between July 1996 and July 2007, except one child with complete portal-mesenteric-splenic thrombosis. Type of shunt included: distal splenorenal (n = 39), central spleno-renal (n = 2) and latero-lateral spleno-renal (n = 3). Partial resection of the spleen was performed in 16 patients due to enormous splenomegaly and blood dyscrasia including thrombocytopenia, leucopenia and anemia. During the follow-up (range; 2 months to 11 years), 41 shunts were patent, 3 were blocked. Four patients required re-admission due to either anastomotic stenosis (3) or appositive portal clot grow. Two of them rebleed. Variceal bleeding was controlled by endoscopic sclerotherapy in both cases. Subtotal splenectomy fully reverse hematological abnormalities due to hypersplenism. In conclusion our results indicate that in properly selected patients beside other treatment modalities shunt surgery with or without partial resection of the spleen has a definite role in the treatment of EHPH in children.

P0593

Title:
Diagnosis of biliary atesia by echogenic periportal enlargement image and histopathology

Mariza L. V. Roquete 1, Alexandre R. Ferreira 1, Eleonora D. T. Fagundes 1, Lúcia P. F. Castro 1, Rogério A. P. Silva 1, Francisco J. Penna 1
1) Hospital das Clínicas UFMG, Belo Horizonte, Brasil

Summary:
Objective: define sensitivity, specificity and accuracy of echogenic periportal enlargement image in ultrasonographic exams and histopathologic findings after hepatic biopsy. These methods have been used alone or in combination in order to distinguish between biliary atresia and intrahepatic cholestasis. Methods: prospective study. We analised 51 patients with biliary atresia and 57 with intrahepatic cholestasis. Hepatic histopathology has been done by one pathologist, in blind way. The periportal enlargement image was researched as a single diagnosis sign of biliary atresia. Sensitivity, specificity rates and the accuracy of hepatic histopathology and periportal enlargement image, associated or isolated, were calculated having the laparotomy as the reference test. Results: periportal enlargement image revealed 49% sensitivity, 100% specificity and 72,5% accuracy. The histopathologic signs of biliary extrahepatic obstruction showed 90,2% sensitivity, 84,6% specificity and 87,8% accuracy. The periportal enlargement image and histopathology associated or isolated showed 93,2% sensitivity, 85,7% specificity and 90,3% accuracy. Conclusion: neonatal cholestasis patients with periportal enlargement image must be sent to laparotomy and colangiography. Cases without periportal enlargement image must be sent to liver biopsy to be evaluated. When histopathologic exam shows biliary atresia, laparotomy is indicated, while intrahepatic cholestasis cases will be observed or sent to clinical treatment.

P0594

Title:
EFFECT OF TREATMENT ON HEPATIC HISTOPATHOLOGY OF CHILDREN AND ADOLESCENTS WITH AUTOIMMUNE HEPATITIS

Alexandre R. Ferreira 1, Mariza L. V. Roquete 1, Lúcia P. F. Castro 1, Eleonora D. T. Fagundes 1, Laura Jacome 1, Francisco J. Penna 1
1) Hospital das Clínicas UFMG, Belo Horizonte, Brasil

Summary:
Objective: To evaluate the effects of treatment on liver histopathology of children and adolescents diagnosed with autoimmune hepatitis (AIH). Methods: Histopathological evaluation of liver biopsies performed at diagnosis or early during treatment, compared to biopsies after immunosuppressive treatment of 20 children and adolescents diagnosed with AIH who presented clinical and biochemical remission for, at least, 24 months. The evaluation was carried out according to the criteria of ISHAK et al. Liver histopathology was assessed by two pathologists. Agreement between their interpretations was analyzed with kappa statistics. Results: The age at diagnosis of the 20 patients varied from 1.7 to 11.6 years (median=6.6
P0595

Title:
Association of the carotid intima-media thickness by B-mode ultrasound in children with chronic liver disease and hypercholesterolemia.

Sergio Pacheco-Sotelo 2, Álfredo Larrosa-Haro 1, Isela Rubio-Romero 1, Edgar M Vásquez-Garibay 2, Enrique Romero-Velarde 2, M Carmen Bojórquez-Ramos 1
1) Servicio de Gastroenterología y Nutrición, Unidad de Investigación Médica, UMAE Hospital de Pediatría, CMNO, IMSS, Guadalajara, Mexico 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, Mexico

Summary:
Objective: To assess the association of the carotid intima-media thickness by B-mode ultrasound (CTU) with hypercholesterolemia in children with chronic liver disease (CLD). Methods: Design: Cross-sectional. Setting: A GI and Nutrition Department at a pediatric referral hospital, Inclusion: Infants and children with CLD. Sampling: All cases with CLD studied from January through April 2007. Dependent variable: CTU. Independent variables: Serum lipids. Protocol: a) Sample for total cholesterol (TC), LDL-cholesterol (LDL-C), HDL-cholesterol (HDL-C) and triglyceride (TG) after 8 to 12 hour fast (enzymatic assay); b) CTU previous standardization. Analysis: Comparison of CTU of cases with normal lipids vs. cases with hyperlipidemia. Pearson’s correlation between serum lipids and CTU. Results: Patients: n= 25, 13 (52%) females, median age 28 months (3-192), 19 cases (73.1%), < 6 years old. Main diagnoses were biliary atresia, cryptogenic cirrhosis, Alagille syndrome and choledocal cyst. Serum lipids: 19 cases (76%) had TC < 200mg/dL (130 ± 31.6) and 6 (24%) had hypercholesterolemia (331 ± 30.7 mg/dL). 20 children (80.8%) had LDL-C < 130mg/dL (median 62.5± 30.7) and 5 (19.2%) > 130mg/dL (median 217 ± 46.2). HDL-C was < 35mg in 11 cases (44%, median 44.5 ± 23.5mg/dL) and > 35mg/dL in 14 (56%, median 23 ± 11.1mg/dL). 17 cases (68%) had TG < 130mg/dL (median 88 ± 28.3mg/dL) and 8 (32%) > 130mg/dL (median 237 ± 46.2mg/dL). CTU: Normal CT: 0.043 ± 0.007mm; cholesterol >200mg/dL: 0.044 ± 0.005 (p= 0.537). Normal LDL-C: 0.045 ± 0.007mm; LDL-C >130mg/dL: 0.044 ± 0.006 (p= 0.783). HDL <35mg/dL: 0.043 ± 0.007mm, HDL >35mg/dL: 0.045 ± 0.006 (p= 0.666). Normal TG: 0.046 ± 0.055mm; TG >130mg/dL: 0.042 ± 0.008 (p= 0.238). Pearson’s correlations of serum lipid fractions and CTU were not statistically significant. Discussion: Although from one-fourth to one-third of the cases studied had hyperlipidemia no difference in the carotid thickness could be demonstrated and no inference of atherosclerosis associated to hyperlipidemia in children with CLD can be supported. These findings differ from the study of Nagasaka et al, who showed increased carotid thickness in children with familial cholestatic CLD. The lack of difference may be determined by a small sample of children with hyperlipidemia.

P0597

Title:
Correlation of anthropometrical indicators and body composition evaluated by dual-energy X-ray absorptiometry in infants and toddlers with chronic liver disease: A pilot study.

Erika F Hurtado-López 1, Edgar M Vásquez-Garibay 2, Xochitl Trujillo-Trujillo 3, Rocío Macías-Rosales 1, Alfredo Larrosa-Haro 1
1) Servicio de Gastroenterología y Nutrición, Unidad de Investigación Médica, UMAE Hospital de Pediatría, CMNO, IMSS, Guadalajara, México. 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, México. 3) Centro de Investigación Biomédica, Facultad de Medicina, Universidad de Colima, Colima, México

Summary:
Objectives: To correlate anthropometrical indicators of the nutritional status with body composition evaluated by dual-energy X-ray absorptiometry (DEXA) in infants and toddlers with chronic liver disease (CLD). Methods: Design: Cross-sectional (pilot study). Setting: A pediatric referral hospital. Sample: 6 patients with CLD, age 3-36 months. Variables: a) Anthropometrical indicators: weight for height, height for age; head circumference, mid arm circumference; tricipital skin fold; total, muscle and fat arm areas. b) DEXA measurements of fat mass (FM), percent body fat, fat free mass (FFM) and bone mineral content (BMC). Protocol: Conventional anthropometric techniques and instruments, criteria of normality < > 2 SD, NCHS, Frisancho and Sann reference patterns. DEXA measurements were performed using whole-body scanner (Hologic Discovery W-series QDR). Statistics: Frequencies, %, means, SD and Pearson correlation. Results: 5/6 were females, median age was 15.5 months. 2 patients had esophageal varices and 3 had cirrhosis. Nutritional status: 4/6 had height/age <-2SD, 2 had weight/height <-2SD and 5/6 mid arm circumference <-2SD. There was no...
correlation between weight for height with FM, % body fat, FFM and BMC (r=0.72, p=0.10; 0.74 p=0.89; r=0.51 p=0.10; r=0.73 p=0.96); Height/ age was not correlated with FM (r=0.72, p=0.10), FFM (0.57, p=0.23) and BMC (r=0.73, p=0.09). Significant correlations of mid arm circumference with FM and % body fat (r=0.95, p=0.003), FFM (r=0.82, p=0.04), BMC (r=0.93, p=0.006) were observed; muscle arm area had significant correlations with FM (r=0.8, p=0.05) and with FFM (r=0.91, p=0.010). Tricipital skin fold, total and fat arm areas had no correlation with DEXA measurements. Conclusions; Significant and high-strength correlations of the anthropometric indicators with FM, %BF, FFM, and BMC seem to support arm anthropometrics as a valuable tool to evaluate body composition in the diagnosis of the nutritional status against the conventional indicator weight or height in infants and toddlers with CLD. The lack of correlation of growth indicators with DEXA is probably related to the fact that growth is not directly related to body composition.

P0598

Title:

Alfredo Larrosa-Haro 2, Edgar M Vásquez-Garibay 2, M Carmen Bojórquez-Ramos 1, Erika F Hurado-López 1, Carmen A Sánchez-Ramírez 1, Sergio Pacheco-Sotelo 1

1) Servicio de Gastroenterología y Nutrición, UMAE Hospital de Pediatría, Centro Médico Nacional de Occidente, IMSS, Guadalajara, México 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara, Guadalajara, México

Summary:
Objective. To compare el the lipid profile of children of children with Alagille syndrome and biliary atresia. Methods. Design: Cross-sectional. Setting: A GI and Nutrition Department at a pediatric referral hospital, 1997 through 2007. Dependent variables: total cholesterol (TC), triglyceride (TG), low-density cholesterol (LDL-C), high-density cholesterol (HDL-C). Independent variable: Diagnosis. Protocol: Liver function tests (bilirubins, transaminases, alkaline phosphatase, gamma-glutamyl-transferase, albumin) and lipid profile (TC, TG, LDL-C and HDL-C) after 8 to 12 h fast. Statistics: Mann-Whitney U and Pearson correlation. Results. Sample: n=64; Alagille syndrome= 16, biliary atresia= 48. 48% were females. Mean age: Alagille syndrome 105.2±36.3, biliary atresia 32.8±43.9 months (p < 0.001). Lipid profile: TC and LDL-C significantly higher in Alagille syndrome (330.7±89.6 vs. 232.1±90.7 and 202.2±85.1 vs. 137.2±85.1); TG levels were higher in biliary atresia, without significance; HDL-C was lower in biliary atresia (28.8±23.5 vs. 59.2±31.7). Significant correlations were observed between conjugated bilirubin with transaminases and alkaline phosphatase (r=0.85, 0.74, 0.78, y 0.82); unconjugated bilirubin and HDL-C (r=0.81); TC and TG with alkaline phosphatase (r=0.77 y r=0.72). Conclusions In the liver disease groups under study a differential dyslipidemic pattern was observed. Alagille syndrome presented higher levels of TC and LDL-C whereas children with biliary atresia had higher levels of TG and subnormal HDL-C. In both entities biochemical indicators of liver damage (conjugation, excretion and cell damage) had a significant positive correlation with serum lipids, mainly with TC and its fractions. These findings suggest that particular physiopathologic mechanisms accomplish for the dyslipidemia in each one of these liver diseases.

P0600

Title:
VALIDATION CHARACTERISTICS OF FATTY ACID ETHYL ESTER (FAEE) CONCENTRATIONS IN ALCOHOL MISUSE

Analice Hoffenberg 1, Clark Kulig 2, Greg Everson 2, B. Brimhall 1, Thomas Beresford 1

1) Denver Veterans' Affair Medical Center, Denver, USA 2) University of Colorado, Denver, USA

Summary:
Objective: When treating adolescents for hepatitides, it is important to verify whether liver function tests are altered due to alcohol-related problems. None of the previous reports, that suggest that fatty ethyl ester (FAEE) concentrations hold promise as markers of recent heavy alcohol use, have reported validity characteristics. In this study, in order to do so, we tested the hypothesis that FAEE concentrations are valid markers of alcohol misuse, as measured by their sensitivity and specificity, and as demonstrated by receiver operating characteristic (ROC) curves. Methods: De-identified serum samples (n=48) were obtained from the central laboratory of the University of Colorado Health Sciences Center. Blood alcohol levels (BAL) and FAEE concentrations (ethyl palmitate, stearate and oleate, and the sum of all three) were measured. The validity characteristic of FAEE was established in three ways: 1) their respective correlation and linear regression with BAL, 2) the determination of optimal sensitivity and specificity at selected cut-off points for each of the FAEE measurements, and 3) logistic regression with the chosen BAL cut-offs (100 and 200mg/dL). Moreover, the areas under the ROC curves (AUC) for the FAEE tests were calculated. Results: BAL was significantly associated with FAEE levels, as demonstrated by Pearson correlation and linear regression analyses. Neither gender nor age contributed to the relationship of BAL with FAEEs. Validity measurements at both BAL cut-offs were very similar. FAEE levels were very sensitive and specific indicators of alcohol misuse: at the 100 and 200mg/dL cut-offs, sensitivity and specificity for ethyl palmitate were, respectively, 97 and 82%, and 93 and 90%, with the AUC of 0.941 and 0.943. For ethyl stearate, at the same BAL cut-offs, sensitivity and specificity were 87 and 82% and 90 and 95% with AUC of 0.919 and 0.933, respectively. Ethyl oleate’s sensitivity and specificity, at the 100 and 200mg/dL cut-offs, were 92 and 82% and 83 and 84%, with AUC of 0.934 and 0.902, respectively. The summed FAEEs’ sensitivity and specificity, were, at the 100 and 200mg/dL cut-offs, respectively, 92 and 82% and 93 and 90%, with AUC of 0.941.
and 0.947. Conclusion: Our results suggest that FAEE testing is very sensitive and specific to identify alcohol misuse.

Title: EVALUATION OF PROCALCITONIN, C-REACTIVE PROTEIN AND IL-6 IN CHILDREN AS MARKER OF INFECTION AFTER LIVER TRANSPLANTATION

Anita Verma 1, Tassos Grammatikopoulos 1, Jim Wade 1, Roy Sherwood 1, Nigel Heaton 1, Anil Dhawan 1

1) King’s College hospital, London, United Kingdom

Summary: Aim: To evaluate the baseline procalcitonin (PCT) concentrations after liver transplantation (LT) in children and compare PCT, C-reactive protein (CRP) and interleukin 6 (IL-6) for differentiating rejection from bacterial and viral infections. Methods: The serum PCT, CRP, IL-6 and white cell count (WCC) were measured following LT in 62 children (39 male) between 2002 and 2004. Children were assigned to one of 3 groups and specimens were collected for: group 1: within 24 hours of LT; group 2: at onset of febrile episode; group 3: at day 7 in children who did not become pyrexial and used as controls. Clinical and laboratory data was collected for all the patients. Statistical analysis was done by using comparative descriptive test, the area under the receiver operator characteristic curve (AUROC) and the Spearman rank correlation test. Results: The most common indication for LT was EHBA. Age range was from 6 months to 16 years. Group 1 comprised 22 patients; in Group 2 there were 50 febrile episodes (bacterial infection (n=23); viral infection (n=16), and rejection (n=11); Group 3 comprised 25 patients. The median PCT concentration for Group 1 was 5.16mg/L (95%CI, 2.18-21.13); for Group 3: 0.170 mg/L (95%CI, 0.15-0.36) and, in Group 2: 1.93mg/L (95%CI, 1.36-2.66) for bacterial infection, 0.19mg/L (95%CI, 0.10-0.48) for rejection, and 0.31mg/L (95%CI, 0.15-0.44) for viral infection. Procalcitonin levels was significantly increased in cases of confirmed bacterial and fungal infection and was more specific then CRP. The sensitivity, specificity values at CRP 5.2 mg/L for the diagnosis of infection vs control were 95%, 36%, respectively. The figures for PCT at cut off value of 0.48 ng/ml were 100, 88% respectively. The area under the ROC (AUROC) for PCT in control vs. bacterial infection was 0.968 (95% CI 0.913-1.00; p<0.0001), in control vs. viral was 0.544 (95%CI 0.36-0.72; p 0.3177) and in infection vs. rejection was 1.0 (p<0.0001). The AUROC for CRP in infection vs. rejection was 0.842 (95% CI 0.686-0.998; p<0.0001) and for IL-6 was 0.739 (95% CI 0.559-0.919; p 0.0046). In the Spearman rank correlation between PCT and CRP or IL-6 the rs was 0.5 and 0.26 respectively. There was no correlation between WBC or serum creatinine levels and PCT in the septic patients and also no correlation between AST and PCT in the rejection group.

Conclusion: LT resulted in an elevated PCT at 24 hours. PCT proved to be the most specific parameter in differentiating infection from rejection. It’s predictive value being higher than that of CRP and IL-6.

Title: Efficacy of high-dose pegylated interferon alpha 2a in children with chronic hepatitis C

Ayano Inui 1, Haruki Komatsu 1, Tsuyoshi Sogo 1, Tomoo Fujisawa 1

1) Children’s Center for Health and Development, Yokohama East Hospital, Yokohama, Japan

Summary: [Background & Aims] Rapid virological response (RVR), defined as an undetectable serum HCV RNA at 4 weeks of therapy, is a good predictor of sustained virological response (SVR) in chronic hepatitis C. In our previous study, RVR rate is low in children with chronic hepatitis C. We investigated the efficacy of high-dose pegylated interferon alpha 2a (PEG-IFN alpha 2a) in children with chronic hepatitis C. [Patients & Methods] 17 children (median age 7 years, median serum HCV RNA levels 1,300 KIU/ml) were treated with PEG-IFN alpha 2a at a dosage of 90 microg (<29kg) or 180 microg (>30kg) per a week for 48 weeks. Early virological response (EVR) is defined as a >2-log decrease in the HCV RNA level or as undetectable HCV RNA by 12 weeks of therapy. When the patients did not achieve RVR or a >2-log decrease in the HCV RNA level by 4 weeks of therapy, the dose of PEG-IFN alpha 2a was increased to 180 microg. The primary efficacy endpoint was SVR, defined as undetectable serum HCV RNA at the end of 24 weeks of untreated follow-up. [Results] No one achieved RVR or a >2-log decrease in the HCV RNA level by 4 weeks of therapy, the dose of PEG-IFN alpha 2a was increased to 180 microg. The primary efficacy endpoint was SVR, defined as undetectable serum HCV RNA at the end of 24 weeks of untreated follow-up. [Discussion] No one achieved RVR and 5 children achieved a >2-log decrease in the HCV RNA level by 4 weeks of therapy. Nine children, who did not achieve a >2-log decrease in the HCV RNA level by 4 weeks of therapy, received 180 microg. EVR was achieved 13 of 15 children (86%) and the other 2 children were dropped out. Children achieving EVR were well tolerated against high-dose PEG-IFN alpha 2a therapy. Serum HCV RNA is undetectable at 24 weeks of therapy in all the 11 children who are finished the 24 weeks therapy, and SVR is achieved in all 6 children who are evaluated at primary efficacy end point. Adverse events were those commonly associated with IFN-based treatment, and none was deemed serious. [Conclusion] High-dose PEG-IFN alpha 2a therapy seems to be safe and well tolerated. High-dose PEG-IFN alpha 2a might improve SVR in children with chronic hepatitis C.
Title: Long Term Use of Ursodeoxycholic Acid in Children for Cystic Fibrosis-Related Liver Disease

Nuray Uslu 1, Figen Gurakan 1, Hülya Demir 1, Uşur Ozcelik 2, Nural Kiper 2, Hasan Ozen 1
1) Hacettepe University, Medical Faculty, Ihsan Dogramaci Children’s Hospital, Department of Pediatric Gastroenterology, Hepatology and Nutrition, Ankara, Turkey 2) Hacettepe University, Medical Faculty, Ihsan Dogramaci Children’s Hospital, Department of Pulmonology, Ankara, Turkey

Summary:
Objectives: The hepatobiliary manifestations of cystic fibrosis (CF) show broad clinical spectrum, from mild steatosis to multilobular cirrhosis. Current treatment options for CF-related liver disease are limited. The bile acid ursodeoxycholic acid (UDCA) may improve biochemical parameters of liver disease, but its long-term efficacy in preventing the progression of liver disease in CF needs to be proven. Methods: Patients with a diagnosis of CF who presented with abnormal liver tests of at least 6 months and/or abnormal ultrasonographic findings of liver and/or positive liver histology were treated with UDCA (20 mg/kg/day). The effect of UDCA on biochemical parameters and the course of liver disease were monitored from the beginning of the treatment until the last follow-up. Results: Thirty five patients (18 male) diagnosed with CF at a mean age of 1.2±1.4 years (1 month-10 years) were enrolled in the study. The most common mutation was ∆F508 (23/70 alleles, 32.8%). UDCA was started at 3.9±3.4 years of age (3 m-13 y) and the patients were followed up for 4.1±2.6 years (1-10 y). Liver biopsy was performed in twenty patients at a mean age of 6.1±5.0 years (0.6-21 y, in four after 2-8 years of UDCA treatment). Ten patients had steatosis, 4 focal biliary cirrhosis, 3 cirrhosis, 2 cholestasis and 1 chronic hepatitis. A significant reduction in AST (p<0.001), ALT (p<0.001), GGT (p<0.005), and ALP (p<0.005) was observed with a significant rise in total protein levels (p<0.001). However no significant rise occurred in albumin levels. No side effect occurred with treatment. Among the patients 4 had portal hypertension at the beginning of the treatment while 4 of them developed clinical consequences of portal hypertension during the follow up. Three patients died, 1 with liver failure, 1 with pulmonary failure, 1 with acute myeloid leukemia. Conclusions: Long term use of UDCA is safe and associated with improvement in liver function tests of CF patients with liver disease, however disease progression may occur.

Title: ANALYSIS OF QUANTITATIVE EBV-PCR AND THE RESPONSE TO VALGANCICLOVIR FOR PREEMPTIVE THERAPY IN PEDIATRIC LIVER TRANSPLANTATION

Javier Bueno 1, Carla Venturi 1, Teresa Tortola 1, Joan Gavalda 1, Leonor Pou 1, Albert Pahissa 1
1) Hospital Valle De Hebron, Barcelona, Spain

Summary:
Valganciclovir is a prodrug of ganciclovir. Preemptive therapy with ganciclovir has been recommended in the pediatric liver transplant population as strategy to avoid the development of posttransplant lymphoproliferative disorders when high EBV viral load is detected in peripheral blood (PTLD). Aim: To analyze the response to preemptive therapy with valganciclovir in children with liver transplantation and high quantitative EBV-PCR in peripheral blood. METHODS: From June 2005- December 2007, we have tested 979 EBV-PCR in 80 children with liver transplantation. 21/80 PCR were tested from the date of transplantation and 59/80 belonged to the historical cohort (7/59 had prior history of PTLD). We considered a negative PCR if the viral load < 5000. Patients were divided in two groups depending if they received valganciclovir treatment (n=22) or not (n=16). The response to valganciclovir was considered complete if the PCR was negative at 30 and 60 days of treatment and partial if PCR decreased at least 50%. Some patients had more than one episode of treatment. Also ganciclovir blood levels were tested in 109 instances, increasing the recommended dose of valganciclovir (30 mg/kg) if it was low and were correlated with the EBV-PCR. Results: A total of 369 (33%) positive PCR were detected in 36 out of 80 patients with a value of 75.000 copies (5000-4.200.000). In 3/8 biopsied patients with presence of EBV (EBER), the PCR in blood was negative. Four patients were long-term treated because of persistent high viral load. Only 1 patient developed PTLD 2 months after stopping valganciclovir. From the 22 episodes treated for 30 days, 34% had a complete response, 41% partial and 23 % no response. In the no treated group it was 6%, 25% and 68% respectively (p=0.01). However we did not find differences in those episodes treated during 60 days. No patients reached the recommended ganciclovir therapeutic levels at 2 hour (8 mg/L). However, the mean PCR was lower when the ganciclovir levels were higher than 4 mg/L if compared with those with lower levels (p=0.03) Conclusion: Presence of EBV in tissue can occur with negative EBV-PCR. There is a response in the PCR to valganciclovir after 30 days of treatment. However, there is a high intra and interpatient variability of ganciclovir levels in children suggesting the need of pharmacokinetic monitoring to optimize treatment.

Title: COMPARISON OF INDOCYANINE GREEN CLEARANCE WITH KING´S COLLEGE AND CLICHY´S SCORES IN PEDIATRIC ACUTE LIVER FAILURE
Summary:
Indocyanine green clearance (IGC) measured by percentage disappearance rate (PDR), detects alterations in liver function and may be used as a non-invasive determinant of hepatic reserve in liver failure as well as a marker of graft function following liver transplantation. The administration of blood products does not interfere with the ICG_PDR as occur with other prognostic scores as King’s College and Clichy scores. Aim: to compare in children with acute liver failure the ICG_PDR with King’s and Clichy scores and to determinate its predictive value. Patients and method. Between 2003-2008, 174 ICG-PDR measurements were performed in 60 children with acute liver damage. The mean age was 2.6 yr (range 1month-16years). ICG was administrated intravenously and its blood concentration was detected over time by a transcutaneous pulse densitometry using a manufacturer available bedside monitor (Limon Pulsion Medical System ®). The PDR was performed under hemodynamic stability. We considered irreversible acute liver failure if the patient underwent in urgent liver transplantation or patient death due to liver failure Results. The mean ICG-PDR was 17% (range: 3.3%-51%). In 2 out of 60 patients, ICG-PDR could not be detected due to hemodynamic inestability. An ICG-PDR of < than 5% was a predictor value for irreversible liver failure (P=0.000). In 12 (20%) out of 60 patients, PDR was < 5%. Of those 12, 2 patients recovered its synthetic function and 10 (83%) developed irreversible liver failure. The positive predictive value (PPV) of ICG-PDR was 80%, 59% from King’s score and 66% for factor V < 20%. The combination of 2 of the 3 scores had a PPV of > 80%. Conclusion: ICG_PDR < than 5% is a significant predictor of irreversible liver failure. It provides an accurate estimation of liver reserve under hemodynamic stability conditions, even with similar or more sensitivity and specificity than King’s College and Clichy’s scores respectively. ICG-PDR is a good complement of such scores for decision making upon the need of liver transplantation.

Title:
USE OF MTOR INHIBITORS IN PEDIATRIC LIVER TRANSPLANTATION. ANALYSIS OF ITS EFFECTIVITY

Carla Venturi 1, Javier Bueno 1, Ruth Diez-Dorado 1, Juan Ortega 1, Ramon Charco 1
1) Hospital Materno Infantil Valle de Hebron, Barcelona, Spain

Summary:
MTOR inhibitors (MTORi) (rapamicine and everolimus) are new immunosuppressants with antitumoral capacity and without the anticalcineurinic (CNI) adverse effects (nephrotoxicity, hypertension, neurotoxicity and diabetes). Its effectivity in children with liver transplantation has been not well described in the literature. Aim: To describe our experience with MTORi in pediatric liver transplantation. Methods: Between 2000 and 2007, 14 patients (mean age 12 years) received MTORi at a mean of 8.4 years (range: 1.4-18 years) after transplantation. The indication of MTORi were: severe acute rejection steroid resistant (AcRs) (n=5), chronic rejection (n=3), CNI’s nefrotoxicity (n=5), lymphoma (n=1), cosmetic effects (n=1), seizures associated to TAC (n=1). Some of the patients had more than one indication. The previous immunsuppresion regimens were: cyclosporine (CSA) + MMF (n=2), Tacrolimus (TAC) monotherapy (n=6), TAC + MMF (n=2), TAC + steroids (n=3), steroids (n=1). The mean follow up after MTORi was 2 years (range 0.3-8yeaers). Results: In 4/5 patients with AcRs, rapamicine associated to TAC and steroids, normalized the liver function (range 1 to 4 month). The remaining patient has developed chronic rejection after PTLD. 2/3 chronic rejection were successfully treated (liver biopsy proved) and the remaining required a new graft because of biliary strictures (no rejection in explanted liver). In 1/5 the renal function improved and 4/5 stabilized. The PTLD patient is in complete remission after quimiotherapy without any further rejection episode. The other remaining complications (cosmetic and seizures) disappeared. The adverse effects observed were: dyslipemia (7), neumonia/neumonitis (5), skin infections (4), oral ulcers (2). Rapamicine should be discontinued in 3 children because of neumonia (1), PTLD and bone marrow depletion (1). Conclusion: MTORi associated to CNI are effective to rescue patients from chronic or severe acute rejection steroid resistant as well as monotherapy in long term follow up. The improvement in the renal function is more questionable when they replaced CNI. Neumonitis and dyslipemia are the adverse effects seen most frequently in the pediatric population.

Title:
Late referral for investigation of patients with neonatal cholestasis in Rio Grande do Sul, Brazil.

Carlos O Kieling 1, Jorge L dos Santos 1, Sandra MG Vieira 1, Ana RR Linhares 1, Andréa L Lorentz 1, Themis R da Silveira 1
1) Hospital de Clinicas de Porto Alegre, Porto Alegre , Brazil

Summary:
Objective: Age at the time of portoenterostomy (PE) is a major prognostic factor in biliary atresia (BA). In this study we aimed at analysing the age of diagnosis of the BA patients referred for evaluation of neonatal cholestasis to the Hospital de Clinicas de Porto Alegre during the last 25 years, correlating this variable with their native liver survival. Methods: We reviewed the files of the BA patients native from Rio Grande do Sul, southern
Brazil, attended since 1982 until 2007. Diagnosis of BA was confirmed during operative laparotomy by the presence of mechanical obstruction to bile flow. Results: Among 112 BA patients, 38 (33.9%) cases occurred since 1982 until 1989; 46 (41.1%) since 1990 until 1999; and 28 (25.0%) from 2000. Twelve (10.7%) patients did not undergo PE. The age at the time of diagnosis of the 112 patients ranged from 25 to 297 (93.7±51.3) days and in 20.5% of cases the age was under 60 days. There was no difference among the 3 decades regarding age at the time of diagnosis. Patients who came from the countryside of Rio Grande do Sul were referred significantly later (103.5±54.8 days) than those referred from the capital city, Porto Alegre, and metropolitan area (82.8±45.3 days) (P=0.033). The rate of patients younger than 60 days at the time of diagnosis was lower in the group from the countryside (P=0.01). The native liver survival was greater in the patients who underwent PE until 60 days of life (Log rank <0.0001).

Conclusion: Diagnosis of BA remains late in Rio Grande do Sul, mainly among patients from the countryside, and late PE is associated with a lower native liver survival.

P0608
Title:
acute infection by HBV and HCV In oncologists patients during chemotherapy
Katiuska Belandria 1, Carmen E. Lopez 1, Daloy Gonzalez 1, Jenny Briceño 1
1) Hospital J. M. de los Rios, Caracas, Venezuela

Summary:
In oncologists patients the levels of transaminasas can rise during chemotherapy masking the acute infection by HBV and HCV, our objective to determine the acute clinic in infected oncologists pediatrics patients during this period. METHODOLOGY: A descriptive, longitudinal study was made based on the revision of 50 clinical histories of taken care of children in Gastroenterology consults in a period of 20 years, with the collected data it calculated the average and the standard deviation for the continuous variables; frequency and percentage for the nouns. RESULTS: Of patients 70% they became infected with HBV and 48% with HVC, 90% were without symptoms and 68.9% presented displayed aminotransferasas high. 68% had positive markers during the first year of chemotherapy. Two cases of hepatica insufficiency were registered and a deceased. 62% were not vaccinates. CONCLUSION: The acute infection by HBV and HCV is not of frequent presentation and when it happens is sudden, association between the hepaticas elevation of aminotransferasas and the clinical manifestations does not exist; acquiring the infection during the chemotherapy. The state of immunization for the virus of hepatitis B of this population was determining. Key words: Infection, hepatitis, acute, young, chemotherapy.

P0609
Title:
EFFECTIVENESS OF THE INTERFERON PEGILADO + RIBAVIRIN IN THE SUSTAINED VIRAL RESPONSE IN CHILDREN WITH HEPATITIS C
Carmen E. Lopez 1, Elena Pestana 2
1) Hospital J. M. de los Rios, Caracas, Venezuela 2) Hospital Sam Juan de Dios, Caracas, Venezuela

Summary:
The goal of this study is to analyze the effectiveness of the combined treatment in chronic hepatitis C in children using pegylated interferon and ribavirin . Materials and methods: 18 patients with chronic hepatitis C, having positive RNA HVC, viral load, and genotype, all underwent liver biopsy before begin treatment. The treatment were ribavirin and pegylated interferon during 1 year and after 6 months of finished treatment RNA HVC was carried out. Results: Patients were between 3 to 13 years, 55.56% were girls. The vertical transmission was of 22.23%. 3/18 not ended treatment. There was decrease statistically significant in the viral load of the patients without sustained viral response, 40% had not present fibrosis and 40% showed light fibrosis in liver biopsy. 14/15 were genotype 1; 1/15 genotype 2., 11/15 carried out RNA through 6 months under treatment and all patients after 6 months of having culminated the treatment, 60% of sustained viral response was obtained. Conclusion: Although the progression of the hepatitis C in children is slow, the treatment with pegylated interferon and ribavirin is useful in this specific group of age, because children have favorable factors which help to obtain a sustained virological response. Passwords: Hepatitis C in children, treatment, pegylated interferon, ribavirin.

P0610
Title:
I IMPACT IN THE DECREASE OF THE VIRAL LOAD IN THE TREATMENT OF THE HEPATITIS B IN PATIENT PEDIATRIC
Carmen E. Lopez 1, Ileana Gonzalez 1
1) Hospital J. M. de los Rios, Caracas, Venezuela
Summary:
The objective of this work is to test the effectiveness of the treatment for Hepatitis B with Lamivudine as monotherapy during 6 months and later on the combination with conventional Interferon or pegylated interferon during 6 months more, and to compare if there are differences among the two treatment. Materials and methods: 15 patients were included with chronic Hepatitis B 8/15 treated with lamivudine plus conventional interferon and 7/15 received lamivudine plus pegylated interferon. HBV DNA was carried out at the beginning of the treatment with interferon and repeated later on 6 months to finish it. Results: 15 patients between 2 and 15 years were included. He/she did not have statistically significant when comparing the ages and sex among the groups. The aminotransferases treatment and post treatment varied significantly. There was not statistically significant for eliminate of the VHB DNA during and later to the treatment, in the 2 groups. 12/15 eliminated VHB DNA and AgHBe; 3/12 positive AgHbs presents. Conclusion: the decrease of the viral load with lamivudine improves the answer to the treatment with interferon in patient pediatric. Passwords: Hepatitis B in children, Interferon, Lamivudine, treatment

P0611

Title: 
Alagille’s Syndrome: epidemic and clinical data in the Service Pediatric Gastroenterology of IPPMG - UFRJ

Silvio da Rocha Carvalho 1, Antonio Celso Calçado 1, José César da F. Junqueira 1, Josther Gracia 1, Sheila Nogueira Pêcora Rodrigues Guerra 1, Cássia Freire Vaz 1
1) Instituto de Puericultura e Pediatria Martagão Gesteira / UFRJ, Rio de Janeiro, Brazil

Summary:
Objective To describe the morphologic discoveries, lab’s results and the patients’ clinical evolution with confirmed diagnosis of Syndrome of Alagille and to calculate the prevalence of these discoveries in the patients’ population taken care in the service of pediatric gastroenterology of IPPMG - UFRJ. Methods The Service Pediatric Gastroenterology of IPPMG - UFRJ have the daily register of all patients and theirs health records. Health records of patients with Alagille’s Syndrome were analyzed for obtain information needed to this study. We have 5 patients in our hospital in treatment for Alagille’s Syndrome. Results The medium age of the patients’ admission in the Service was of 17,4 months. All children presented jaundice during the treatment. Cardiac features in 60% of patients with disease of artery lung in these marry. Butterfly vertebrae were found in only 40%. Facial characteristics were found in 60% of children, but, only in 1 case the identifications was in first medical advice. Two patients (40%) needed liver transplantation. Only one (20%) had renal disease. Conclusion Our results corresponding with literature, however, we find a difficult for to characterize the phenotype of Alagille’s Syndrome. We have no case of grave disease, one of moderate disease e four of few symptoms. We also discover a need to inform better the staff all the characteristics of the syndrome for the appropriate record and treatment of ours patients.

P0612

Title: 
Thrombotic Events after Pediatric Liver Transplantation

Chee Y Ooi 1, Lauren Zolpys 2, Leonardo R Brandao 2, Maria De Angelis 1, Wendy Drew 1, Vicky L Ng 1
1) Pediatric Academic Multi-Organ Transplant (PAMOT) Program, The Hospital for Sick Children, Toronto, Canada 2) Pediatric Hematology/Oncology, The Hospital for Sick Children, Toronto, Canada

Summary:
Objective: Thrombotic events (TE) occurring despite protocol use of preemptive anticoagulation may contribute to morbidity and mortality after pediatric liver transplantation (LT). The aim is to determine the prevalence of TE post-LT and evaluate differences between patients (pts) with and without TE. Methods: A retrospective chart review of all children transplanted between Jan 02-Oct 07 was performed. Pts with multivisceral LT or liver retransplantation were excluded. Primary analyses focused on children with TE within the first month post-LT confirmed by Doppler ultrasound (defined as abdominal [aTE] or non-abdominal [non-aTE]) [Part A]; subanalyses compared differences between pts with and without TE [Part B]. Results: A total of 88 pts [median age 4.1 (range 0.06-17.3) yrs; median wgt 16.6 (range 2.54-66) kg] underwent primary LT with deceased [whole (n=25, 28%), reduced (n=17, 19%), split (n=15, 17%)] and live donor [n=31, 35%] allo grafts for indications including biliary atresia (34%), fulminant hepatic failure (17%), metabolic liver disease (10%), hepatoblastoma (10%) and others (28%). Part A: A total of 15 (17.1%) pts developed at least one TE post-LT, with aTE occurring in 7 (8%) and non-aTE in 8 (9.1%) pts. Median time post-LT for aTE was 5 (range 1-31) days, developing in 2 LRD and 5 deceased [whole (3), reduced (0), split (2)] grafts, with involvement of the hepatic artery (HAT) in 3, portal vein in 2, hepatic vein in 3 and IVC in 1. Only patients with HAT developed thrombosis-related complications: death (1), prolonged transaminitis (2). Nine symptomatic non-aTE occurred in 8 children, including DVT in 7 [with 6/7 (85.7%) central venous line (CVL) related] and superficial vein thrombosis in 2 (all peripheral IV lines). In pts with CVL-related TE, the median time from line insertion to clot development was 5.5 (range 3-16) days versus 7.5 (range 7-8) days in peripheral lines. Part B: Neither age at LT, cold ischemic time, duration of LT surgery, CMV status nor early acute cellular rejection rate significantly differed...
among pts with or without TE (p>0.05). Conclusion: The prevalence of early TE in a large population of pediatric LT recipients is 17.1%, with 9.1% prevalence of symptomatic non-aTE due to line-related events. An underlying yet to be defined hypercoagulable state may be present but further multicentre studies are needed to validate these findings.

P0613

Title: Clinical presentations of Wilson¡§s Disease In Children ¡V Emphasize on hemolytic anemia

Chieh-Chung Lin 1, Li-Ching Wang 1, Jan-Der Wang 1, Meng-Che Wu 1
1) Taichung Veterans General Hospital, Taichung, Taiwan

Summary:
Background: Wilson’s disease (hepatolenticular degeneration) is an autosomal recessive defect of cellular copper export. Early diagnosis of Wilson¡§s disease in young children is difficulty due to obscure clinical presentations in early stage. Method: We performed a retrospective analysis of patients with Wilson’s disease diagnosed at Taichung Veterans General Hospital between 1996 and 2006. Results: Ten children (M:F: 8:2, age: 2y9m/o to 17y4m/o) were included in this study. Three of them were less than 5 years old at diagnosis. The diagnostic criteria including low serum ceruloplasmin, high 24-hr urinary copper excretion, presence of Kayser-Fleischer rings and histological signs of chronic liver damage were reached in 90%, 100%, 10%, 80% of patients respectively. The main initial presentations were impaired liver function tests (6/10, 60%), hemolytic anemia (2/10, 20%) and fulfilant hepatic failure(1/10, 10%). The last one patient was diagnosed because his brother had Wilson¡§s disease. All patients got improvement after D-PCN, trientine and Zinc supplement therapy except the one who died on fulfilant hepatic failure. All patients were on Zinc therapy alone after the conditions were stable. Conclusions: Early diagnosis is critically important for the treatment of Wilson¡§s disease. The most common initial presentations of children with Wilson¡§s disease was impaired liver function tests. However, hemolytic anemia was also an important presentation in children. We should take Wilson¡§s disease into consideration if a child presents as hemolytic anemia. The best diagnosing methods are serum ceruloplasmin and 24-hr urine copper. Zinc supplement is considered to be the first choice of therapy. Chelating therapy with D-PCN or trientine may exhibit risk of deterioration of central nervous system.

P0614

Title: Gene mutation of Wilson’s disease in Taiwan: detecting by high-resolution melt

Chieh-Chung Lin 1, Li-Ching Wang 1, Jan-Der Wang 1
1) Taichung Veterans General Hospital, Taichung, Taiwan

Summary
Background: Wilson’s disease (hepatolenticular degeneration) is an autosomal recessive defect of cellular copper export. There were more than 200 mutations associated with Wilson¡§s disease and the detecting rates were reported to be as low at 30%-60% in patients. Goal: To identify the gene mutations in our pediatric patient with Wilson¡§s disease by high-resolution melt method(HRM). Method: In this study, children with Wilson¡§s disease were screened for the most common mutation positions including exons 8, 11, 12, 13, 16, 17, and 18 of ATP7B, using HRM, followed by direct DNA sequencing. Results: Seven children (M:F: 6:1, age: 2y9m/o to 17y4m/o) were included in this study. Two of them were less than 5 years old at diagnosis. The diagnostic criteria including low serum ceruloplasmin, high 24-hr urinary copper excretion, presence of Kayser-Fleischer rings and histological signs of chronic liver damage were found in 6, 7, 0, 5 of our patients respectively. The main initial presentations were impaired liver function tests (5/7) and hemolytic anemia (1/7). The last patient was diagnosed because his brother had Wilson¡§s disease. HRM technique takes around 10-20 minutes to run a melt curve to detect if there¡§s mutation in an exon. We found 6 de novo and one possible novel mutation. The novel mutation genes were G934D, R778Q, C490X, 304insC, IVS4 -1 G>C, P992I and the possible was L1181P. The detecting rate of our patients by HRM method was 100%. . Conclusions: HRM plays a convenient and quick role to detect mutations in patients with Wilson¡§s disease. It might be a more accurate method for detecting the mutations.

P0615

Title: GASTROESOPHAGEAL REFLUX AS CAUSE AIRWAY PROBLEMS AFTER PEDIATRIC LIVER TRANSPLANTATION

Hasan A Yuksekkaya 1, Cigdem Arikan 1, Murat Cakir 1, Murat Zeytun 1, Murat Kilic 1, Sema Aydogdu 1
1) Ege University School of Medicine Organ Transplantation and Research Center, Izmir, Turkey

Summary
Objective: We searched whether relation respiratory problems due to gastroesofageal reflux (GER) and after liver transplantation in children. Meth-
The efficiency and success of liver transplantation has been proven in pediatric life-threatening acute and chronic liver diseases. Outcome of medical treatment in some metabolic pediatric liver diseases is poor; therefore liver transplantation is the only definitive and curative treatment modality for those patients. In some cases, a living-related donor (LRLT), who is heterozygous for the disorder, is required due to scarcity of cadaveric donors. Large for size graft (LFSG) is defined as; graft size matching graft-to-recipient weight ratio (GRWR) ≤3. Median follow-up of the patients were 9 months (1-86 months). Nutritional status of the patients was assessed by biochemical and anthropometric measurements. The post-operative complications, graft and patient survival were compared between the groups with and without LFSS. Results: 64 children (44 male, 20 female) with a median age of 4.1 year (range 0.5-12 years) and with a median weight of 15kg (5.5-33kg) were performed LLS liver transplantation. Twenty-eight of them were less than 10kg. Median LLS volume was 260g (range 80-365g) and median GRWR were 1.92 (range 0.75-4.7). Fourteen patients (21%) (6 male, 8 female) (median weight 7.5kg (range 5.5-10kg)), had GRWR ≤3 (median GRWR %3.6 (range 3.1-4.7). While had malnutrition rate was 78% in initial admission, 21.4% at the time of transplantation in LFSG group. Although the complication rate was significantly higher in LFSG group (p<0.05), overall graft and patient survival was similar in both groups. Conclusion: LFSS has increased risks for the post-operative complications. Intensive nutritional support is needed in infants for to catch up their ideal weight prior to transplantation.

P0617

Title:
LIVING RELATED LIVER TRANSPLANTATION FOR CHILDREN WITH METABOLIC LIVER DISEASE

Murat Cakir 1, Masallah Baran 1, Cigdem Arikan 1, Murat Zeytun 1, Murat Kilic 1, Sema Aydogdu 1
1) Ege University School of Medicine Organ Transplantation and Research Center, IZMIR, TURKEY

Summary:
The efficiency and success of liver transplantation has been proven in pediatric life-threatening acute and chronic liver diseases. Outcome of medical treatment in some metabolic pediatric liver diseases is poor; therefore liver transplantation is the only definitive and curative treatment modality for those patients. In some cases, a living-related donor (LRLT), who is heterozygous for the disorder, is required due to scarcity of cadaveric (CLT) and non-related donor. Herein, we aimed to report our experience with live heterozygous donors for metabolic liver disease in a country of a deceased donor organ donation rate is only 1.5 per million people. Method: Patients’ data were reviewed from charts retrospectively. Twenty three children (median age 7.5 yrs; range 6 mos-17 yrs, 12 female,11 male ) underwent 26 liver transplantation (n=16 LRLT , n=10 CLT) due to metabolic liver disease between March 1997 and January 2008. Primary diagnosis included Wilson disease (n=9), type I tyrosinemia (n=8), glycogen storage disease (GSD) (n=4), alpha-1 antitripsin deficiency (n=1) and familial hyperlipidemia (n=1). Results: Sixteen of 23 patients (tyrosinemia type 1 n=8, Wilson’s Disease n=3, GSD n=3, familial hyperlipidemia n=1, alpha-1 antitripsin deficiency n=1) received liver from related donors. These donors are respectively mother (n=12, 70%), father (n=2 11%), other related donors ( n=3,17%). Histopathological examination of all donor liver specimen were normal. There was not any donor mortality or major morbidity. Hepatocellular carcinoma (HCC) was found concomitantly in 7 patient with tyrosinemia. In some cases, a living-related donor (LRLT), who is heterozygous for the disorder, is required due to scarcity of cadaveric donors. Living donor Liver Transplantation (LDLT) with left lateral segment (LLS) for small pediatric patients is a well accepted procedure; but the size of graft may be too large especially for children under 10 kg. Aim: To analyze the impact of large graft size on prognosis in children with LDLT Method: Between October 1999 to May 2007, 69 LDLT were performed on 64 patients in our center. LDLT was performed by using the donor’s LLS in 64 (92.7 %), right lobe in 4 (6.3%) and left lobe in one. Grafts were all harvested from healthy adult living donors. Large for size graft (LFSG) is defined as; graft size matching graft-to-recipient weight ratio (GRWR) ≤3. Median follow-up of the patients were 9 months (1-86 months). Nutritional status of the patients was assessed by biochemical and anthropometric measurements. The post-operative complications, graft and patient survival were compared between the groups with and without LFSS. Results: 64 children (44 male, 20 female) with a median age of 4.1 year (range 0.5-12 years) and with a median weight of 15kg (5.5-33kg) were performed LLS liver transplantation. Twenty-eight of them were less than 10kg. Median LLS volume was 260g (range 80-365g) and median GRWR were 1.92 (range 0.75-4.7). Fourteen patients (21%) (6 male, 8 female) (median weight 7.5kg (range 5.5-10kg)), had GRWR ≤3 (median GRWR %3.6 (range 3.1-4.7). While had malnutrition rate was 78% in initial admission, 21.4% at the time of transplantation in LFSG group. Although the complication rate was significantly higher in LFSG group (p<0.05), overall graft and patient survival was similar in both groups. Conclusion: LFSS has increased risks for the post-operative complications. Intensive nutritional support is needed in infants for to catch up their ideal weight prior to transplantation.

P0616

Title:
IMPACT OF LARGE GRAFT SIZE ON PROGNOSIS IN CHILDREN WITH LIVING DONOR LIVER TRANSPLANTATION

Hasan A Yukselkaya 1, Cigdem Arikan 1, Unal Aydin 1, Murat Zeytun 1, Sema Aydogdu 1, Murat Kilic 1
1) Ege University School of Medicine, Organ Transplantation and Research Center, IZMIR, TURKEY

Summary:
Living donor liver transplantation (LDLT) with left lateral segment (LLS) for small pediatric patients is a well accepted procedure; but the size of graft may be too large especially for children under 10 kg. Aim: To analyze the impact of large graft size on prognosis in children with LDLT Method: Between October 1999 to May 2007, 69 LDLT were performed on 64 patients in our center. LDLT was performed by using the donor’s LLS in 64 (92.7 %), right lobe in 4 (6.3%) and left lobe in one. Grafts were all harvested from healthy adult living donors. Large for size graft (LFSG) is defined as; graft size matching graft-to-recipient weight ratio (GRWR) ≤3. Median follow-up of the patients were 9 months (1-86 months). Nutritional status of the patients was assessed by biochemical and anthropometric measurements. The post-operative complications, graft and patient survival were compared between the groups with and without LFSS. Results: 64 children (44 male, 20 female) with a median age of 4.1 year (range 0.5-12 years) and with a median weight of 15kg (5.5-33kg) were performed LLS liver transplantation. Twenty-eight of them were less than 10kg. Median LLS volume was 260g (range 80-365g) and median GRWR were 1.92 (range 0.75-4.7). Fourteen patients (21%) (6 male, 8 female) (median weight 7.5kg (range 5.5-10kg)), had GRWR ≤3 (median GRWR %3.6 (range 3.1-4.7). While had malnutrition rate was 78% in initial admission, 21.4% at the time of transplantation in LFSG group. Although the complication rate was significantly higher in LFSG group (p<0.05), overall graft and patient survival was similar in both groups. Conclusion: LFSS has increased risks for the post-operative complications. Intensive nutritional support is needed in infants for to catch up their ideal weight prior to transplantation.

P0617

Title:
LIVING RELATED LIVER TRANSPLANTATION FOR CHILDREN WITH METABOLIC LIVER DISEASE

Murat Cakir 1, Masallah Baran 1, Cigdem Arikan 1, Murat Zeytun 1, Murat Kilic 1, Sema Aydogdu 1
1) Ege University School of Medicine Organ Transplantation and Research Center, IZMIR, TURKEY

Summary:
The efficiency and success of liver transplantation has been proven in pediatric life-threatening acute and chronic liver diseases. Outcome of medical treatment in some metabolic pediatric liver diseases is poor; therefore liver transplantation is the only definitive and curative treatment modality for those patients. In some cases, a living-related donor (LRLT), who is heterozygous for the disorder, is required due to scarcity of cadaveric (CLT) and non-related donor. Herein, we aimed to report our experience with live heterozygous donors for metabolic liver disease in a country of a deceased donor organ donation rate is only 1.5 per million people. Method: Patients’ data were reviewed from charts retrospectively. Twenty three children (median age 7.5 yrs; range 6 mos-17 yrs, 12 female,11 male ) underwent 26 liver transplantation (n=16 LRLT , n=10 CLT) due to metabolic liver disease between March 1997 and January 2008. Primary diagnosis included Wilson disease (n=9), type I tyrosinemia (n=8), glycogen storage disease (GSD) (n=4), alpha-1 antitripsin deficiency (n=1) and familial hyperlipidemia (n=1). Results: Sixteen of 23 patients (tyrosinemia type 1 n=8, Wilson’s Disease n=3, GSD n=3, familial hyperlipidemia n=1, alpha-1 antitripsin deficiency n=1) received liver from related donors. These donors are respectively mother (n=12, 70%), father (n=2 11%), other related donors ( n=3,17%). Histopathological examination of all donor liver specimen were normal. There was not any donor mortality or major morbidity. Hepatocellular carcinoma (HCC) was found concomitantly in 7 patient with tyrosinemia type 1.Patient survival for 1, and 5 year was 88%, 80% and 80% respectively .No patient had tumor recurrence at median of 47 month follow up after transplantation. Patients with tyrosinemia were followed by urine organic acid levels in posttransplant period. Urine succinylacetone levels
remained high in 5 patients during posttransplant follow up. Tubular phosphor reabsorption in patients with tyrosinemia was recovered after liver transplantation within 3 months. Two patients with tyrosinemia were lost due to chronic rejection and bowel perforation. CONCLUSIONS: LDLT offers a safe and effective modality of treatment for metabolic liver disease to overcome the problem of organ shortage especially in countries where the chance of receiving an organ from a deceased donor is low.

P0618

Title: PEDIATRIC LIVER TRANSPLANTATION FROM ANTIHBC POSITIVE DONOR: OUTCOME, EFFICACY OF LAMUVIDINE PROHYLAXIS

Cigdem Arikan 1, Hasan A Yukselkaya 1, Gokhan Tumgor 1, Ozacar Tijen 1, Sema Aydogdu 1, Murat Killic 1
1) Ege University School of Medicine Organ Transplantation and Research Center, IZMIR, TURKEY

Summary:
BACKGROUND: hepatitis B infection after liver transplantation occurs at a high rate in recipients of donors with HBcAb in both cadaveric and living donor liver transplantation (LDLT). The outcome and care of children who underwent AntiHBc (+) donor LT is not well defined yet. AIM: To detect the incidence of HBV infection in recipients who received HBcAb-positive donor livers and the effect of lamivudine prophylaxis. METHOD: Between March 97 and May 2007, 100 patients underwent 110 LT and 20 anti-HBs+, HbsAg- patients received an hepatic allograft from a donor positive for anti-HBc. Lamivudine prophylaxis was administered to consecutive 23 patients who transplanted after 2003. Of the 23 patients, 2 were anti-HBs+, anti-HBc+ before transplant, one was anti HBs-, anti-HBc+ and 20 were anti-HBs+, anti-HBc-. Serum samples from the donor and recipient were tested for HBcAb, HBV DNA, and hepatitis B surface antibody. Liver biopsies from grafts were tested for HBV DNA. De novo HBV infection was defined as positive HBs Ag in serum. RESULTS: Five of 23 (22.7%) recipients developed de novo HBV infections compared with 0 of 81 (0%) recipients who received anti-HBc-negative donor livers (P <.00001). The 5 patients who did not receive lamivudine profylaxis became HbsAg+ at median 4 months (2- 28). Of the 5 recipients, 3 are alive (2 of them anti HBs+, anti HBc- after 10 months lamuvidine) and (40%) were died with an average follow-up of 1 year (range 14-36 months) due to hepatitis B related graft dysfunction. Recipient with allograft dysfunction has significantly elevated viremia levels compared with the other de novo hepatitis B recipients (p<0.003). Eighteen of 23 recipients who received lamuvidine at the post transplant first day and continued indefinitely, did not infect with HBV. Median follow-up was 20.8 months (range, 6 to 36 months) in this group and they had HBs Ab titers greater than 200 mIU/ ml during follow up. No side effects of lamuvidine therapy were reported by any of the patients. CONCLUSION: Lamuvidine well tolerated and seems effective prevent de novo HBV infection in HbsAg- pediatric recipients of hepatic allograft from anti-HBc+ donors.

P0619

Title: Hepatitis A virus: changing epidemiology in Porto Alegre, southern Brazil

Lenita Simões Krebs 1, Cristina Targa Ferreira 1, Carlos Oscar Kieling 1, Tani Maria Schilling Ranieri 1, Themis Reverbel da Silveira 1
1) Hospital de Clinicas, Porto Alegre, Brazil

Summary:
Hepatitis A virus (HAV) is endemic in Brazil and universal vaccination is not yet a routine in our country. People who desire to have vaccination needs to pay for it. The aim of this study is to compare the prevalence of HAV in children and adolescents in Porto Alegre, in two different periods of time and to evaluate the necessity of implementing the universal vaccination. Methods: a study was performed in Porto Alegre, southern Brazil, to evaluate the prevalence of HAV and its correlation to age and socioeconomic status in 1995 and it was repeated in 2006. 387 and 484 children and teenagers belonging to two different socioeconomic groups were studied in 1995 and 2006, respectively. The lower income group included 199 and 241 subjects, in 1995 and 2006, and the high level group included 188 and 243 subjects in the same periods. Antibodies anti-HAV were determined by a solid-phase ELISA method (Abbott) in 1996 and by a electrochemiluminescence immunoassay “ECLA” method (Roche) in 2006. Results: In the low income group there was a decrease in the prevalence leading more people susceptible to HAV and there was a significant increase in prevalence in the high income group mainly in the younger children. In 1995 the prevalence was 20% in children 1 to 5 years of age, 53% in the group of 6 to 10, 60% in children 11 to 15 years and 71% in the 16 to 20 years in the low socioeconomic group. In 2006 this prevalence was 17%,
38%, 45% and 52% in the same group. In higher income people these rates were 3%, 7%, 11% and 17% in 1995 and 55%, 52%, 49% and 27% in 2006. This increase in prevalence in this group was probably due to individual vaccination. Conclusion: there was a change in the prevalence of HAV between 1995 and 2006. Poorer children and adolescents and oldest high income people seems to be more susceptible to HAV infection. These results suggest universal vaccination against HAV could be a good strategy in this part of the world.

<table>
<thead>
<tr>
<th>Socioeconomic level / ages 1995 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low income group total%</td>
</tr>
<tr>
<td>High income group total%</td>
</tr>
</tbody>
</table>

P0620

Title: Acute Liver Failure: Autoimmune Hepatitis; an entity with a better prognosis.

D’Agostino Daniel 1, Sanchez Camila 1, Boldrini Gustavo 1, Muñoz Nancy 1, Olleta Laureana 1
1) Hospital Italiano, Buenos Aires, Argentina

Summary:
Aim: To determine the etiologies, evolution and prognosis of children with ALF admitted in a single Liver Transplantation Center. Methods: A retrospective review was conducted on 80 children younger than 18 that were admitted in the Liver Transplant Center between December 1989 and December 2007. The ALF was defined as Liver Failure within 6 weeks after admission, presenting a PT > 28 s or INR >2.5 with or without encephalopathy. Results: The mean age of the 80 patients was 5.1 years (r 0.1 a 17). Etiologies were divided into 4 groups: G1= Viral Hepatitis Type A: 31 patients (38.7%), G2= Indeterminate Hepatitis: 25 patients (31.2%), G3= Autoimmune Hepatitis (AIH): 15 patients: 9 type I; 6 type II (18.75 %), G4= Miscellaneous 9 (11.5%), Toxic 3, Hemochromatosis 3, Metabolic 2 and Wilson 1. Study sample characteristics were: G1= mean age 5.7 y.o. (r 1-15); 4 recovered (12.9%), 5 died due to liver transplant contraindication, 5 died in waiting list and 17 were transplanted (66.6% survival rate after transplant). G2= mean age 4.6 y.o. (r 0.6-17); 4 recovered (20%), 3 died in waiting list and 17 were transplanted (70.5% survival rate after transplant). G3= mean age 7.2 y.o. (r 1-17); 7 recovered (42.9%), 1 died in waiting list and 7 were transplanted (85.7% survival rate after transplant). G4= mean age 4 y.o. (r 0.1-14); 2 recovered (22%), 2 died in waiting list and 5 were transplanted). A significantly better prognosis was found when comparing the Autoimmune Hepatitis evolution with GI-III (p: 0.01). Conclusions: Autoimmune Hepatitis is an important cause of liver failure in our center. Earlier diagnosis and treatment allow a better evolution when compared to other etiologies.

P0621

Title: Monitoring of Tacrolimus in children under 3 years old following liver transplantation.

D’Agostino Daniel 1, Sanchez Camila 1, Boldrini Gustavo 1, Invenenato Hernan 1, Giménez M 1, Ciardullo Miguel 1
1) Hospital Italiano, Buenos Aires, Argentina

Summary:
Aims: a) Evaluate Tacrolimus (TAC) absorption and perform the pharmacokinetics study in children under 3 years of age. B) Correlate Tac serum concentrations with intestinal transit. Materials and Methods: Open prospective study in 14 patients with a mean age of 2.3 y.o. (r 1-3 y.o.), after at least 6 months of liver transplantation and being clinically stable . After Tac intake, a 1 ml basal sample (Co) in EDTA was obtained, and after Tac intake at 0.15 mg/kg, 7 samples, C1 (30’), C2 (60’), C3 (90’), C4 (120’), C5 (240’), C6 (360’), C7 (540’) were obtained. To assess the blood concentration level, an IMX-Tac ABBOT analyzer was used and the resulting value was expressed in ng/ml. Concomitantly with Tac dose, they were orally administered. Rojo Allura El 29 in order to define intestinal transit time. Those children showing an intestinal time lower than 24 hours were defined as normal group and those showing a higher than 24 hours were defined as slow intestinal time group. Results: measurements showed a Co mean value of 7.1 ng/ml +/-27 ng/ml and C min trough level means value of 7.9 ng/ml. +/- 26, with no statistical difference between these concentrations. For these mean values, the Cmax was of 18.1 ng/ml with a Tmax of 83’ +/- 59’, expressing an AUCo-24 of x 6072 ng min ml +/- 2776. The elimination kinetics was ranging 1(logarithm conversion R2 0.96). The several blood level points used (C0, Ct, Cmax) to predict the AUC value, showed a good correlation with the AUco-24 in every point, R2, 0.70, 0.75, 0.76, respectively. Normal intestinal time group with mean of 7 hours (8 children) and slow intestinal time group with mean of 25 hours (4 children) showed no difference with Cmax and Tm. Comment: Tacrolimus pharmacokinetics profile in children under 3 years of age showed a good bioavailability. These results suggest a good AUC correlation and predictability with all points. Intestinal transit time does not affect Tac concentrations. New studies in patients with rapid intestinal time (diarrhea) should be performed.
Title: Quality of life in children liver transplant recipients: a permanent challenge

D’Agostino Daniel 1, Sanchez Camila 1, Eymann Alfredo 1, Boldrini Gustavo 1, Olleta Laureana 1, Muñoz Nancy 1
1) Hospital Italiano, Buenos Aires, Argentina

Summary
Aim: Determining the quality of life of this population using a validated measure for children who survived liver transplantation and to compare it with both, a normal population and another group of patients with Juvenile Rheumatoid Arthritis (JRA). As a secondary aim we intent to find possible differences of quality of life between patients who received a living-related allograft or a cadaveric allograft. Methods: We conducted a single-center study of 54 pediatric LT recipients aged 5-18 years, all of whom had had LT at least one year before. We used the Children Health Questionnaire Parent Form 50 (CHQPF50) Spanish validated version. This instrument was completed by the parents after the clinical assessment. Higher scores reflecting better health. Our sample was 54, with a relation of 1-5 to the control group (n=274) and the JRA group (n=23). The whole universe of LT patients on follow up was 180 patients Results: Study sample characteristics were: mean age 11.6 years (r 5-17), mean age at LT 3.7 years (r 1-14) and the average time since LT 7.7 years. The mean physical summary score of the LT recipients was lower than that of the normal population and similar to the children with JRA; but without statistical significance (P=0.16). The mean psycho-social summary score in this population was lower than that reported both for the control group and for the JRA group (P=0.01). Compared with the normal population, LT recipients had lower subscale scores for self-esteem (P=0.003), general health perception (P=0.000), and emotional impact on parents (P<0.002). Bodily pain was lower in LT patients. Living-related allograft children showed a tendency to a better physical summary score than cadaveric allograft recipients (P=0.08). Children with higher summary scores tended to be younger at the time of transplantation, had mothers with a university degree and received a living-related organ. Conclusions: Our study showed a negative impact in the psycho-social area in LT recipients and a tendency to a better physical summary score in living-related allograft recipients. Measuring the quality of life in LT children is of the main objectives in this population for their follow up.

Title: Mesenchymal hamartoma of the liver and portal hypertension: A case report

Fabiana M. Silva 1, Edna D. M. Rocha 1, Amália M. P. Lustosa 1, Maria Ceci V. Martins 1, Hildenia B. Ribeiro 1
1) Albert Sabin Children’s Hospital, Fortaleza, Brazil

Summary
Introduction: Mesenchymal hamartoma (MH) of the liver is the second most common benign liver tumor happening in infants, yet its biology and pathogenesis are poorly understood. This kind of tumor may be multifocal or may occasionally contain angiomatous elements, but, typically, it presents itself as a large benign multicystic liver mass. Case Report: The case involves a 12-year-old girl who sought the gastroenterology department of Albert Sabin Children’s Hospital due to an increase in her spleen. An ultrasound examination of her abdomen revealed the presence of hypoechogenicity within the hepatic parenchyma, which suggests hepatic fibrosis. The abdominal computerized tomography revealed areas of low attenuation permeated by outbreaks of high attenuation without distortion of the hepatic parenchyma. A liver biopsy was performed, uncovering fragments with hepatic portal expansion and proliferation of blood vessels and bile ductules on a slack stroma, which suggests MH. Laboratory tests as serologies for cytomegalovirus, measles, toxoplasmosis, and viral hepatitis were negative. Just as the immunological markers and the FAN. Serum levels of ceruloplasmin, copper and alpha-1-antitrypsin were normal. The patient developed upper gastrointestinal bleeding five months after the diagnosis by biopsy. The Esophagogastroduodenoscopy (EGD) indicated esophageal varicose veins of high caliber. She underwent sessions of sclerotherapy with progressive improvement of the varicose veins. In the last EGD (3 years after the diagnosis) only residual esophageal varicose veins were found. Liver enzymes have been kept in normal levels since the beginning of the follow up. The leukopenia and plaquetopenia still persist as the only laboratory changes, possibly as consequence of hyperspleen. Discussion and Conclusion: MH is widely believed to be a non-neoplastic hamartomatous lesion resulting from abnormal embryonal development of mesenchymal tissue of the portal tracts. Abdominal pain, anorexia, vomiting, and poor weight gain have also been reported, but portal hypertension is not an expression commonly described. Cut surfaces of this kind of tumor may have mesenchymal (a solid appearance) or cystic predominance (multiloculated cystic masses). The treatment of choice remains surgical resection, although the large size and the involvement of vital structures may sometimes make complete excision difficult. A few authors indicate that these lesions may undergo spontaneous regression.

Title: LIVER TRANSPLANT PEDIATRIC PRELIMINARY VENEZUELAN EXPERIENCE
P0625

Title:
MOFETIL MYCOPHENOLATE LIKE ALTERNATIVE OF TREATMENT FOR PEDIATRICS PATIENTS WITH RESISTANT HEPATITIS AUTOIMMUNE AND INTOLERANTES TO STEROIDS AND AZATHIOPRINE

Pestana Elena 1 ,  López Carmen Esther 2 
1) Hospital San Juan De Dios, Caracas, Venezuela 2) Hospital J M de los Ríos, Caracas, Venezuela

Summary:
INTRODUCTION AND OBJECTIVE: The initial treatment in the pediatrics patients continues being prednisone single or in combination with azathioprine and the dose is diminished gradually between week 4 and 8 once obtained improvement of aminotranferase, the patients stay with low doses of steroids necessary to maintain normal levels of aminotranferase. The mycophenolate mofetil is a therapeutic alternative in those patients who do not respond or are intolerants to azathioprine and steroids. The objective of the present research is to evaluate the effectiveness of mycophenolate mofetil in pediatrics patients with diagnosis of hepatitis autoimmune that were intolerants or they did not respond prednisone and azathioprine. RESULTS: 6 patients with hepatitis diagnosis included themselves to whom liver transplant was done to them from April of the 2005 to January of the 2008, 12 patients in ages between 5 years and 13 years with ages rates of 11,5 ± 3,13 years, 3 (27,28%) male and 8 (72,72%) female. All the patients presented positive serology for CMV previous to the transplant and 7 presented positive serology for previous EBV to the transplant. All the patients had score PELD 9 and 17. The chronic liver disease that took them to need do liver transplant to them was 5 Atresia of extrahepatic biliary ducts, 2 progressive familial intrahepatic cholestasis, 1 hepatic fibrosis congenital, 1 cryptogenic cirrhosis, 1 hepatoblastoma and 1 hepatitis autoimmune. To 8 of the patients it was made liver transplant of relate living donor, 2 to them of cadaveric donor, 1 a transplant. The time that they stay in intensive therapy was of 11 days to 30 days with 20,29 ± 7,52 days, and the later time in hospitalization went of 3 to 15 days. The scheme of initial immunosupresion was cyclosporine, prednisone, mycofenolato to 3 patients and 7 tacrolimus and prednisone. Two patients presented acute rejection which was treated with bolus of steroids by 3 days with complete resolution of the dysfunction of the graft. All the patients presented infectious complications in the first 6 months of the postransplant among them 4 patient urinary infections documented by culture urine by Proteus 2 Mirabilis and E. Coli 2. 5 patients presented infections by CMV those that we administered to them to valgancyclovir by oral route with suitable answer. Two of the patients presented neurological complications, 1 presented generalized tonic-clonic convulsions without neurological deficit, it was made TAC and EEG to him which were normal with elevated levels from cyclosporine and low levels from magnesium which were corrected. One patient presented hallucinations, was made normal cerebral TAC and EEG to him, received haloperidol by a period of 3 months, with satisfactory evolution. One of the patients presented biliary complication to the 9 months of the postransplant, demonstrated by abdominal ultrasound and colangioresonance (stenosis of the biliary ducts), was placed biliary stent with complete improvement of the liver function. One patient with hepatopulmonary syndrome previous to the transplant, which was not solved later to he himself, treatment was made to him to endovascular of shunt AV pulmonary Artery left inferior lobe with resolution of the persistent hypoxemia and this patient presented vasospasm hepatic artery receiving treatment with intrarterial nitroglycerin and positioning of stent with complete improvement of the liver function. The survival of the graft and the patients is at the present time of a 100%. CONCLUSION: The liver transplant nowadays constitutes in Venezuela a therapeutic possibility for the pediatrics patients with terminal, progressive and irreversible liver disease, and that is not free of diagnosed and treated complications but that to the being in time we have a 100% of survival as much of the graft as of the patients.
P0626

Title:
PEGYLATED INTERFERON ALFA-2a IN COMBINATION WITH LAMIVUDINE FOR TREATMENT OF CHRONIC HEPATITIS B IN PEDIATRICS PATIENTS

Pestana Elena 1, Leon Keira 1, Soriano Ma Gabriela 3, Pierre Reinaldo 4, Olza Maria Teresa 2, Hassan Isaac 5
1) Hospital San Juan De Dios, Caracas, Venezuela 2) Hospital General del Oeste, Caracas, Venezuela 3) Hospital General, Valera, Venezuela 4) Clínica Razzetti, Barquisimeto, Venezuela 5) Policlínica Metropolitana, Caracas, Venezuela

Summary:
INTRODUCTION AND AIMS: Combined treatment with pegylated interferon and lamivudine can constitute a suitable alternative in order to obtain the seroconversion of pediatrics patients with chronic infection virus B. The aim of the present study was to evaluate the response of the pediatric patients with infection chronic by virus B given by loss of Age VHB and DNA VHB and the appearance of antibodies against Age VHB and normalization of aminotranferasas in patients treated with pegylated interferon alpha 2a in combination with lamivudine. PATIENTS AND METHODS: Pediatrics patients with data included themselves of chronic infection by virus B like positive Age VHB, Ac negative Age VHB, DNA positive VHB, elevation of aminotranferasas by more than 6 months These patients they received treatment with pegylated interferon alpha 2a and lamivudine 4 mgs/kg/day by 48 weeks. RESULTS: The transmission routes were 3 patients by vertical route, 8 by transfusional route and 1 it is not known. The ages average they were of 10,3+3.47 years, with time average of infection by virus B of 5,2+3.93 years. The average of aminotranferasas at the beginning of treatment was AST 112,3+46,3 and ALT to the 12 weeks post treatment and the AST levels were 33,3+12,14 and ALT 35,5+13,51. The histological findings were 2 of the patients had activity inflammatory moderate and 10 slight activity and 2 developed moderate fibrosis and 10 slight fibrosis. Only 1 patient developed anemia and leucopenia that not suspension treatment. Twelve (12) patients (100%) developed fever, 8 (66%) migraine during the 4 first weeks of treatment soon remained asymptomatic during the 48 remaining weeks of treatment. 12 patients improvement aminotranferases in the control to the 12 weeks post treatment. Two (3) (25%) of the patients they presented loss of Ags VHB and Ac positive Ags VHB to 12 weeks post treatment. Of 12 patients 5 (42%) they made seroconversion (Age VHB, negative DNA VHB and Ac positive Age VHB) to the 48 weeks of treatment and to the 12 weeks post treatment pos. CONCLUSION: Treatment combined with pegylated interferon and lamivudine constitutes one effective and safe therapeutic option for pediatric patients with infection chronic by virus B.

P0627

Title:
A CASE OF CONGENITAL INTRAHEPATIC PORTOSYSTEMIC ANEURISMAL VENOUS SHUNT: UNEXPECTED DIAGNOSIS AND RAPID SPONTANEOUS CLOSURE

Francesco Cirillo 1, Andrea Iovino 1, Valentina Marra 1, Raffaele Iorio 1, Emanuele Nicastro 1, Roberto Paludetto 1
1) Department of Pediatrics, University Federico II, Naples, Italy

Summary:
INTRODUCTION. Congenital intrahepatic portosystemic venous shunt (cIPSVS) is an uncommon vascular abnormality in absence of a primary liver disease and usually discovered in the newborn through metabolic screening for galactosaemia or through the detection of a hepatic cystic lesion at prenatal ultrasonography. cIPSVS can also be discovered in adult age serendipitously or for the presence of hepatic encephalopathy. The aneurismal-like IPSVS (type III) is the rarest form, whose outcome is poorly known. The improvement in image techniques led to a mounting number of asymptomatic cases. We describe a child born to a pregnancy managed with an induced delivery because of a vascular anomaly prenatally diagnosed as umbilical vein varix that after birth revealed to be a cIPSVS. CASE REPORT. Mother gravida 0, para 0. A Doppler USG scan on 30th week of gestation showed an intrahepatic anechogenic image measuring 7 x 10 mm consistent with an intra-abdominal umbilical vein varix. Considering the risk of intrauterine fetal demise, a timing of the delivery was managed. The child was born at 33 weeks of gestation by caesarean section, with birth weight of 2300 g (AGA), with Apgar scores of 8 at 1’ and 9 at 5’. On 2nd day of life an abdominal Doppler USG showed an intrahepatic aneurismal-like communication of 17 x 8 mm with turbulent flow, between the left portal branch and the left hepatic vein. Liver function tests, blood cell count and coagulation were normal. Ammonia was 93 mmol/L. The child was breast fed. At 12 days another Doppler USG scan on 30th week of gestation showed an intrahepatic anechogenic image measuring 7 x 10 mm consistent with an intra-abdominal umbilical vein varix. Considering the risk of intrauterine fetal demise, a timing of the delivery was managed. The child was born at 33 weeks of gestation by caesarean section, with birth weight of 2300 g (AGA), with Apgar scores of 8 at 1’ and 9 at 5’. On 2nd day of life an abdominal Doppler USG showed an intrahepatic aneurismal-like communication of 17 x 8 mm with turbulent flow, between the left portal branch and the left hepatic vein. Liver function tests, blood cell count and coagulation were normal. Ammonia was 93 mmol/L. The child was breast fed. At 12 days another Doppler USG showed the absence of flow between the portal venous system and the hepatic veins, demonstrating a rapid spontaneous closure of the cIPVS. Ammonia was 37 mmol/L. A further USG confirmed this picture at one month of age. The patient was well after a three months follow up. CONCLUSIONS: Large series of patients with the aneurismal form of cIPVS are lacking in literature, with scant conclusive evidence about the management of this condition. We describe an unusually rapid spontaneous closure of the type III cIPVS. We also would like to notice that the role of the prenatal USG for rare vascular abnormalities should not be overestimated, and a prenatal diagnosis should always be confirmed after birth.

P0628
Gaucher Disease: Report of Five Cases

Emese Majorová 1, Kamila Trebuòová 1, Jana Šaligová 1, Eva Bálintová 1
1) Children’s Faculty Hospital, University of Pavol J. Šafarik, 2nd Department of Childrens and Adolescents, Košice, Slovakia

Summary:

INTRODUCTION: Gaucher disease is the most common enzyme deficiency disorder among the group of approximately 50 inherited lysosomal storage disease. The underlying cause is a deficiency of glucocerebrosidase (acid â-glucosidase) a lysosomal hydrolase involved in the stepwise degradation of complex glycosphospholipids. The frequency of N370S mutation apparently varies per country. While this mutation was found in 63% in Portuguese population, in Poland L444P mutation is the most prevalent, followed by N370S. OBJECTIVE: Prevalence of this rare disorder in Slovakia is not known. We present five patients with Gaucher disease from Eastern Slovakia region. METHODS: In the patients evaluation we assessed: Time of diagnosis, hepatomegaly, splenomegaly, neurological impairment, ocular symptoms, skeletal changes, time of survival. In laboratory tests we followed: glucocerebrosidase activity, level of acid phosphatase (ACPc and ACPpr) and level of tartrate-resistant acid phosphatase (TRAP). DNA analysis was performed in all patients and bone marrow morphology was evaluated. RESULTS: The youngest child at the time of diagnosis was 6 months old boy. The oldest was 19 years old boy. There were four boys and one girl aging 6 months- 19 years. N370S/L444P mutation was found in two children. Activity of acid â-glucosidase was between 1,2-12% of normal values. In the bone marrow the Gaucher cells were present in all children. Hepatomegaly and splenomegaly were present in all patients. Three of children showed neurological symptoms. The bicytopenia was present in all children. CONCLUSIONS: Gaucher disease often presents at paediatric age and early diagnosis is imperative in the prevention of irreversible debilitating and potentionally life-threatening disease complications. One of our patients is successfully threated with macrophage targeted glucocerebrosidase for 3 years with significant improvement. The oldest patient is now 31 years old and is followed up for 18 years.

Severe portopulmonary hypertension in a pediatric patient secondary to portal vein hypoplasia

Erick Hernandez, Lesley Smith, Gennaro Selvaggi, Andreas G. Tzakis, John Thompson, Debra Fertel, Tomoaki Kato, George M. Zacur

Summary:

Background: Portopulmonary hypertension (PPHTN) can be described as the increased mean pulmonary artery pressure (mPAP) >25 mmHg, increased pulmonary vascular resistance (PVR) >240 dyne-sec-cm, a normal mean pulmonary occlusion pressure (mPAOP) <15 mmHg, and the association with portal hypertension. Although pharmacologic therapy has been used as a bridge to liver transplantation. Portopulmonary hypertension remains a condition with a high morbidity and mortality. Objectives: To present a previously unreported case of PPHTN due to hypoplastic portal vein in a 16-year old boy who showed significant improvement after pharmacologic and surgical treatment. Case Summary: A 16-year old boy presented with a two-year history of progressively worsening dyspnea on exertion and fatigue. Upon presentation, the child had recently suffered a severe episode of hematemesis causing hemorrhagic shock that required packed red blood cell transfusions. His echocardiogram was consistent with pulmonary hypertension, but without evidence of structural or congenital heart defects. His right cardiac catheterization showed a mPAP of 78mmHg, the PVR was 811 dyne-sec-cm, with a normal pulmonary capillary wedge pressure of 7mmHg. Multiple imaging techniques were also performed illustrating that his portal vein was quite hypoplastic (4.5mm), as well as his splenic and mesenteric veins, while liver biopsy was normal. Sildenafil was started to control his pulmonary hypertension (150 mg daily), with minimal improvement. Upper endoscopy was performed, which demonstrated Grade III and Grade II esophageal varices from the proximal to the distal. Attempts to stop the bleeding were made through banding of the varices. However, they proved to be unsuccessful, and the patient underwent gastric devascularization and splenectomy. Transplantation could not be considered due to the elevated pulmonary artery pressures. Epoprostenol sodium was started (intravenous drip 25 ng/kg/per minute) in an attempt to reduce those pressures. His most recent cardiac catheterization showed a significant decreased mean pulmonary artery pressure to 38mmHg. Conclusions: This is an index reported case of PPHTN due to anomalous portal vasculature in a pediatric patient. Through surgical and medical management of the portal hypertension and esophageal varices, as well as pharmacological therapy for pulmonary hypertension the patient improved significantly.

Long-Term Follow-Up of 22 Children With Autoimmune Hepatitis

Gokhan Baysoy 1, Figen Gurakan 1, Inci Nur Saltýk-Temizel 1, Hülva Demir 1, Nuray Uslu 1, Yusuf Usta 1
1) Hacettepe University Medical Faculty, Ihsan Dogramaci Children's Hospital, Department of Pediatric Gastroenterology, Hepatology and Nutrition,
Ankara, Turkey

Summary:
Objectives: The course of autoimmune hepatitis (AIH) varies widely ranging from complete remission to progression to cirrhosis and factors affecting prognosis are not well understood. We present long-term follow-up of 22 cases.

Methods: Patients (mean age 118±39.2m, 11 girls) were followed for median 47.5 m (19-125) with physical examination, laboratory and radiological tests, and liver biopsy when necessary. Results: The median initial laboratory tests and ranges were: AST 517 IU/L (74-2462), ALT 430 IU/L (78-1531), total protein 8.8 g/dL (7.4-11.1), and IgG 3050 mg/dL (1190-4146). Hepato and splenomegaly were present in 63.6% and 45.5% respectively. ASMA, ANA, LKM-1 were positive in 59.1%, 31.8%, and 9.1% respectively. Seven patients had multiple autoantibodies, 2 had AMA+ASMA. Pre-treatment mean HAI was 10.2±4.6, and fibrosis score 2.2±1.9, with 8 cirrhotic patients (36.3%). Three patients who had sclerosing cholangitis were diagnosed as overlap syndrome; 2 of them also had ulcerative colitis (UC). Associated diseases included SLE in 2, JIA in 2, celiac disease in 1, and pteryriasis lichenoides chronica in 1 patient. Treatment consisted of corticosteroids (CS)+ azathiopurine (AZA) in 18, CS in 4, CS+AZA+UDCA in 7, and UDCA in 1. The median treatment time for CS, AZA, and UDCA were 23(6-90), 28(6-116), and 9(4-45) months respectively. Liver enzymes normalized in median 4(1-31) months. Five patients' (one SLE, one overlap) liver enzymes never normalized. Eighteen patients had one or more exacerbations. Five patients' (22.7%), autoantibodies disappeared. Nine patients were re-biopsied after median 26.5m(13-47), mean HAI was 5.2±6.3, fibrosis score 1.5±1.9, however 1 developed cirrhosis. Eight children developed portal hypertension. Therapy was stopped in 7 patients (31.7%) after mean 29.4±13.5m, their remission continued for 17.1±10m (4-35). One child with overlap and UC had liver transplantation and one with AIH+SLE is in the waiting list. Age of presentation, laboratory/biopsy findings, treatment, normalization of liver enzymes, exacerbations during treatment and autoimmune markers except ANA [more frequent in girls (p<0.05)] did not differ among sexes.

Conclusion: Type I AIH was more common than type II. Comparison of type I and II, and AIH and overlap patients was impossible due to small number of AIH type II (n=2) and overlap (n=3) patients. Although biochemical remission was quickly obtained, some patients developed cirrhosis and portal hypertension. In spite of treatment cessation one third of the patients stayed in remission.

P0633

Title:
Hepatitis C virus infected children of anti-HCV antibodies positive mothers. A descriptive and prospective clinical study

Ghazala Balhaj 1, Sheikha Neyadi 1, Sheek Hussein NM 2, Sayenna Uduman 1
1) Faculty of medicine and health sciences, pediatric department, UAE university, P.O.Box 17666, AI AIN, UAE 2) Department of preventive medicine, P.O.BOX 1073, Al AIN, UAE

Summary:
BACKGROUND: Natural history studies in perinatally infected children are few and HCV infection is frequently unrecognized. compared to adults, the disease is frequently less severe or more prolonged. AIM: The purpose of this communication is to share our longitudinal clinical observation of HCV infected children from the time of birth. METHODOLOGY AND RESULTS: Anti-HCV antibodies screening was conducted among women attending antenatal clinics over a 12 month period. Of the 618 women enrolled, 12 mothers were HCV infected with overall prevalence rate of 1.9% (95% confidence interval 0.8-3.0). Three infants born to HCV infected mothers had acquired the infection and therefore the mother to infant transmission rates was 25%. These children were symptomatic and proven to have fluctuating viral and biochemical evidence of chronic hepatitis over a period of 48 months of clinical observation. Our clinical observation highlights the need for periodic HCV infection monitoring in childhood. CONCLUSION: Because of the rareness of information available in the literature and for better understanding of the natural history of childhood HCV infection in our community, a prospective nationwide multicenter study of HCV infected children at birth is warranted.

P0634

Title:
Acute liver failure in children: Brazilian experience

Adriana M Porta 1, Juliana R Vasconcelos 1, Irene K Miura 1, Renata PS Pugliese 1, Vera L B Danesi 1, Gilda Porta 1
1) Unit of Hepatology, Children´s Institute HC-University of São Paulo, São Paulo, Brazil

Summary:
Objective: To evaluate the clinical characteristics, evolution and the prognostic factors in children with ALF. Patients and methods: 41 children with ALF were retrospectively studied from January 2001 to December 2007 in 3 centers from São Paulo, Brazil. ALF was defined as PT > 15 sec or INR > 1.5 in the presence of clinical hepatic encephalopathy (HE) or PT > 20 sec or INR > 2.0 with or without HE; no known evidence of chronic liver disease and evidence of acute liver injury. A standard adult clinical coma grade scale was used for older children and, for infants and children < 4 years, the scale adopted by Pediatric Acute Liver Failure Study group. Results: The etiologies of ALF were: indeterminate 21 (51.2%) cases; HAV 13 (31.7%); Wilson`s disease 3 (7.3%); autoimmune hepatitis (AIH) 2 (4.8%) and one case each of EBV and drug hepatotoxicity. Gender: 22 male and 19
female; age at presentation varied from 5 to 173 mo (median 58 mo). 24/31 pt were from urban zone and 7 from rural zone; no one had received hepatitis A vaccine. There was history of contact with hepatitis A in 6/16 cases. At the admission 36 had HE (grades I (3pt) II (2pt) III (7) IV (24)) and 2 other cases developed HE afterwards. Laboratory data: the median and range values of AST, ALT, total bilirubin, albumin and INR were 1668 UI/L (77-5940); 1295 UI/L (55-530); 2.7 g/dl (1.9–4.6); 8.7(2.76-20), respectively. The median interval between the development of jaundice and hospitalization was 15 days (4-44) and the hospitalization time varied from 1-127 days (median 18). Evolution: 23 pt (56%) were submitted to liver transplantation (LT). The overall mortality was 44% (18/41): 39% with LT and 61% without LT. Spontaneous recovery was seen in 6 cases (HAV 2; indeterminate 3; hepatotoxicity 1); 1 pt with AIH treated with corticosteroid survived without LT. The multivariate analysis for end-point mortality/LT showed that the probability of survival is three times higher in pt transplanted compared to those not transplanted (p=0.0764). Conclusions: In this series of the pt with ALF, the etiology was indeterminate in the majority of the cases. LT was effective treatment of ALF.

### P0635

**Title:**
Characteristics of primary sclerosing cholangitis in children: experience of a single center in Brazil

**Ana B Kempff 1 , Vera LB Danesi 1 , Renata PS Pugliese 1 , Irene K Miura 1 , Adriana M Porta 1 , Gilda Porta 1**

1) Unit of Hepatology, Children’s Institute HC–University of São Paulo, São Paulo, Brazil

**Summary:**
OBJECTIVES: to characterize the features of this disease in brazilian children. METHODS: We retrospectively analyzed records of 40 patients (17F:23M), aged 15 m – 13,5 years (median 7,4 years) with PSC, diagnosed between 1983 to 2007. The diagnosis was confirmed in all patients by liver biopsy, endoscopic cholangiography and/or MRI. Inflammatory bowel disease (IBD) was investigated in 30 out of 40 patients by endoscopy with biopsies of the GI tract. Since this is a descriptive study, no statistical analyses was carried out. RESULTS: 40 pts had PSC, 16 with IBD and 5 without IBD. Eight patients had inespecific colitis or ileitis. Ten pts (25%) were asymptomatic , being 5 with IBD. At diagnosis, pruritus was present in 5 (12.5%), increased abdominal volume in 12 (30%), abdominal pain in 3 (7,5%), diarrhea in 18 (45%), jaundice in 17 (42.5%), and weight loss in 3 (7.5%), and hepatosplenomegaly in 12 (30%). Six pts (15%) had history of upper GI bleeding and 5 (12.5%) neonatal hepatitis. Three patients had associated autoimmune disease. Serum alkaline phosphatase activity was increased in 30 patients and gamma-glutamyltransferase activity in 37 patients. Gamma globulin was increased in 22 patients, prothrombin time was elevated (>70%) in 9 (22.5%). SMA was positive in 7 pt (17.9%) and AAN in 6 (18.7%). 35 pts were submitted to liver biopsy: 25 had histopathologic findings compatible with PSC, with portal fibrosis and neoductular proliferation. Cholangiography showed abnormal intrahepatic bile ducts in 25/33 (75%). MR cholangiopancreatography was done in 7 pts and was compatible to PSC in 5 children. Outcome: 3 pts died of hepatic failure, 9 children underwent liver transplantation. All patients transplanted are currently alive 1 to 7 years post-transplant. One had recurrence of PSC. Four patients are on the waiting list, 4 lost of follow up, and 20 are doing well receiving UDCA . The overall survival is 85%. Conclusion: PSC is a severe disease, and effective treatment is still undetermined. Liver transplantation is required for children with hepatic decompensation.

### P0636

**Title:**
CHRONIC INFECTION WITH HEPATITIS B IN CHILDREN: COMPARISON BETWEEN GENOTYPES A AND D

**Irene K Miura 1 , Irene K Miura 1 , Adriana P Compri 2 , Adriana P Compri 2 , Regina C Moreira 2 , Regina C Moreira 2 , Juliana R Vasconcelos 1 , Juliana R Vasconcelos 1 , Adriana M Porta 1 , Adriana M Porta 1 , Gilda Porta 1**

1) Unit of Hepatology Children’s Institute HC-University of São Paulo, São Paulo, Brazil 2) Laboratory of Viral Hepatitis, Adolfo Lutz Institute, São Paulo, Brazil

**Summary:**
Objective: to evaluate the clinical and laboratorial differences in children with chronic infection with HVB genotypes A and D in a Pediatric Hepatology Unit in Sao Paulo, Brazil. METHODS: We retrospectively analyzed records of 40 patients (17F:23M), aged 15 m – 13,5 years (median 7,4 years) with PSC, diagnosed between 1983 to 2007. The diagnosis was confirmed in all patients by liver biopsy, endoscopic cholangiography and/or MRI. Inflammatory bowel disease (IBD) was investigated in 30 out of 40 patients by endoscopy with biopsies of the GI tract. Since this is a descriptive study, no statistical analyses was carried out. RESULTS: 40 pts had PSC, 16 with IBD and 5 without IBD. Eight patients had inespecific colitis or ileitis. Ten pts (25%) were asymptomatic , being 5 with IBD. At diagnosis, pruritus was present in 5 (12.5%), increased abdominal volume in 12 (30%), abdominal pain in 3 (7,5%), diarrhea in 18 (45%), jaundice in 17 (42.5%), and weight loss in 3 (7.5%), and hepatosplenomegaly in 12 (30%). Six pts (15%) had history of upper GI bleeding and 5 (12.5%) neonatal hepatitis. Three patients had associated autoimmune disease. Serum alkaline phosphatase activity was increased in 30 patients and gamma-glutamyltransferase activity in 37 patients. Gamma globulin was increased in 22 patients, prothrombin time was elevated (>70%) in 9 (22.5%). SMA was positive in 7 pt (17.9%) and AAN in 6 (18.7%). 35 pts were submitted to liver biopsy: 25 had histopathologic findings compatible with PSC, with portal fibrosis and neoductular proliferation. Cholangiography showed abnormal intrahepatic bile ducts in 25/33 (75%). MR cholangiopancreatography was done in 7 pts and was compatible to PSC in 5 children. Outcome: 3 pts died of hepatic failure, 9 children underwent liver transplantation. All patients transplanted are currently alive 1 to 7 years post-transplant. One had recurrence of PSC. Four patients are on the waiting list, 4 lost of follow up, and 20 are doing well receiving UDCA . The overall survival is 85%. Conclusion: PSC is a severe disease, and effective treatment is still undetermined. Liver transplantation is required for children with hepatic decompensation.

### P0637

**Title:**
Influence of genes major histocompatibility (MHC) genes on clinical expression and outcome of autoimmune hepatitis type 1 in childhood

Gilda Porta 1, Paulo L Bittencourt 2, Irene K Miura 1, Renata PS Pugliese 1, Lea Oliveira 3, Anna C Goldberg 4
1) Unit of Hepatology, Children’s Institute HC- University of São Paulo, São Paulo, Brazil 2) Unit of Hepatology, Hospital Português, Salvador, Brazil 3) Laboratory of Medical Investigation (LIM-36), Children’s Institute HC- University of São Paulo, São Paulo, Brazil 4) Chemistry Institute, University of São Paulo, São Paulo, Brazil

Summary:
Background: Autoimmune hepatitis is an immune-mediated liver disease that leads, when untreated, to cirrhosis and liver failure. Genetic background has been shown to affect clinical expression and disease progression in adults with AIH-1. In this respect, HLA-DRB1*03 has been associated with earlier age at disease onset as well as higher relapse rates and treatment failure. Aims: To investigate whether genotype could influence the disease phenotype in children with AIH type 1 (AIH-1) from Brazil, where predisposition to AIH-1 is primarily linked to HLA-DRB1*13. Patients and Methods: Ninety-eight children and adolescents (77 females, age 9.6 [1 -15.5] years) with clear-cut criteria for AIH-1 were studied by PCR-based methods to determine the frequencies of several polymorphisms in MHC genes including HLA-DRB, DQB1, TNFA (G-308A and G-238A), HLA-B and MICA alleles. Results were compared to clinical findings at presentation and response to treatment according to international criteria. Results: No differences in age at presentation, frequency of relapses, response to treatment, concurrent autoimmune disorders or liver related deaths were disclosed in AIH-1 patients according to the presence of particular MHC genotypes, including HLA-DRB1 alleles. Conclusions: These findings support the hypothesis that HLA-DRB1*13 and HLA-DRB1*03, the well-known ancestral 8.1 haplotype, is not associated with a more aggressive behavior in pediatric patients with AIH-1 in Brazil. Suported by FAPESP

P0638

Title:
Spontaneous bacterial peritonitis (SBP) in children in the waiting list for liver transplantation

Renata PS Pugliese 1, Vincenzo Pugliese 1, Vera LB Danesi 1, Teresa Guimarães 1, Adriana M Porta 1, Gilda Porta 1
1) Liver Transplantation Department – A.C. Camargo Hospital, São Paulo, Brazil

Summary:
Objective – To describe the clinical features, etiologic agents and the impact of SBP in children in the waiting list for liver transplantation. Methods – From Feb 2002 to Feb 2008, 18 episodes of SBP were diagnosed in 17 children with chronic liver disease in the waiting list for liver transplantation. Median age was 11 months. 65% were females. Median weight was 9042 g. Median z-score weight/age was -0.86 and median z-score height/age was -1.46. The etiology of the liver disease was biliary atresia (9), cryptogenic cirrhosis (3), tyrosinemia (1), nonsyndromic duct paucity (1), Budd-Chiari syndrome (1), α-1-antitrypsin deficiency (1), autoimmune hepatitis (1). Median PELD was 24 (range -7 to 38). The diagnosis of peritonitis was based on the following criteria: a) ascitic fluid polymorphonuclear count greater than 250 cells/mm³ and b) absence of secondary peritonitis. The episodes of SBP were primarily treated with ceftriaxone. Results – The most prevalent clinical features were worsening ascites (89%), fever (83%), respiratory distress (22%), abdominal pain (17%), encephalopathy (11%), diarrhea (11%) and vomiting (11%). Ascitic fluid culture was positive in 7 episodes of SBP (39%). Blood culture was positive in 5 (28%). Gram negative bacteria were identified in 6 cases (E. coli 3, Klebsiella pneumonia 1, Pseudomonas aeruginosa 1, Branhamella catarrhalis 1) and Gram positive bacteria were identified in 5 cases (Streptococcus 3, Staphylococcus 1, Enterococcus 1). 2 patients died of infection despite antibiotic therapy (12%), 3 patients died further of complications of liver disease (sepsis 1, gastrointestinal bleeding 1, pulmonary bleeding 1), 11 patients were transplanted (65%) and 1 is still in the waiting list. The patients who died had significantly higher levels of serum bilirubin, lower serum sodium and higher levels of blood urea. Conclusion – SBP is a life-threatening complication in children waiting for liver transplantation, with a mortality of 12% in this series. Gram negative bacteria were the most prevalent agents. Serum bilirubin, sodium and urea were predictive factors of mortality related to a severe liver disfunction.

P0639

Title:
Study of hepatitis B virus infection in children, adolescents and their relatives: genotype distribution and precore and core gene mutations

Adriana P Compri 1, Irene Miura 2, Gilda Porta 2, Marcilio F Lemos 1, Cláudia P Saraceni 1, Regina C Moreira 1
1) Laboratory of Viral Hepatitis, Adolfo Lutz Institute, São Paulo, Brazil 2) Unit of Hepatology, Children’s Institute, São Paulo, Brazil

Summary:
Background: Non-alcoholic steatohepatitis (NASH) is a liver disease that occurs more frequently in children and adolescents than in adults. The etiology of NASH is multifactorial and includes genetic and environmental factors. The objective of this study was to evaluate the clinical and histological features in 36 children with NASH.

Methods: Thirty-six children with NASH diagnosed by clinical, biochemical, and histological features, attending between Mar 2001 and Dec 2007 in Hepatology and Nutrition Units of a single institution were evaluated. Other causes of hepatic steatosis were ruled out, including drugs; Wilson's disease; α1-antitripsin deficiency; lipid storage disease; insulin resistance (IR) was assessed by homeostasis model (HOMA). Body mass index (BMI) was used to assess obesity and overweight. Liver ultrasound and needle liver biopsy were performed in all patients. A single experienced pathologist reviewed all liver biopsy specimens.

Results: Thirty-six children, 24 males. Abnormal lipid profile was found in 77%. IR was demonstrated in 12 subjects. The frequency of precore and core mutations was low. Financial Support: FAPESP 06/59974-8

P0641

Title: Non-alcoholic steatohepatitis in children

Cristina Galoppo 1, Lilliana Trifone 1, Elena De Matteo 1, Alejandra Pedreira 1, Marcela Galoppo 1, Gisela Giacone 1
1) Ricardo Gutierrez University Children Hospital, Buenos Aires, Argentina

Summary:
Objectives: Communicate clinical and histological features in 36 children with NASH. Methods: 36 children with NASH diagnosed by clinical, biochemical and histological features, attending between Mar 2001 and Dec 2007 in Hepatology and Nutrition Units of a single institution were evaluated. Other causes of hepatic steatosis were ruled out, including drugs; Wilson's disease; f1-antitripsin deficiency; lipid storage disease; celiac disease; HCV; HBV; autoimmune hepatitis and alcohol intake. Lab tests included: liver function tests, lipid profile, blood cell count, coagulation profile, basal insulin, hepaticins A, B, C, ceruloplasmin, Ig levels, C3, C4, autoantibodies (ANA, ASMA, AMA, anti-LKM) and antitransglutaminase. Insulin resistance (IR) was assessed by homeostasis model (HOMA). Body mass index (BMI) was used to assess obesity and overweight. Liver ultrasound and needle liver biopsy were performed in all patients. A single experienced pathologist reviewed all liver biopsy specimens. NASH CRN Scoring System 2005 was used for histological evaluation. A statistical analysis was performed with Statistix, version 3.1. Results: 36 children, 24 males. Median age at diagnosis was 11y,3m; r (18y7m-1y1m). Twenty five patients were obese, 9 overweighted, and 2 normal weighted. Transaminases were increased at onset or follow-up in 80%, with GPT predominance. Abnormal lipid profile was found in 77%. IR was demonstrated in 12 subjects.
Abdominal ultrasound showed diffuse echogenic liver in 94% of patients, suggesting steatosis. Histological changes, including macrovesicular steatosis, hepatocellular ballooning, lobular inflammation with piecemeal necrosis and portal fibrosis, were present in all patients. Severe portal fibrosis was present in 66% of specimens. Bile duct epithelium lesion was found in 86% of subjects. One child had cirrhosis. Sixteen liver biopsies were evaluated for iron deposition (Perls stain) and apoptosis by immunohistochemistry for cleaved cytokeratin 18. Low-grade iron deposits were found in 2 samples (12.5%), and there was evidence of apoptosis in all 16 biopsies. No statistical association was found between aminotransferases levels, BMI, HOMA and histological features. Conclusion: Although validation of these findings requires larger number of patients, our results strongly support that NASH is not a benign condition in children. Liver biopsy is necessary to establish diagnosis and to assess outcome.

P0643

Title:
Chemical biliary duct embolization: a case of successful treatment of biliary stenosis in pediatric liver transplantation.

Gislaine Strapasson Blum 1, Cesar Tiberio 1, Israil Cat 1, Alexander Corvello 1, Julio Cesar U Coelho 1, Adriane Celli 1
1) Departments of Pediatrics and Surgery, Division of Liver Transplantation, Hospital de Clínicas, Universidade Federal do Paraná, Curitiba, Brazil

Summary:
BACKGROUND: Biliary complications are one of the important questions to be addressed after liver transplantation. They are more prevalent among pediatric patients, with reported rates varying between 15% and 40%, and cause considerable morbidity and mortality in liver transplant patients. The management of biliary complications requires a multidisciplinary approach and has changed over the past decade, favoring endoscopic and radiological techniques. Surgical revision is reserved for patients in whom endoscopic and interventional modalities are unsuccessful, but is a challenging procedure. AIM: To describe a case of successful treatment of biliary stenosis and recurrent cholangitis after pediatric liver transplantation with chemical biliary duct embolization. PATIENT AND METHODS: A 3-year-old patient with extrahepatic biliary atresia was subjected to living-related liver transplantation (left lateral segment). After transplantation she had recurrent cholangitis. MRCP demonstrated focal dilatation of the biliary tree with stenosis of one small intrahepatic biliary duct. She was subjected to transhepatic percutaneous dilatation, without success. Because of technical difficulties in surgery revision, the patient was subjected to chemical biliary duct embolization with cyanoacrylate. RESULTS: Biliary duct embolization with cyanoacrylate resulted in complete occlusion of the diseased biliary duct lumen, effectively eradicating recurrent cholangitis. The patient has been followed for 4 years without recurrent episodes of cholangitis and with normal liver tests. CONCLUSION: Chemical biliary duct embolization may prevent surgery in selected patients with biliary complications who do not respond to endoscopic and radiological intervention.

P0644
Title: Portal Vein Thrombosis in children and adolescents: diagnosis and clinical complications

Stephania M A Socio 1, Graziela C M Schettino 1, Eleonora D T Fagundes 1, Alexandre R Ferreira 2, Mariza L V Roquete 2, Francisco J Penna 3
1) Médica - Aluna Pós Graduação da Faculdade de Medicina UFMG, Belo Horizonte, Brasil 2) Professor Adjunto da Faculdade de Medicina da UFMG, Belo Horizonte, Brasil 3) Professor Titular da Faculdade de Medicina da UFMG, Belo Horizonte, Brasil

Summary:
Objective: to describe a patient group with portal vein thrombosis (PVT) from the Ambulatório de Hepatologia Pediátrica do Hospital das Clínicas da UFMG, with emphasis on the diagnosis, on the clinical complications and on the portal hypertension approach. Methods: this is a descriptive study of patients receiving care in the Ambulatory from January 1990 to January 2007. A revision was undertaken on the patients’ dossier for gathering data. The PVT diagnosis was confirmed through ultrasonography. The data were evaluated through the simple frequency calculation. Results: From 36 analyzed patients, 19 (52,8%) were from the masculine sex. No risk factor for PVT was identified in 21 patients (58,3%). The predominant presentation form was the splenomegaly palpation during clinic routine examination (61,1%). In 14 patients (38,9%), the initial manifestation was digestive bleeding. During all the follow-up period, 24 patients (66,7%) presented at least one digestive bleeding episode. The patients average age in this first episode was 4,9 ± 3,8 years. The first endoscope examination showed esophageal varices in 100% of the patients. Laboratory examinations, usually, show normal aminotransferases, albumin dosage and coagulogram. Conclusions: The portal vein thrombosis is one of the most significant reasons for digestive bleeding in children. PVT must be suspected in every child with splenomegaly with absence of fever and/or hemathemese, with no hepatomegaly and with normal hepatic functions tests. Therefore, a diagnostic and therapeutic approach is desirable on the trial to reduce morbidity.

Title: Long-term outcome in children with progressive familial intrahepatic cholestasis type 2 (PFIC2); the fibrosis can be reversed by partial external biliary diversion (PEBD)

Henrik Arnell 1, Nikos Papadogiannakis 2, Helene Zemack 1, Antal Nemeth 1, Björn Fischler 1
1) Div of Pediatrics, CLINTEC, Karolinska Institute, Huddinge/Stockholm, Sweden 2) Div of Pathology, Dept of Laboratory Medicine, Karolinska Institute, Huddinge/Stockholm, Sweden

Summary:
Objectives To examine whether a) PEBD may reduce the histological cholestasis and fibrosis in patients with PFIC2 b) cholestatic episodes influence the development of fibrosis c) there is a genotype-phenotype correlation regarding effects of treatment and long-term outcome Methods 18 patients with PFIC were clinically, biochemically and histologically followed on a prospective basis. 13 of the patients underwent partial external biliary diversion (PEBD). All had early (before 6 months of age) onset of chronic unremitting cholestasis and normal serum levels of α-glutamyl transferase. Serial liver biopsies from the operated patients at 1 year prior to PEBD, at surgery, and at 1, 3, 5 and >10 years post-PEBD were evaluated in an investigator blinded fashion with regard to cholestasis and fibrosis. The duration of cholestasis after PEBD was calculated for the operated patients. Genetic sequencing of the disease-causing gene for PFIC2, i.e. ABCB11, was performed on all 13 patients. In patients negative for mutations in this gene, sequencing of ATP8B1 (disease-causing gene for familial intrahepatic cholestasis type 1) was added. Results When compared to the status at PEBD, there was a significant reduction in cholestasis at 1 year (n=12 patients, p<0.05) and at 3 years (n=10, p<0.05) after PEBD, and a reduction in fibrosis at 5 years (n=11, p<0.01) and at >10 years
Rational: Liver adenomatosis (LA) is an infrequent disease characterised by the presence of multiple adenomas surrounded by normal hepatic parenchyma. Hepatocyte nuclear factor 1 alpha gene (HNF1a) regulates a wide number of genes implied in cellular differentiation of liver and pancreatic cells, among other tissues. Monoallelic inactivation of HNF1a is associated to MODY3 diabetes (dominant autosomic inheritance). For the appearance of LA, biallelic inactivation of the gene is required (germline-somatic or somatic-somatic mutations). Risk of malignant transformation of LA due to HNF1a inactivation is very low; main complications include abdominal pain and spontaneous adenoma rupture that could put patient's life at risk. Methods: A 13 years old healthy adolescent with a 10 years history of recurrent abdominal pain was found to have multiple hyperechoic space-occupying lesions in liver US. Results: Full blood count, biochemistry, clotting and alpha-fetoprotein were normal. AST, ALT and alkaline phosphatase were very mildly raised. Abdominal CT showed countless nodules 1 to 7 cm. of diameter occupying most of hepatic volume that practically occluded the light of inferior cava vein. Histology of percutaneous biopsies showed greasy infiltration in the nodules, without cellular atypia and absence of normal portal areas; surrounding hepatic parenchyma was normal. Ten encoding exons and the promoter of HNF1a were amplified by PCR and both strands were sequenced by direct sequencing in DNA extracted from peripheral blood and hepatic tissue. A monoallelic mutation (AAT289G) of the ABCB11 gene. In these, the latest liver biopsy showed no or mild fibrosis (n=6) or moderate fibrosis (n=2), and one boy died due to hepatocellular carcinoma one year post-PEBD. Two of the remaining four operated patients were compound heterozygotes; one patient underwent liver transplantation due to end stage liver failure 2 months post-PEBD, and one patient had moderate fibrosis. The two remaining patients had neither mutations in the coding sequence of ABCB11, nor in ATP8B1, and had no (n=1) and severe (n=1) fibrosis, respectively (Image). Conclusion PEBD should be considered in patients with PFIC2, as it may reverse the hepatic fibrosis. The cholestatic relapses post-PEBD should be kept as short as possible. Genotyping may possibly be important when deciding upon surgical approach.
Title: PREVALENCE OF CELIAC DISEASE IN PATIENTS WITH AUTOIMMUNE LIVER DISEASE

Kohn Isidoro Joaquin 1, Aguero Nora 1, Petri Veronica 1, Riga Caroline 1, Nuñez Maria H. 1, Filli Teresita 1
1) Hospital de Niños, CORDOBA, ARGENTINA

Summary:
Kohn IJ¹ ², Aguero N¹, Petri V¹, Riga C¹, Nuñez MH¹, Filli T¹. 1-Servicio de Gastroenterología, Hospital de Niños; 2- Servicio de Gastroenterología Pediátrica Hospital Privado. Córdoba, ARGENTINA. Background: The association between celiac disease (CD) and autoimmune liver disease (AILD) has occasionally been described in children. Recognition of CD in AILD has increased with the use of antibodies (Ab) for the diagnosis of CD: Antigliadin IgG and IgA (AGA), anti-antiendomysium IgA (EmA), and anti-transgluta-minase Ab (tGT). Objective: To assess the prevalence of CD in our patients (Pts) with AILD. Patients and Methods: We evaluated 100 Pts (67 females) with diagnosis (Dg) of AILD followed in 2 units of Pediatric Hepatology in Córdoba, Argentina. The average age at Dg was 9y, average follow-up of 6y5m. 77 Pts had autoimmune hepatitis type I (AIH-I) [6 of them with Al cholangitis (Al-C)], 5 AIH-II (1 w/AI-C), 1 Al-polycendocrine syndrome type I (APS1), and 17 sclerosing cholangitis (SC) [7 with ulcerative colitis (UC), and 2 with common variable immunodeficiency (CVID)]. Sera from these patients were tested for AGA IgG and IgA by ELISA assay, EMA- IgA by TIIF, and tGT by ELISA. All patients who had positive Ab underwent a small bowel biopsy by endoscopic procedure. CD was defined (dCD) when Pts had (+) Ab and the biopsy specimen showed grade II-IV villous atrophy (moderate or severe). Diagnosis of probable CD (pCD) was made when Pts had only positive celiac Ab without biopsy (or with only grade I villous atrophy), with or without gastrointestinal (GI) manifestations of CD. Results: 18% had dCD, and other 6% had pCD. 13 Pts with Dg of dCD had HAI-I (13/77 = 17%), 2 HAI-II (2/5=40%) and 3 SC (3/17=17,6%) (1 with UC and 1 with CVID). In Pts with pCD, 4 had HAI-I, 1 HAI-II and 1 SC (and UC). In only 2 of the 18 Pts with Dg of dCD the Dg of CD was previous to the one of AILD. 4 PC with Dg of cd had GI symptoms. Conclusions: The prevalence of CD in our Pts with AILD (Dg of dCD and pCD) was 24%, in general without GI manifestations. The prevalence of CD was significantly greater in Pts c/AIH-II (although the number of Pts is small) in relation to AIH-I and SC. We suggested the investigation of CD in all Pts with AILD, and to make an intestinal biopsy in those with serology (+) or with GI events that suggest CD. The possible influence of gluten free diet in Pts with Dg of AILD and CD should be explore before the beginning of the immunosuppressive treatment.

Title: Response to pegylated interferon/ribavirin in chronic hepatitis C depends on pre-treatment numbers of natural killer (NK) cells

Ivana Carey 1, Dita Cebecauerova 1, Sanjay Bansal 1, Pushpa Subramaniam 1, Giorgina Mieli-Vergani 1, Diego Vergani 1
1) Kings College London School of Medicine at Kings College Hospital, London, United Kingdom

Summary:
Background: Chronic hepatitis C virus (HCV) infection in children is a slowly progressing mild disease with potentially severe acceleration in adulthood. Successful antiviral therapy with pegylated interferon (PegIFN) and ribavirin prevents disease progression and is associated with a distinct HCV-specific immune reactivity pattern, characterized by a strong and broad T helper1 (Th1) response and by low production of IL-10 and IFN-gamma inducible protein 10 (IP-10) at therapy baseline (Hepatology 2007, S1, 297A). The interplay between innate and adaptive immune responses is crucial for the efficient control of viral replication. Limited information is available on the innate immune response in children with HCV infection. Aim: To investigate whether pre-treatment number of innate immune system natural killer cells, predicts response to therapy with PegIFN/ribavirin in children with chronic HCV infection and compare it with HCV-specific Th1/Th2 adaptive immune responses. Patients: 18 children (9 males, median age 12 years) with perinatally acquired HCV infection treated with PegIFN/ribavirin were divided into two groups according to therapy response: 14 responders (R) and 4 non-responders (NR). Methods: The number of NK cells (CD3-CD16+CD56+) at baseline was determined by flowcytometry on peripheral blood mononuclear cells (PBMC). HCV-specific IFN-gamma and IL-10 T cell production was evaluated by Elispot after PBMC exposure to HCV antigens. Plasma levels of IP-10 were measured by ELISA. Results: Pre-treatment NK cell number was lower in R than NR (2.5 +/-1.4 vs.8.6 +/-2.2 %, p=0.001); HCV-specific IFN-gamma production was similar in R and NR, while that of IL-10 was lower in R than NR (16.1+/-7.3 vs. 56.3+/-25.6 specific spot forming cells per 1 million of PBMC, p=0.021); plasma levels of IP-10 were lower in R than NR (15.4+/-3.7 vs. 72.3+/-14.6 pg/ml, p=0.006). There was a positive correlation between NK cell number, IP-10 levels (r=0.613, p=0.007) and HCV core-specific IL-10 production (r=0.511, p=0.03). Conclusions: Response to anti-viral therapy in children with chronic HCV infection is predicted by pre-treatment low numbers of natural killer cells, suggesting a key role of the innate immune response in host-HCV interaction.
FIC1 deficiency results in hearing loss and degeneration of the cochlear hair cells.

J.M. Stapelbroek 1, T.A. Peters 2, L.W.J. Klomp 1, R.H.J. Houwen 1
1) University Medical Centre Utrecht, Utrecht, The Netherlands 2) Radboud University Nijmegen Medical Centre, Nijmegen, The Netherlands

Summary:
FIC1 deficiency is caused by autosomal recessive mutations in ATP8B1, which encodes the FIC1 protein, a putative aminophospholipid translocase. It is primarily characterized by cholestasis, either progressive (progressive familial intrahepatic cholestasis type 1, PFIC1) or intermittent (benign recurrent intrahepatic cholestasis type 1, BRIC1). In addition patients can have extrarenal symptoms such as pancreatitis and chronic diarrhoea. As patients may also complain about a reduced hearing capability we set out to investigate the role of FIC1 in auditory function. In both BRIC1 patients (n=10; mean age 37 years) and Atp8b1(G308V/G308V) mutant mice (n=5-12; age 1, 3 and 6 months) we tested auditory function, using standard pure tone audiometry and auditory brainstem responses, respectively. As controls, 10 cholestatic patients including 3 BRIC2 patients with BSEP deficiency (mean age 36 years) and 7 PSC patients (mean age 47 years), as well as 5-7 age-matched wild type mice were tested. Immunohistochemistry was performed on cochlear sections and whole mount cochleas of wild type mice to determine the localization of Fic1 in the inner ear. Light microscopy on cochlear sections of Atp8b1(G308V/G308V) mutant mice was used to investigate the effect of Fic1 deficiency on cochlear structure. BRIC1 patients showed a significant hearing loss of more than 30 dB compared to the control patients, who showed less or no hearing loss. The Atp8b1(G308V/G308V) mutant mice in all age groups showed a severe and significant hearing loss exceeding 50 dB at 8 and 16 kHz and a combination of different frequencies (p < 0.01). At 32 kHz the difference was less marked at 3 and 6 months (p < 0.05 and NS, respectively). In the cochleas of wild type mice, Fic1 was specifically located in the stereocilia of the mechanosensory hair cells. In addition in Atp8b1(G308V/G308V) mutant mice Fic1 deficiency resulted in marked degeneration of these hair cells. In conclusion we showed that FIC1 deficiency causes hearing loss which may be secondary to degeneration of the hair cells, consistent with specific localisation of Fic1 in the stereocilia of these cells. These data open the interesting possibility that the bile salt excretory function of hepatocytes and the mechanosensory function of the hair cells share some common molecular mechanisms and are both critically dependent on the aminophospholipid translocase activity of FIC1.

HEAT SHOCK PROTEIN 70-kDA (Hsp70) IN TWO COMPLEMENTARY MODELS OF HEPATIC COPPER TOXICOSIS

Jason YK Yap 1, Suyun Yang 1, Eve A Roberts 1
1) The Hospital for Sick Children, Toronto, Canada

Summary:
In Wilson disease (WD), a genetic disorder of hepatic handling of copper (Cu), hepatocellular damage involves oxidant stress, mitochondrial dysfunction and apoptosis. Heat shock proteins, notably the Hsp70 family, participate in cytoprotection during cellular stress and may modulate oxidant stress. We have previously identified Hsp70 as a member of the Cu-metalloproteome (J Proteome Res 2004;3:834). Aim: to examine the expression of Hsp70 in two complementary models of hepatic copper toxicosis: acute copper toxicity in HepG2 cells and chronic copper toxicity in a murine model of Wilson disease. Methods: HepG2 cells were cultured in increasing concentrations of CuCl2 (0-50-100-150 uM) for 24 and 48 hours; incubation with ZnCl2, a divalent cation not involved in Fenton mechanics, over the same concentration range were used as control. Hsp70 protein and mRNA expression were examined by immunoblotting and semi-quantitative RT-PCR, respectively. The same analyses were performed on liver tissue homogenates from the Jackson toxic milk mice (tx-j), a murine model of WD (G712D missense mutation in Atp7b) and C3H control mice at monthly intervals over the first 6 mo of life. Results: The Hsp70 protein concentration in HepG2 cells incubated in Cu for 24 and 48 hours demonstrated a dose-dependent rise with increasing concentrations of Cu. HepG2 cells incubated in Zn up to 48 hours showed no increase in Hsp70 protein expression. No up-regulation of Hsp70 mRNA expression was detected in HepG2 cells despite the increased protein expression. In txj mice, there was a non-specific Hsp70 pattern of protein and mRNA expression. In contrast, the control mice demonstrated a gradual increase in Hsp70 protein expression, in parallel with developmental age. In murine liver samples Hsp70 mRNA expression was similar to protein expression. Conclusion: Hsp70 may participate in the hepatocellular response to oxidant stress associated with copper overload. This is more evident in acute copper toxicity in HepG2 cells than in the Wilson disease model where other compensatory mechanisms may operate. In addition to Cu chelation, treatment strategies to enhance cytoprotection against oxidant stress may be beneficial.

Progression of portal fibrosis despite reversal of cholestasis during Omegaven therapy in a patient with intestinal failure.

Jason S. Soden, MD 1, Mark A. Lovell, MD 1, Kristin Brown, RD 1, George Mazariegos, MD 2, Ronald J. Sokol, MD 1

Title:
Progression of portal fibrosis despite reversal of cholestasis during Omegaven therapy in a patient with intestinal failure.

Jason S. Soden, MD 1, Mark A. Lovell, MD 1, Kristin Brown, RD 1, George Mazariegos, MD 2, Ronald J. Sokol, MD 1
Introduction At present, no established therapy is proven to be effective for the prevention and treatment of intestinal failure associated liver disease (IFALD) with the exception of parenteral nutrition (PN) discontinuation. Patients with microvillous inclusion disease (MVID) have irreversible intestinal failure (IF), and have minimal chance for PN discontinuation. Recently, Omegaven, an intravenous fat emulsion comprised of omega-3 fatty acids, has been evaluated for its potential role in reversing IFALD. We report our experience in an infant with MVID who received Omegaven and had progressive liver fibrosis despite improvement in biochemical cholestasis. Methods The patient is a former 31 week gestational age female with MVID confirmed by electron microscopy. PN was started within the first month of life (14-16% dextrose, 1.5-2 gm/kg/day protein, and 1-2gm/kg/day Intralipid (IL), a soy-based omega-6 containing preparation), and she received essentially no enteral nutrition. By the age of 5 months, she had progressive cholestasis (total bilirubin (TB) 6 mg/dL; direct 5.2) and was listed for intestinal and liver transplantation. A percutaneous liver biopsy performed at that time revealed intrahepatic and canalicular cholestasis with mild-moderate portal fibrosis without significant bridging. By 9 months of age, she had worsening cholestasis (TB 13.3 mg/dL; direct 11), a normal prothrombin time, and normal platelet count. Parenteral IL was discontinued, and Omegaven was started under compassionate use at 1 gm/kg/day in addition to the other PN constituents. Over the next 4 months, there was a marked improvement in serum bilirubin (TB 3mg/dL; direct 1.9) despite no enteral feedings, with no interim sepsis. Results: Liver histology in the second biopsy showed marked progression of fibrosis to advanced bridging fibrosis, despite some improvement in intrahepatic cholestasis. The patient remains on a wait list for a combined liver-small bowel transplant. Conclusion: Despite marked improvement in serum bilirubin, this patient with MVID and secondary IF had progression in portal fibrosis on PN and Omegaven. This case emphasizes the complex pathogenesis of liver injury and fibrosis in IFALD, and raises questions regarding the therapeutic mechanisms of this novel therapy.

P0653

Title:
A case of autoimmune hepatitis-primary sclerosing cholangitis overlap syndrome in a 10-year-old girl with ulcerative colitis

Jeana Hong 1, Jae Sung Ko 1, Gyeong Hoon Kang 1, Woo Sun Kim 1, Jeong Kee Seo 1
1) Departments of Pediatrics, Pathology and Radiology, Seoul National University College of Medicine, Seoul, Korea

Summary:
Introduction: Autoimmune hepatitis(AIH), primary sclerosing cholangitis(PSC) and primary biliary cirrhosis(PBC) are immune-mediated chronic liver diseases. Overlap syndrome is defined as conditions in which clinical, biochemical and histological features of these autoimmune liver diseases are overlapped. Therefore it is difficult to be diagnosed as a definite disease. Only a few cases have been reported on the overlap syndrome of AIH and PSC especially in children. Moreover, PSC is well known to be the most frequent liver disorder associated with inflammatory bowel disease such as ulcerative colitis. Case: We report one case of AIH-PSC overlap syndrome in a 10-year-old girl with ulcerative colitis. She was referred with a 1-year history of diarrhea, abdominal pain and weight loss. She showed a marked increase in aminotransferase levels (AST 229 IU/L, AST 492 IU/L) and ALP (614 IU/L) and GGT (393 IU/L) activity. Hypergammaglobulinemia was detected with increased IgG (2842 mg/dL) with normal IgM (270 mg/dL). Antinuclear antibodies and smooth muscle antibodies were positive with 1:160 and 1:80 respectively. Anti-neutrophil cytoplasmic antibodies were also detected with a titer of 1:160. Magnetic resonance cholangiopancreatography revealed mild dilatation of common bile duct and irregular dilatation of intrahepatic duct. Liver biopsy showed periportal edema with onion skin fibrosis around the interlobular bile duct and interface hepatitis. Colonoscopic biopsy showed an active ulcerative colitis. Diagnostic criteria of AIH was fulfilled with a score of 14 according to the revised scoring system. Therefore the diagnosis of AIH-PSC overlap syndrome accompanied by ulcerative colitis was made. Biochemical and clinical responses were obtained after administration of corticosteroid, azathioprine, UDCA and mesalazine. Conclusion: If autoimmune liver disease is suspected, we need to diagnose and differentiate the infrequent overlap syndrome based upon immunoserological and clinopathological profiles to enable timely and effective treatment.

P0654

Title:
The copper content of hair, 24 hour urinary copper and free serum copper in monitoring of Wilson disease

Jee Youn Shin 1, Jeong Kee Seo 1
1) Department of Pediatrics, Seoul National University, College of Medicine, Seoul, South Korea

Summary:
Objective: Determination of free serum copper concentration and 24 hour urinary copper excretion is usually recommended for the monitoring of Wilson disease (WD). However, interpreting 24 hour urinary copper can be difficult during chelation therapy since it can be affected by the disease progression and therapeutic effect of chelating agents. Free serum copper, which is calculated by subtracting the ceruloplasmin bound copper from the total serum copper, also has limits due to the daily variations associated with many factors including diet in total serum copper. As a result, a new monitoring marker is needed for WD. Methods: Sixty-seven WD patients under treatment were included. Total serum copper, serum ceruloplasmin, 24 hour urinary copper and hair copper were measured. The patients were divided into groups 1 and 2 according to the clinical and biochemical status. Group 1 patients: No clinical symptoms after treatment and normal biochemical tests for more than six months. Group 2 patients: Still abnormal biochemical tests despite treatment because of poor compliance or neurologic deterioration despite treatment. Results: Twenty-four hour urinary copper (P=0.20) and free serum copper (P=0.39) were not significantly different between the group 1 and group 2. In contrast, the hair copper content was significantly different between two groups (18.4±14.1 ug/g vs 26.8±15.3 ug/g, P=0.001). In patients receiving penicillamine, 24 hour urinary copper (P=0.664) and free serum copper (P=0.383) showed no difference between two groups. In contrast, the hair copper content was significantly different between two groups (18.4±14.1 ug/g vs 28.7±21.1 ug/g, P=0.014). Conclusion: The copper content of hair can be a valuable test for the monitoring of copper accumulation in Wilson disease as it reflects long-term accumulation in the body more accurately than the free serum copper and 24 hour urinary copper.

P0656

Title: Nonalcoholic Fatty Liver Disease progressing to Cirrhosis in an obese boy with Hypopituitarism

Park JY 1, Ko JS 1, Seo JK 1, Shin CH 1, Kang GH 1, Kim WS 1
1) Department of Pediatrics, Pathology and Radiology, Seoul National University, College of Medicine, Seoul, Korea

Summary:
Introduction: Non-alcoholic fatty liver disease (NAFLD) is typically associated with obesity and insulin resistance. Nonalcoholic steatohepatitis (NASH) is a more serious form of NAFLD. Although fibrosis is common in pediatric NASH, cirrhosis has been rarely reported. Patients with hypothyroidic or pituitary dysfunction are at risk of obesity and insulin resistance with subsequent development of NAFLD. We report a case of NAFLD progressing to cirrhosis in an obese adolescent with hypopituitarism. Case: A 16 year-old boy was admitted to this hospital because of pathologic obesity and fatty liver. He had been obese since he was 3 years old. At the age of seven, fatty liver, hyperlipidemia, and acanthosis nigricans were found. He was diagnosed with type II diabetes mellitus, short stature, and hypopituitarism at 11 years of age. Ureteral stone, pulmonary hypertension, obesity hypoventilation syndrome, microalbuminuria were noted at 15 years of age. Insulin has been administered since he was 11 years old because of poor glucose control with metformin. His height was 139.7 cm (<3rd percentile), weight 59.6 kg (25-50th percentile), and BMI 30.5 kg/m² (>97th percentile). The second heart sound was accentuated. There was clubbing of fingers. Tests and pubic hair development indicated Tanner stage 1. Laboratory evaluations revealed ALT 73/38 IU/L, total bilirubin 0.7 mg/dL, GGT 775 IU/L, glucose 188 mg/dL, insulin 29.9 YU/mL, total cholesterol 213 mg/dL, HDL 28 mg/dL, and triglyceride 232 mg/dL. Hepatitis B and C serologies, ANA, and ceruloplasmin were all within normal limits. Ultrasound examination of the liver showed a diffuse increase in echogenicity with mild hepatomegaly. A liver biopsy demonstrated mild steatosis, moderate perportal inflammatory cell infiltrate with fibrosis, and micronodular cirrhotic changes. Conclusion: Children with NAFLD and hypopituitarism are at risk for rapid development of liver cirrhosis.

P0657

Title: The extent of bile duct proliferation evaluated by morphometric analysis is associated with the prognosis in biliary atresia

Jorge Luiz dos Santos 1, Carlos Oscar Kieling 1, Luise Meurer 1, Andrea Lorentz 1, Ana Raniele Linhares 1, Themis Reverbel da Silveira 1
1) Hospital de Clínicas de Porto Alegre, Porto Alegre, Brasil

Summary:
Objective- This study aimed at quantifying by morphometric analysis the extent of bile duct proliferation (BDP) in wedge liver biopsies of biliary atresia (BA) patients, relating this variable with the post-portoenterostomy prognosis. Methods: We evaluated paraffin embedded specimens of wedge liver biopsies obtained at portoenterostomy (PE) from 47 BA patients. Biopsies were stained for CK7 by immunohistochemistry (DAKO, 1:100) in order to outline the biliary structures. Ten fields (200x) were captured from each slide and, in every image, using the software Adobe Photoshop CS3 Extended 10.0 (Adobe Systems Inc., USA), we quantified the area of CK7-positive structures measured in pixels. The percentage of CK7-positive structures (PCK7) in each image was calculated by the ratio: CK7 positive area/total amount of pixels per field. For each patient the average of the PCK7 values (PCK7) in each image was calculated by the ratio: CK7 positive area/total amount of pixels per field. The extent of fibrosis in the biopsies was evaluated according to a specific fibrosis score (FS) for BA (Weerasooriya V, et al. J Pediatr 2004; 144:123-5). The outcome post-PE prognosis was evaluated by the native liver survival in 1 post-surgical year, and correlated with PCK7, age at PE and FS. Statistics: Student's T Test/Tukey, Pearson's and Spearman's correlations and multiple regression. Results: Age at PE ranged between 25 and 155 (74.8±25.9) days. PCK7 ranged between 0.80% and 14.79% (7.36±4.15). 14/47 (29.8%) patients died or underwent liver transplantation. Statistics: Student's T Test/Tukey, Pearson's and Spearman's correlations and multiple regression. Results: Age at PE and FS were significantly correlated with the outcome post-PE prognosis (P<0.05). The extent of bile duct proliferation evaluated by morphometric analysis is associated with the prognosis in biliary atresia.
transplantation until 1 year post-PE; in these patients PCK7 was significantly higher than the other 33 patients (11.04±3.71 vs 5.80±3.28; P<0.001).
PCK7 correlated with FS (r=+0.50; P<0.001) and with age at PE (r=+0.42; P=0.003). Patients with the lowest FS (FS1) significantly differed from patients with cirrhosis (FS3) regarding PCK7 (P=0.001). The multiple regression study showed PCK7 as the only variable by the time of PE that correlates with the 1 year native liver survival (Table; P=0.004). Conclusion: Higher extent of BDP in biopsies of BA patients, evaluated by PCK7 measurement, is associated with a bad prognosis in one year post portoenterostomy.

---

<table>
<thead>
<tr>
<th>Variable</th>
<th>Crude OR (CI 95%)</th>
<th>P</th>
<th>Adjusted OR (CI 95%)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age at portoenterostomy</td>
<td>1.02 (1.00 - 1.05)</td>
<td>0.08</td>
<td>1.00 (0.97 - 1.04)</td>
<td>0.746</td>
</tr>
<tr>
<td>PCK7</td>
<td>1.50 (1.20 - 1.80)</td>
<td>0.001</td>
<td>1.50 (1.20 - 1.97)</td>
<td>0.002</td>
</tr>
<tr>
<td>Fibrosis score (FS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FS1</td>
<td>0.21 (0.02 - 1.97)</td>
<td>0.174</td>
<td>0.174 (0.02 - 1.97)</td>
<td>0.472</td>
</tr>
<tr>
<td>FS2</td>
<td>0.19 (0.02 - 1.70)</td>
<td>0.136</td>
<td>0.136 (0.02 - 1.70)</td>
<td>0.278</td>
</tr>
<tr>
<td>FS3</td>
<td>1.0160</td>
<td>1.039</td>
<td>1.0160</td>
<td>1.039</td>
</tr>
</tbody>
</table>

---

P0657

Title: VEGF expression in the portal structures of biliary atresia patients

Jorge Luiz dos Santos 1, Luise Meurer 1, Carlos Oscar Kieling 1, Andrea Lorentz 1, Patricia Turnes Edom 1, Themis Reverbel da Silveira 1
1) Hospital de Clínicas de Porto Alegre, Porto Alegre, Brasil

Summary:

Objective: In this study we aimed at evaluating the immunohistochemical expression of vascular endothelial growth factor (VEGF), an angiogenic growth factor associated with hypoxia and inflammation, in the portal structures of patients with biliary atresia (BA) at the time of portoenterostomy (PE). Methods: We evaluated paraffin embedded specimens of wedge liver biopsies obtained at PE from 52 BA patients with (n=14) and without (n=38) extrahepatic associated anomalies (EHA), including 5 patients with BA-associated splenic malformation syndrome (BASM). Biopsies of 8 patients with other causes of neonatal cholestasis (NC) with similar age and 8 necropsies of patients with no liver disease (NLD) were used as controls. Biopsies were stained for VEGF by immunohistochemistry (DAKO, 1:400, ABC-peroxidase). One pathologist and the first author, “blinded” regarding the diagnoses, evaluated the VEGF expression in portal structures including bile ducts (BD) and hepatic artery branches. A score for VEGF expression was created using the product of staining intensity (0- absent; 1- low; 2- moderate; 3- intense) x percent of stained portal structures in each field (0-absent; 1- up to 20%; 2- 20% to 70% and 3- more than 70%). The extent of fibrosis was evaluated according to a specific score for BA (Weerasooriya V, et al. J Pediatr 2004; 144:123-5). Results: The VEGF expression in BD and in the arterial medial layer (AML) of the hepatic artery branches correlated with the fibrosis extent (r=+0.52; P<0.001 and r=+0.58; P<0.001, respectively). The VEGF expression in BD and AML was greater in BA than in NC (P=0.020; P=0.010, respectively) and than in NLD (P<0.001 for BD and AML). The group of BA with EHA did not differ from NC regarding BD nor AML (P=0.355; P=0.222). The BASM group did not differ from NC in these structures (P=0.978; P=0.655). However, VEGF expression in BD and AML were significantly greater in BA cases without EHA in comparison with NC (P=0.019; P=0.010, respectively). Conclusion: VEGF is over-expressed in BD and AML of hepatic artery branches in BA, mainly in the group without EHA, suggesting that the causal insult of BA may act in different steps during the hepatobiliary development.

P0658

Title: AUTOIMMUNE HEPATITIS (AIH): 18 YEARS OF EXPERIENCE IN TWO INSTITUTIONS IN BOGOTA, COLOMBIA

José F Vera-Chamorro 2, Esperanza Arciniegas 2, Barros Gisela 2, Marco A Suárez 1, Jaqueline Mugnier 1, Oscar J Quintero 1

Summary:

Objective: describe the form of presentation, diagnosis and treatment of pediatric patients with AIH in the last 18 years as there are no such reports thereof in Colombia. Methods: a retrospective study was carried out of patients < 18 years of age diagnosed with AIH from January 1998 to December 2007. Results: 32 patients were discovered with AIH, 21 (65.6%) female, the ages at the moment of presentation were: 4 (12.5%) patients under the age of 5, 7 (21.9%) patients between 6-11 and 21 (65.6%) patients > 12 years of age. The initial form of presentation was: chronic hepatitis in 23 (71.9%), cirrhosis study in 5 (15.6%) and fulminant liver failure in 4 (12.5%). The most important findings upon entry were: jaundice 15 (46.9%),
CONGENITAL HEPATIC FIBROSIS. REPORT OF 6 CASES

María Elena Aguilar 1, Judith Flores 1, Guillermo Ramón 1, Verónica López 1
1) Dpto. Gastroenterología y Patología, Hospital de Pediatría, CMN SXXI, IMSS, Mexico, City, México

Summary:
OBJECTIVE. Congenital hepatic fibrosis (CHF) is a defect in the development of the ductal plates associated with autosomic recessive polycystic kidney disease (ARPKD) due to a mutation in the gene PKHD1 of the chromosome 6p12. This gene codifies the fibrocistine/poliductine protein which has been localized in the tubular renal cells and cholangiocites. Morbidity of ARPKD has a wide range of renal and hepato-billiary manifestations that include: hypertension, terminal renal disease and CHF sequelae. The severity and predominance of the disease in one organ or another are related with the type of mutant alleles which explains the different phenotypic demonstrations. CHF alone or associated with ARPKD it is a rare diagnosis and for this reason the aim of this study is to present a series of cases describing their clinical presentation, renal involvement and outcome. METHODS. We included all the patients with histological diagnosis of CHF seen in our service during the years 1991 to 2007. We reviewed retrospectively the clinical files, abdominal ultrasounds and hepatic biopsies of eight patients. Six patients were included (4 females and 2 males) who had complete data. Data obtained: age, clinical signs and symptoms at diagnosis, renal or hepatobiliary involvement, ultrasound and histological findings, and outcome. RESULTS: The average age at diagnosis was 6 years; 3 patients had renal manifestations and 3 had hepatomegaly. In all cases the histological findings revealed dysplasia with normal ductal morphology loss. The clinical course was stable in only two patients. Four children had portal hypertension, 2 had variceal re-bleeding after sclerotheraphy and required splenorenal shunt (SRS). Four patients had renal condi-
tion: 3 polycystic renal diseases and 1 nephronoptisis. Of these patients 3 had chronic renal failure, renal transplant was done in 1/3. There was no mortality reported during the follow up (mean 4.5 years). CONCLUSION. Our results are similar to those reported in the literature. Children with CHF had a variable clinical course with severe renal involvement in the 50% in our cases. During the follow up half of the patients had renal failure, and one evolved to a terminal phase, the rest had predominant hepatic symptoms. Due to the genetic character of this entity, and the advance in the biomolecular techniques for the diagnosis, in the future, family members of the patients should have genetic assessment to allow 

<table>
<thead>
<tr>
<th>Esophageal Damage Normal Mucosa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Nonacid Episodes 548 75</td>
</tr>
<tr>
<td>Number Acid Episodes 844 201</td>
</tr>
</tbody>
</table>

P0662

Title: NUTRITIONAL STATUS AND SEVERITY OF CHRONIC CHOLESTATIC DISEASE IN CHILDREN LISTED FOR LIVER TRANSPLANTATION

Sindy Ledesma 1, Perla Rodríguez 1, Judith Flores 1, Elena González 1, Salomé Anaya 1, Segundo Morán 1
1) Hospital de Pediatría, Centro Médico Nacional SXXI, IMSS, Mexico, City, Mexico

Summary:
OBJECTIVE. Chronic cholestatic diseases due to Biliary atresia (BA) and neonatal progressive cholangiopathy are the most frequent causes of liver transplantation (LT) in children. Waiting list mortality risk factors are the nutritional status and PELD score. The aim of this study was to determine the frequency of nutritional deficiency and the severity the liver disease of our patients at the time of listing for LT. METHODS. From September/2006 to December/2007 all patients with chronic cholestatic disease who were listed for LT prospectively underwent nutritional assessment (Z score for Weight/Height, Height/Age, Weight/Age with CDC charts, and tricipital skinfold). Severity of liver disease was evaluated by PELD score. Analysis: We used descriptive statistics and Spearman correlation analyzed with SPSS program. RESULTS: During a 16 month period we received 35 new cases with neonatal cholestasis; 13/35 (37%) had severe end liver failure with death prior to listing who were excluded (11 with BA). Twenty two patients were included aged from 49 days to 5 year, 11 male gender, 16 had BA with mean age at diagnosis of 14 weeks(7 to 17), 8 had Kasai failure; 3 had PFIC, 2 Biliary cirrhosis and 1 Aaligle Syndrome. At listing 16/22 (72%) were > 1 year of age. Outcome: underwent LT 3 (14%), died 5 (23%), on waiting list 14 (63%). We found a correlation between PELD and tricipital skinfold of -0.739 (p .0001), no significant correlations between other anthropometric parameters were found. CONCLUSION: At listing time for LT we found a 55% frequency of nutritional deficit in our cases and in 68 % PELD score >10, factors that contribute for poor outcome. Our mortality is high prior to listing especially in those with BA. In overall cases listed or not listed with chronic cholestasis disease, there is an urgent need to improve early supportive nutritional management and aware for a prompt referral. Tricipital skinfold could be a good anthropometric index for nutritional evaluation for these patients.

P0663

Title: In vitro MRI of human hepatocytes for cell transplantation.

Juliana Puppi 1, Ragai R Mitry 1, Robin D Hughes 1, Michel Modo 2, Anil Dhawan 1
1) Institute of LiverStudies, King’s College London School of Medicine at King’s College Hospital, London, UK 2) Neuroimaging Research Group, Institute of Psychiatry, King’s College London, London, UK

Summary:
Hepatocyte transplantation is being used as a treatment for liver-based metabolic disorders in children. Objectives: To assess the feasibility of labelling human hepatocytes in vitro with superparamagnetic iron oxide (SPIO) nanoparticles for MRI, and evaluate the effects of labelling on cell viability, function, and metabolism. Methods: Human hepatocytes were incubated with clinically available dextran-coated SPIO nanoparticles at various iron concentrations. Iron uptake was assessed at different time points using Prussian blue staining and immunofluorescence, and quantified by a colorimetric ferrozine–based assay. Cell viability and function were assessed using SRB (cell attachment), MTS (mitochondrial dehydrogenase activity), and [14C]leucine incorporation assays. Secretion of urea, albumin, and transferrin were determined. CYP1A1/2 activity was assessed using ethoxyresorufin O-deethylation assay and reactive oxygen species (ROS) formation determined by flow cytometry using the fluorescent probe CM-H2DCFDA. Effects of labelled cells on T2-weighted images were assessed using a 7-T MR scanner. Results: SPIO nanoparticles were detected in the cytoplasm of hepatocytes by light and fluorescence microscopy. Intracellular iron concentrations increased in both a dose and time-dependent manner up to 18.5±3.4pg Fe/cell. For the in vitro assays, cells were labelled with 50ìg Fe/ml for 16h. Cell attachment and mitochondrial dehydroge-
nase activity were unaffected by labelling. Three days after labelling there was a 28% reduction in hepatocyte [14C]-leucine incorporation compared to control. There was no effect on urea, albumin and transferrin production (167.7±41.7ìg urea/mg cell protein, 4.5±0.4ìg albumin/mg cell protein, and 2.2±0.5ìg transferrin/mg cell protein) compared to control (189.1±42.8ìg urea/mg cell protein, 5.9±0.9ìg albumin/mg cell protein, and 2.5±0.5ìg transferrin/mg cell protein). There was no change in CYP1A1/2 activity or ROS formation after labelling. In vitro MRI of labelled cells induced a significant decrease in signal intensity. SPIO-labelled cells (2000 cells/ìl) were readily detected and induced a T2 relaxivity change of 60% compared to non-labelled cells. Conclusions: Hepatocyte labelling with SPIO at a concentration up to 50ìg Fe/ml for 16h did not have major effects on cell viability, function and metabolism, and allowed in vitro MRI detection. MRI could potentially be used to track SPIO-labelled hepatocytes after transplantation.

**Title:**
Posttransplantation lymphoproliferative disorder after liver transplantation in pediatric patients

**Authors:**
Jung Hwa Lee 1, Jae Sung Ko 1, Kyung-Suk Suh 2, Gyeong Hoon Kang 3, Jeong Kee Seo 1

**Institutions:**
1) Division of Pediatric Gastroenterology, Hepatology and Nutrition, Seoul National University College of Medicine, Seoul, Korea
2) Department of Surgery, Seoul National University College of Medicine, Seoul, Korea
3) Department of Pathology, Seoul National University College of Medicine, Seoul, Korea

**Summary:**
Objective: Posttransplantation lymphoproliferative disorder (PTLD) is a serious disease that has been defined as uncontrolled proliferation of lymphocytes in the setting of posttransplant immunosuppression. Because it may progress to malignancy, PTLD is a life-threatening complication of organ transplantation in children. The aim of this study is to evaluate the clinical features, diagnosis, treatments and outcomes of PTLD after liver transplantation in Korean children. Methods: From January 1988 to December 2006, 7 of 121 pediatric patients who underwent liver transplantation were diagnosed as PTLD. We retrospectively analyzed the age at transplantation, time of presentation after transplantation, clinical manifestations, histological findings, results of EBV assessments, managements and outcomes of PTLD. Results: The incidence of PTLD in liver transplant pediatric recipients was 5.8%. The mean (SD) age of patients at the time of liver transplantation was 8.6±4.7 months (range 4 to 18 months). PTLD were diagnosed less than 8 months after transplantation in five patients, at 41 months in one, and at 61 months in one. The common clinical presentations were persistent fever, diarrhea and hematochezia. Six of seven patients were found EBV-positive. Histologic findings showed ‘early lesion’ in two, polymorphic in two, and monomorphic PTLD in three patients. Burkitt lymphoma and lymphoblastic lymphoma were found in two of three patients with monomorphic PTLD. All patients were treated with reduction of immunosuppression and infusion of gancyclovir. Rituximab was added in three patients. PTLD were successfully managed in all patients except one who died of sepsis during chemotherapy. Conclusion: PTLD in pediatric liver recipients is successfully managed by the antiviral agents with withdrawal of immunosuppression, or adding the infusion of anti-CD20 antibody in some patients. For the favorable prognosis, it is critical to identify PTLD at its early stages with effective diagnostic tests including endoscopic biopsy and EBV viral load measurements.

**Title:**
Activation of hepatic stellate cells in children with type I autoimmune hepatitis: immunohistochemical study of liver biopsies before treatment and after clinical remission.

**Authors:**
Jussara M C Maia 1, Hélcio S Maranhão 1, Luao V Sena 1, Italo A Medeiros 1, Luiz R M da Rocha 1, Ana Maria O Ramos 1

**Institutions:**
1) Universidade Federal do Rio Grande do Norte, Natal, Brazil

**Summary:**
Objectives: The activation of hepatic stellate cells (HSC) is considered the most important event of hepatic fibrogenesis, but is unknown in autoimmune hepatitis (AIH). The aim of the study was to assess the activation of HSC in children with type I AIH, before treatment and after clinical remission. Methods: We analyzed 16 liver biopsy samples from 8 children with type I AIH, paired before treatment and after clinical remission (mean interval = 24 ± 18 months), using an immunohistochemical study with an anti-alpha smooth muscle actin (anti-alpha SMA) antibody. The positivity for this antibody, characterizing HSC activation, was quantified using a digitalizing system and image analyzer (Image Pro Plus software, version 3.0-Media Cybernetics – LP, USA). Wilcoxon’s test was used to compare the analyses. Results: Mean age at diagnosis was 8.1 ± 3 years, with a predominance of girls (87.5%). Anti-alpha SMA antibodies were expressed in the HSC in all the initial biopsies (3491.93 ± 2051.48) and a significant reduction was found in post-remission biopsies (377.91 ± 439.47) (p = 0.0117). Conclusion: The confirmation of HSC activation and its subsequent reduction after clinical remission provides important perspectives in the follow-up of fibrosis evolution in patients with AIH.
Title: Evolution of hepatic fibrosis in children with type I autoimmune hepatitis: histological findings before treatment and after clinical remission.

Jussara M C Maia 1, Hélcio S Maranhão 1, Lauro V Sena 1, Luiz R M Rocha 1, Italo A Medeiros 1, Ana Maria O Ramos 1
1) Universidade Federal do Rio Grande do Norte, Natal, Brazil

Summary:
Objectives: Fibrosis regression can be observed in various chronic liver diseases, by eliminating the etiologic agent or pathogenic base. In autoimmune hepatitis (AIH), more evidence is needed about its evolution. The aim of this study was to analyze the evolution of fibrosis and inflammation in liver biopsies of children with type I AIH, comparing the findings before treatment and after clinical remission. Methods: We analyzed 16 liver biopsy samples from 8 children with type I AIH, paired before treatment and after clinical remission (mean interval = 24 ± 18 months). The fibrosis and inflammation findings were expressed as scores between 0 and 4 (Batts and Ludwig) and compared using Wilcoxon’s test. Results: Mean age at diagnosis was 8.1 ± 3 years, with a predominance of girls (87.5%). No significant decrease in fibrosis scores was found (2.5 ± 0.93 versus 2.0 ± 0.53, p = 0.2012). However, there was significantly reduced inflammation: portal (2.6 ± 0.74 versus 1.3 ± 0.89, p = 0.0277), periportal/periseptal (3.0 ± 0.76 versus 1.4 ± 1.06, p = 0.0277) and lobular (2.8 ± 1.04 versus 0.9 ± 0.99, p = 0.0179). Conclusion: Despite significantly decreased inflammation in post-remission liver biopsies of children with type I AIH, the persistence of fibrosis suggests the need for a longer histological follow-up period, owing to the risks of potential evolution toward cirrhosis.

Title: Three pediatric patients with fever-induced recurrent severe hypertransaminasemia and coagulopathy with transient hepatic steatosis

Kazuhiko Bessho 1, Mari Murakami 1, Yuki Kiyohara 1, Keiichi Ozono 1, Sotaro Mushiake 1
1) Osaka University Graduate School of Medicine, Osaka, Japan

Summary:
Objective: To describe three children who presented with fever-induced recurrent episodes of hypertransaminasemia and coagulopathy without neurological disturbance and had transient microvesicular hepatosteatosis. Patients: Patient 1 is a 9-year-old girl and patient 2 is her 6-year-old brother. Patient 3 is a 22-month-old unrelated girl. They did not have family histories of liver diseases and inborn errors of metabolism and have been normally developing. They have experienced recurrent episodes of hypertransaminasemia (AST/ALT up to 31,374/15,180 U/L), and coagulopathy (PT-INR more than 10), following high-grade fever with or without emesis, since the age of 27-, 6- and 5-month, respectively. Those symptoms recovered within a week and no neurological disturbance were observed. Elevations of serum bilirubin concentrations were only mild and no hyperammonemia, hypoglycemia nor metabolic acidosis were observed. Serum factor VII and rapid turnover proteins decreased with levels which were inversely proportional to their half-life, but serum albumin levels did not change. Liver biopsies performed during the acute illness showed diffuse microvesicular steatosis without inflammation nor necrosis. Electron microscopy revealed dilation of rough endoplasmic reticulum along with many fat droplets, but mitochondrial changes were not remarkable. Repeated biopsies performed 2 to 6 weeks later, showed normal liver architecture and microvesicular steatosis had entirely disappeared. They have presented with such episodes for 20-, 9- and 4-times, respectively. The etiology of the disorder was not determined in spite of examinations including serologic tests for hepatotropic viruses, markers of autoimmune hepatitis or serum ceruloplasmin. No drug-related hepatotoxicity was suspected. An extensive metabolic workup including evaluation for fatty acid oxidation deficiency, amino and organic acidurias and urea-cycle defects were performed with the blood, urine and liver tissues, but revealed no diagnostic abnormalities suggestive of any metabolic disorders in all three patients. Conclusion: We propose here a novel disorder of liver specific transient functional arrest during infancy and childhood. The cause of this disorder remains unknown, but we postulate that the dysfunction of some thermolabile factor which is involved in protein synthesis, is triggered by a viral or environmental insult, and underlies the pathogenesis.

Title: Comparison of the nucleotide substitution rate of the hepatitis C virus NS5b region in mothers and their infants

Kenji Goto 1, Koichi Ito 1, Tokio Sugiuara 2, Anis Khan 3, Yasuhiito Tanaka 3, Masashi Mizokami 3
1) Department of Neonatology and Pediatrics, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan 2) Department of Pediatrics, Toyohashi Municipal Hospital, Toyohashi, Japan 3) Department of Clinical Molecular Informatice Medicine, Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan
Summary:
Objective: It has been reported that the incidence of mother-to-infant transmission is approximately 5–10% in infants born to mothers who are RNA-positive for hepatitis C virus (HCV). This is an important route of childhood HCV infection because HCV infection through blood transfusion has been eliminated by blood donor screening. Like most RNA viruses, HCV exhibits extensive genetic diversity. There have been several reports on the genetic diversity of hypervariable region 1 in mother–infant pairs and among infected infants. However, little is known regarding changes in the nonstructural (NS) region of the HCV genome, which encodes the viral RNA-dependent RNA polymerase, an essential viral replicating enzyme, in infected infants. Also, little is known regarding the difference between mothers and infants in the evolution rate of HCV in the NS region. To investigate the characteristics of HCV evolution, we isolated HCV-RNA from the sera of 7 mother–infant pairs with vertical transmission and analyzed the NS5b region.

Methods: Seven Japanese mother–infant pairs with vertical transmission of HCV were studied. Two infants were treated with pegylated interferon monotherapy. HCV-RNA extracted from serum samples of the pairs was analyzed. The 336-bp sequences in the NS5b region of the HCV genome were compared with regard to subtype, phylogenetic results, and nucleotide substitution rate. Results: The distribution of the HCV subtype was as follows: subtype 1b, 3 pairs; subtype 2a, 3 pairs; subtype 2b, 1 pair. The phylogenetic analysis proved from the relationship of the sequences in the NS5b region that all seven pairs were cases of mother-to-infant transmission of HCV. The nucleotide sequences in the NS5b region of HCV obtained from each of the infants were nearly identical to those of their mothers, showing 98.9% (mean) similarity. Nucleotide substitution within the NS5b region was identified in 4 of the 7 mothers but in only one infant. Conclusions: The phylogenetic analysis of the NS5b region of the HCV genome was useful for proving mother-to-infant transmission of HCV. The evolution of NS5b did not increase in infants infected through mother-to-infant transmission in childhood. The lower immunological pressure generated by the infant host may affect viral evolution.

P0669

Title: Polymorphisms of the factor VII gene associated with the low activities of vitamin K-dependent coagulation factors in one-month-old infants

Koichi Ito 1, Kenji Goto 1, Tokio Sugiyama 2, Toshihiro Ando 3, Kohachiro Sugiyama 3, Hajime Togari 1
1) Department of Pediatrics and Neonatology, Nagoya City University, Graduate School of Medical Sciences, Nagoya, Japan 2) Department of Pediatrics, Toyohashi Municipal Hospital, Toyohashi, Japan 3) Sugiyama Children’s Clinic, Gifu, Japan

Summary:
Objective: Despite administration of vitamin K (VK), some infants show lower activity of VK-dependent coagulation factors and they could develop intracranial hemorrhage. For preventing VK deficiency bleeding (VKDB) in infants, oral administration of VK and a screening test for VK deficiency are carried out in Japan. For the screening, the total activity of VK-dependent coagulation factors is measured using a commercial product, Normotest. This study was undertaken to clarify the importance of the following genetic and environmental factors on the coagulation status in one-month-old infants: two polymorphisms in the factor VII gene, -323P0/10 (a 10-bp insertion in the promoter region at position -323) and R353Q (the replacement of arginine [R] with glutamine [Q] at residue 353) and sex, age, gestational age, birth weight, and feeding regimen.

Method: Two hundred Japanese infants (34.6 +/- 4.0 days old) were screened for VK-dependent coagulation activity with Normotest and were genotyped for the two polymorphisms. Results: Among the subjects screened, 18 infants (9%) carried the P10 allele and 26 (13%) carried the R353Q allele. The mean and standard deviation of Normotest values for R/R, R/Q, and Q/Q genotypes were 91.2 +/- 14.9, 81.0 +/- 14.1, and 76%, respectively. And the mean and standard deviation of Normotest values for P0/P0, P0/P10, and P10/P10 genotypes were 91.2 +/- 14.7, 75.9 +/- 12.5, and 76%, respectively. Multiple regression analysis showed that the 10-bp inserted (P10) allele or the Q allele was associated with the lower coagulation activities. The coagulation activities for the R/Q genotype were significantly lower than those for the R/R genotype and those for the P0/P10 genotype were significantly lower than those for the P0/P0 genotype. Conclusion: Infants who carry the P10 allele or the Q allele show lower activity of VK-dependent coagulation factors. These infants may have a higher risk of VKDB manifestation.

P0670

Title: The spectrum of inflammatory bowel disease associated with autoimmune liver disease in the pediatric age range

K Soondrum 1, S Rodrigues 1, G Mieli-Vergani 2, R Hinds 1
1) Department of Child Health, King’s College Hospital, London, UK 2) Institute of Liver Studies, King’s College Hospital, London, UK

Summary:
Background: Patients with sclerosing cholangitis (SC) have a high incidence of inflammatory bowel disease (IBD). IBD may be asymptomatic at the time SC is diagnosed. Ulcerative colitis (UC) is the most common form of IBD in SC, but some patients develop a unique entity: “PSC-IBD”, frequently exhibiting endoscopic rectal sparing. In children the clinical features of IBD associated with autoimmune liver disease (AILD) are not well...
RESULTS This 8 year old Mexican-American girl presented with a history of epigastric pain for three months. She was noted to have truncal obesity affecting all segments of the liver. A diagnosis of maturity-onset diabetes of the young (MODY3) was made simultaneously. The case presentation is made to affect an increased risk of malignancy. TCF-1 encodes hepatocyte nuclear factor-1, a gene which is also mutated in homozygote form in the adenomas, which may predispose to an increased risk of malignancy. TCF-1 encodes hepatocyte nuclear factor-1, and biallelic inactivation of this tumor-suppressor gene found on chromosome 12q results in formation of innumerable hepatic adenomas. OBJECTIVE We present the case of an 8 year old girl presenting with epigastric pain who underwent routine ultrasound evaluation of the abdomen, resulting in a diagnosis of diffuse adenomatosis of the liver. A diagnosis of autoimmune SC (AISC) was made based on cholangiographic changes and/or histological features of cholangitis, in the presence of positive AAB. SC without positive AAB was described as primary SC (PSC). All patients underwent ileo-colorotoscopy (ICOL). Those diagnosed with liver disease first, had IOCL within 3 months of diagnosis. Results: 34 children with LD and IBM were identified (median: 12yrs 3m; range: 5yrs - 15yrs 9m). 28 had IBM and AISC. 2 patients with UC had autoimmune hepatitis (AIH) with normal cholangiography and no cholangiolic features on liver biopsy. 4 had endoscopic retrograde cholangiopancreatography (ERCP) confirmed SC associated with IBM without positive ANA or SMA; 2/4 had positive perinuclear anti-neutrophil cytoplasmatic antibodies (pANCA) and were classified as PSC (not included in subsequent analysis). 29/34 (85%) were pANCA positive. A total of 30 children were diagnosed with AISC included SC and AIH, 21/30 (70%) had UC, 6/30 (20%) had indeterminate colitis and 3/30 (10%) had Crohn’s disease. Patients with indeterminate colitis 4/6 had rectal sparing. Conclusions: In the pediatric age range SC associated with IBM seems to be predominantly of an autoimmune aetiology. UC remains the most common form of IBM in children with AISC. Indeterminate colitis is slightly over-represented and rectal sparing was seen relatively unusual in pediatric non-Crohn’s IB. SC was a rare event in our series (5.8%) compared to adult studies. Patients with AIH without any evidence of SC have been diagnosed with IBM. Follow up is warranted to see if they evolve into AISC. All patients diagnosed with AISC should have IOCL, even in absence of symptoms.

P0671

Title: Wilson disease in Vietnamese children

Hoang Le Phuc 1, Peter Ferencz 2
1) Department of Gastroenterology, Children’s Hospital # 1, Ho Chi Minh , Vietnam 2) University Clinic for Internal Medicine IV, Vienna, Austria

Summary:

Objective: to identify the clinical, biochemical, ATP7B gene mutation features of children with Wilson disease (WD) in Vietnam. Methods: Thirty-three children with confirmed WD admitted to Children's Hospital #1 from 2000 to 2006 were evaluated retrospectively for the clinical features at presentation and laboratory findings. Thirty-five blood samples from 8 families of the index cases were analyzed by direct sequencing of exons 4-21 of ATP7B gene at University Clinic for Internal Medicine IV, Vienna, Austria. Results: All of the patients had the systemic WD score at least 4. The male: female ratio was 2:1 (22:11). The mean age was 11.24 +/- 2.6 years; the youngest was 13 month old. Two cases were ethnic minorities. The fulminant (H1), non-fulminant hepatic (H2), neurohepatic (N1) and neurological (NX) manifestations were 15.2%, 51.5%, 27.3% and 6.1%, respectively. The Kayer Fleischer ring was found in 100% patients with the neurological signs and symptoms but only 75.6% for the whole group. The most common biochemical abnormalities were decreased serum ceruloplasmin (100%), increased urinary copper (93.9%), increased prothrombin time (92%; 22 of 25 measured cases), increased liver enzymes (51.5%). The alkaline phosphatase (U/L) : bilirubin (mg%) ratio is less than 2 in all five cases of fulminant WD (mean 1.04). Five identified disease-causing mutations are P767P-fs, R832K, T850I, E1173K and Q1372X. In addition the polymorphic variant A1140V was found. With identical mutations one sibling of the index case was diagnosed at 8 month old and being copper overloaded by 13 month old. Conclusions: in this first report from Vietnam, pediatric WD manifestations were varied and challenging. The identified mutations are similar to China, Taiwan and European studies. Molecular diagnosis of WD is very useful in family screening of the index case. The 24h urinary copper should be tested at early age as 12 months in the genetic confirmed WD patient for early prevention of copper overload.

P0672

Title: HEPATIC ADENOMATOSIS (TCF-1 MUTATION) AND MATURITY-ONSET DIABETES OF THE YOUNG (MODY3)

Lesley J Smith 1, Erick Hernandez 1, John F Thompson 1, Eddie R Island 1, Andreas Tzakis 1, Tomoaki Kato 1
1) University of Miami, Miami, USA

Summary:

Autosomal dominant maturity onset diabetes of the young (MODY3) has been associated with hepatic adenomatosis, which may cause significant abdominal pain and life-threatening intrahepatic or intraperitoneal hemorrhage. At least 6 different mutations have been associated with this form of diabetes, the most common of which is transcription factor-1 (TCF-1), a gene which is also mutated in homozygote form in the adenomas, and which may predispose to an increased risk of malignancy. TCF-1 encodes hepatocyte nuclear factor-1, and biallelic inactivation of this tumor-suppressor gene found on chromosome 12q results in formation of innumerable hepatic adenomas. OBJECTIVE We present the case of an 8 year old girl presenting with epigastric pain who underwent routine ultrasound evaluation of the abdomen, resulting in a diagnosis of diffuse adenomatosis affecting all segments of the liver. A diagnosis of maturity-onset diabetes of the young was made simultaneously. The case presentation is made to stimulate awareness of this rare entity and to facilitate a discussion of the role of TCF-1 in hepatic neoplasia. METHODS Retrospective chart review. RESULTS This 8 year old Mexican-American girl presented with a history of epigastric pain for three months. She was noted to have truncal obesity...
and acanthosis nigricans and was diagnosed with type 2 diabetes. She was treated with metformin (which she could not tolerate) and insulin with excellent control. Ultrasound evaluation revealed innumerable hyperechoic lesions throughout the liver, and MRI confirmed that these lesions were likely adenomas. She underwent open biopsy of the liver demonstrating a 1.5cm hepatic adenoma which was not considered malignant. Her AFP was normal and subsequent evaluation of the liver has shown the interval development of three new small lesions. She also has a history of an asymptomatic intracerebral cyst. She has a strong family history of type 2 diabetes diagnosed in young adulthood in 4 members of her family, of whom 3 require insulin, and none have hepatic adenomatosis. CONCLUSION This rare condition highlights the role of genetic mutation in hepatic neoplasia and the association of hepatic adenomatosis with MODY. The management algorithm suggests interval evaluation by USS and MRI, recognising that AFP may not be useful. Liver transplantation may be necessary in the future for unremitting abdominal pain, sudden lesional increase, or hemorrhage.

P0673

**Title:** ORTHOTOPIC LIVER TRANSPLANTATION FOR FACTOR VII DEFICIENCY

Lesley J Smith 1, Erick Hernandez 1, John F Thompson 1, Eddie R Island 1, Andreas Tzakis 1, Tomoaki Kato 1

1) University of Miami, Miami, USA

**Summary:**

INTRODUCTION Autosomal recessive factor VII deficiency is a rare genetic disorder which can result in intracranial bleeding in 15-60% of homozygotes. This can be associated with significant morbidity and mortality, poor quality of life with recurrent bleeding, hospitalization and need for therapy with recombinant factor VIIa. Such therapy may cost up to $1m per year. Liver transplantation offers a phenotypic “cure” of this metabolic disease and is an acceptable alternative to factor therapy in patients with recurrent life-threatening hemorrhage. OBJECTIVE To report a single-center experience of four Hispanic children (including 3 siblings) who underwent orthotopic liver transplantation for severe genetic factor VII deficiency, characterized by intracranial hemorrhage in the neonatal period. METHODS Retrospective chart review RESULTS The characteristics of the patients are shown in the table below: * denotes siblings None of the children had significant neurological sequelae from their neonatal hemorrhagic strokes, and are alive with excellent graft function with follow-up between 2.99 to 11.8 yrs. All patients have normalized their factor VII levels and coagulation profiles. One patient developed a bile duct stricture with recurrent episodes of cholangitis, necessitating a Hutson-Russell procedure. All patients became EBV-positive, with one patient developing symptomatic lymphadeopathy. All have been successfully managed with reduction in immunosuppression. CONCLUSION Although hepatocyte or auxiliary transplantation might allow for a phenotypic cure for the disease without the need for major surgery or lifelong immunosuppression respectively, there have as yet been no successful reported cases. Two children underwent hepatocyte transplantation with transient success at King’s College Hospital in London, UK, but both children subsequently underwent orthotopic liver transplantation for reversal of their coagulation defect similar to our four reported cases. All of our children are alive with functioning grafts, excellent quality of life and normal coagulation profiles. We recommend consideration of orthotopic liver transplantation for patients with autosomal recessive factor VII deficiency who have had recurrent life-threatening hemorrhage.

P0674

**Title:** Concurrent autoimmune manifestations in patients with autoimmune hepatitis

Daniel Simões May 1, Rita Franca 1, Cíbele Dantas Ferreira 1, Adelina Márcia Dias 1, Carol F. Andrade 1, Luciana R. Silva 1

1) CEGHP -Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil

**Summary:**

Objective: To describe the occurrence of the concurrent autoimmune manifestations in patients with autoimmune hepatitis (AIH). Methods: Sixty-nine patients with AIH were interviewed and asked about the occurrence of concurrent autoimmune manifestations associated with hepatitis. The diagnosis were then confirmed by searching on the patients’ medical charts autoimmune hepatitis criteria. Results: The frequency of concurrent auto-immune disorders was 23.2% and rheumatic manifestations were found in 8.7% of the patients. Type 1 diabetes mellitus was found in 4.3% of the patients. The frequencies of celiac disease, vitiligo, systemic lupus erythematosus and haematological disorders were the same, being found in 1.4%. In addition, primary sclerosing cholangitis, ulcerative colitis and Hashimoto’s thyroiditis affected, each one, 2.9%. Conclusions: Screening for concurrent autoimmune manifestations should be recommended for patients with autoimmune hepatitis in order not only to improve the quality of life but also to access the need for additional therapeutic to prevent future complications.

P0675
Distribution of hepatitis B virus (HBV) genotypes among children with chronic infection

Joseni S. Conceição 1, Luciana R. Silva 1, André C. Lyra 3, Gúbio S. Campos 2, Rita Franca 1
1) CEGHP - Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas da Universidade Federal da Bahia, Salvador, Brazil 2) Virology Laboratory of Federal University of Bahia, Salvador, Brazil 3) Hepatology Service of Federal University of Bahia, Salvador, Brazil

Summary:
Objective: Determine the genotypes of children with HBV chronic infection in hepatology outpatient Service in Northeast of Brazil. Methods: We evaluated children and adolescents minors of 19 years that presented positive HBsAg for more than six months followed in the unique pediatric hepatology outpatient from Salvador, Brazil between January 2007 and January 2008. Patients were submitted to a clinical evaluation and all charts were reviewed. HBV DNA was detected in serum by polymerised chain reaction (PCR). The samples were genotyped by comparison of aminoacid mutations and phylogenetic analysis. Results: From 43 patients until now, fourteen patients have their genotype performed. Twelve patients were male and two were female, aged 10 to 17 years (14,1 ±3,6 years). The mean clinical follow-up period was 7,3 years (2,4 -12,8 years). The HBeAg was found in 50% of patients. Six patients (42,8%) had symptoms of liver disease and 27,2% (n=4) showed ALT elevations. Liver biopsy was performed in 13 patients. Histological changes included cirrhosis (2 patients), fibrosis (7 patients) and acinar hepatitis (2 patients). It was possible identify the genotype in 12 samples. All HBV isolates belonged to genotype A. One patient had seroconversion to Anti-Hbs after treatment. Conclusions: The findings of the study indicate that the genotype A is the most prevalent in children with chronic infection in Salvador-Brazil. This data confirms to previous studies with adults patients in our city. There are few published studies in this subject in south american children and none in Brazil.

Title:
Blocking antibodies against bile salt export pump (BSEP) in serum from children who underwent liver transplantation for BSEP deficiency: correlation with episodic recurrence of the original disease.

Luis Alvarez 1, Pilar Martínez-Fernández 1, Loreto Hierro 1, Carmen Camarena 1, María C Díaz 1, Paloma Jara 1
1) La Paz Children’s University Hospital, Madrid, Spain

Summary:
Objective: To examine whether post-transplant low-GGT cholestatic dysfunction of children who have been transplanted for BSEP deficiency is related to the development of blocking antibodies directed against BSEP of grafts. Methods: BSEP disease was documented by mutational analysis of ABCB11, which encodes BSEP, and immunohistochemical evidence of BSEP deficiency. Membrane vesicles from Sf9 cells expressing either human BSEP or human MRP1 were used for immunoblotting and bile acid transport assays. Sera from children were screened at a dilution range of 1:40-1:5120. Results: Three children who underwent cadaveric liver transplantation for BSEP deficiency suffered from post-transplant episodes of cholestatic liver disease mimicking the original disease. Indirect immunofluoresce analysis showed that all three patients were seropositive for anti-canalicular antibodies, which were present at high titre. Sera from these children specifically reacted with BSEP, as revealed by western blotting with membrane proteins from Sf9 cells expressing human BSEP or human MRP1. No reaction was detected when control sera from three children with BSEP disease who have not presented post-transplant cholestatic dysfunction were used. The development of anti-BSEP antibodies were not associated with any particular kind of mutation in ABCB11. The ability of these antibodies to inhibit BSEP function was assessed in membrane vesicles from Sf9 cells expressing human BSEP by measuring ATP-dependent uptake of [3H]-taurocholate. [3H]-taurocholate transport activity (approx. 30 pmol/mg protein/min) was unaffected in the presence of the control sera, but was completely abolished upon addition of serum of affected children or cyclosporin A (20 microM), a known inhibitor of BSEP. Conclusions: Some children treated by liver transplantation for BSEP deficiency develop anti-BSEP antibodies that can potentially block BSEP function in grafts. This is correlated with post-transplant episodic recurrence of the original disease.

Title:
Specific down-regulation of the bile acid sensor FXR by silencing ATP8B1 in HepG2 cells. Effect of the FXR agonist GW4064

Pilar Martínez-Fernández 1, Loreto Hierro 1, Angela de la Vega 1, Esteban Frauca 1, Luis Alvarez 1, Paloma Jara 1
1) La Paz Children's University Hospital, Madrid, Spain

Summary:
Objective: Farnesoid X receptor (FXR) is a bile acid-sensing nuclear receptor that controls bile acid homeostasis. It has been suggested that down-regulation of FXR contributes to the pathogenesis of ATP8B1 disease, a low-GGT form of Progressive Familial Intrahepatic Cholestasis (PFIC). We have investigated (1) the specificity of the relationship between ATP8B1 inhibition and FXR down-regulation and (2) if FXR suppression mediatd by
ATP8B1 knockdown can be prevented by treatment with FXR agonists. Methods: Knockdown of ATP8B1 and ABCB11 in HepG2 cells was attained by using small interfering RNAs (siRNAs). Gene expression was assessed by real-time quantitative RT-PCR and immunoblotting. Results: Transfection of human HepG2 hepatoblastoma cells with ATP8B1 small interfering RNA (siRNA) duplexes led to a 60% reduction in the endogenous levels of ATP8B1 mRNA and protein. A concomitant decrease in FXR mRNA and protein content was detected in the same cell cultures. This decrease was accompanied by a marked reduction in mRNA levels of a subset of FXR target genes, such as bile salt export pump (ABCB11), small heterodimer partner (SHP) and uridine 5’-diphosphate-glucuronosyltransferase (UGT2B4). ATP8B1 knockdown specifically targeted FXR, since mRNA expression of other prominent nuclear receptors also involved in bile acid handling, including pregnane x receptor (PXR) and constitutive androstane receptor (CAR), or liver-enriched transcription factors (HNF-1alpha and HNF-4alpha) was not altered. The expression of other key genes involved in bile acid synthesis, detoxification and transport also remained unchanged upon ATP8B1 knockdown. Supporting the specificity of the effect, siRNA-mediated silencing of ABCB11, whose deficiency is associated with other type of low-GGT PFIC, did not affect FXR expression. Treatment with the synthetic FXR agonist GW4064 was able to partially prevent ATP8B1 siRNA-mediated FXR down-regulation, and fully counteract inhibition of FXR target genes. Conclusions: ATP8B1 knockdown specifically down-regulates FXR and this action can be circumvented by treatment with FXR agonists.

Title: 
CLINICAL AND GENETIC STUDY OF PEDIATRIC PATIENTS PRESENTING WITH WILSON DISEASE IN THE ISLAND OF GRAN CANARIA (SPAIN)

Summary:

OBJECTIVE To perform a phenotypical and genotypical characterization of pediatric patients presenting with Wilson Disease (WD) in the island of Gran Canaria. METHODS Retro and prospective study of 11 patients (9 males and 2 females) presenting with WD, diagnosed and treated at our center between 1990 and 2008. Clinical, analytical, histological, genetic, evolutionary and therapeutic parameters were analyzed, discarding other causes for chronic hepatopathology. RESULTS Median age at diagnosis: 9 years old (3-13). Reason for first exploration: Asymptomatic hypertransaminemia (8 cases), acute hepatitis (1), or family history (2). Physical exploration: Hepatomegaly (4) without Kayser-Fleisher ring, nor skeletal, renal or hematological manifestations. All presented with ceruloplasmin levels <5mg/dl, decreased serum copper and >100 mcg/24h copper urine content after Penicillamine overload. Dry hepatic copper content >250 mcg/gr in all patients analyzed (8). Hepatic biopsy revealed from cirrhosis (1) to milder alterations with micro and macrovesicular steatosis. Mutation analysis at the WD gene, ATP7B, revealed that the most prevalent mutation was the L708P (8 heterozygotes and 3 homozygotes), previously shown to be the most common in the island, accompanied by known and novel variants and one novel putative mutation, c.3796 G>T, causing a G1266W aminoacid change, not previously found in other studies. Interestingly, two patients (sibs) did not present with known mutations but rather with a homozygous haplotype containing four variants not previously associated with the disease when heterozygous with other mutations. These are two novel variants (c.1366 C>G L456V, and c.2855 G>A R952K) and two known ones (c.2495 A>G K832R, and c.3419 C>T A1140V). Treatment: Penicillamine, Vitamin B6 and low copper diet, later substituting Penicillamine by cincacetate. Clinical progress has been satisfactory in all cases. CONCLUSION We propose a novel disease haplotype causing WD. Confirming previous studies, clinical manifestations show heterogeneity among affected patients, even between those carrying the same mutation.

Title: 
Is the liver Biopsy a sufficient method for the diagnosis of the biliary atresia in developing countries?

Mahmoud Bozo 1
1) Damascus Hospital, Damascus, Syria

Summary:

Obejective: The Liver Biopsy (LB) was considered on 2004 by the NSPGHAN recommendations as the best method for the diagnosis of biliary atresia(BA) and the Paucity of the Bile Ducts(PBD). This method fiability has to be discussed in developing countries as it necessities a special experience by the pathologist for the diagnosis. This study aims to define the fiability of the LB in the diagnosis of the BA and PBD in a developing country(Syria). Material and method: All cases of diagnosed cases of BA and PBD during 7 years in the clinic of pediatric hepatogastroentrolgy were analyzed. Results: During 7 years, 9 cases were diagnostic: 4 as BA and 5 as PBD. 3 females , 6 males , ages were 4 weeks in 3 cases , 6 weeks in 3 cases , 8 weeks in 2 cases , 12 weeks in 1 case. the Jaundice was present in all cases , pale stool in 4 cases ,the Direct billrubin presented more than 25% of the total billrubin in all cases , high ASAT in 4 cases. The scintigraphy was not applied in all cases , the BA diagnosis was based on LB 4 cases , the PBD in 5 cases. The surgical intervention confrimed the diagnosis of BA in 3 of 4 cases, but it excluded the diagnosis in 1 case.
Regarding the 5 cases of PBD, a spontaneous regression of the Bilirubin and total cure was marked in all cases. The duration of the Bilirubin regression was 1 month in 2 cases, 4 month in 1 case, and 2 cases consulted the clinic after 1 year with normal bilirubin (they were absent from the follow up during this period). Conclusion: The reliability of the LB in the determination of the BA and the PBD still not clear in developing countries, especially regarding the PBD. The addition of other method of diagnosis in case of BA such as scintigraphy, could ameliorate the diagnosis, and avoid the not necessary surgical intervention in some cases. The association of many diagnostic methods, and the follow up could help in the orientation before the announcement of the PBD diagnosis to the parents.

P0680

Title: Diagnostic value of ultrasonography in biliary ducts atresia

Mandana Rafeey 1, Massod Nemati 2, Alireza Javadzadeh 2
1) Department of Pediatrics, Liver and gastrointestinal research center, Children Hospital, Faculty of medicine, Tabriz University of Medical Sciences, TABRIZ, IRAN 2) Tabriz University of Medical Sciences, TBRIZ, IRAN

Summary: Background Cholestatic jaundice in early infancy is an important clinical condition. Idiopathic neonatal hepatitis and extra-hepatic biliary atresia (EHBA) are two main causes. Distinguishing between these two entities is necessary. It is important to rapidly diagnose EHBA, because an immediate surgery may prevent further potentially fatal consequences. A rapid, ubiquitous, non-invasive and accurate technique is crucial for early diagnosis of EHBA with the least complications. In this study, we evaluated and compared two different diagnostic methods, ultrasonography and HIDA scan for this purpose. Methods & Materials Sixty infants with cholestatic jaundice were studied in a prospective study during a 2-year period in Tabriz Children Hospital. Ultrasonography, HIDA scan and liver biopsy performed in all patients. They were done by the same operators in all patients. The results of liver biopsy considered as the definite diagnosis (gold standard). Accordingly, sensitivity, specificity, positive and negative predictive values and accuracy of ultrasonography and HIDA scan in diagnosis of EHBA were calculated. Results Sixty infants, 35 males and 25 females, with the mean age of 56.1±17.8 days were enrolled in the study. According to the results of liver biopsy, there were 16 (26.7%) cases of EHBA, and 24 (40%) cases of hepatitis. Ultrasonography detected EHBA in 15 cases and HIDA scan diagnosed it in 18 patients. Sensitivity, specificity, positive predictive values, negative predictive value and accuracy of ultrasonography and HIDA scan in diagnosis of EHBA were 87.5%, 97.7%, 93.3%, 95.7%, 95%; and 100%, 50%, 42.1%, 100% and 63.3%, respectively. Four patients died during follow-up. None of the expired patients belonged to EHBA group. Conclusion This study showed a higher specificity and accuracy of ultrasonography for diagnosis of EHBA comparing with HIDA scan; however, the sensitivity was lower. It is recommended to consider ultrasonography in the first step of diagnosis in patients with suspected EHBA.

P0681

Title: A Proteomic Analysis of Liver Mitochondria During Cholestasis

Mao-Meng Tiao 1, Tsu-Kung Lin 2, Jin-Haur Chuang 3, Chia-Wei Liou 2, Pei-Wen Wang 4, Jin-Bor Chen 5
1) Department of Pediatrics, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Taiwan., Kaohsiung, Taiwan 2) Department of Neurology, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Taiwan., Kaohsiung, Taiwan 3) Department of Pediatric Surgery, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Taiwan., Kaohsiung, Taiwan 4) Department of Metabolism, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Taiwan., Kaohsiung, Taiwan 5) Department of Nephrology, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Taiwan., Kaohsiung, Taiwan

Summary: Aim: Hepatic injury caused by cholestasis may be due to mitochondria with oxidative stress. The purpose of this study was to investigate the potential biomarkers for liver damage in cholestasis model identified in mitochondrial proteins. Methods: A model of biliary cholestasis was established in rats without (sham) or with bile duct ligation (BDL). Liver samples were obtained 72 h post-bile duct ligation, and mitochondrial proteins were isolated and quantitatively compared using two-dimensional gel electrophoresis. Differentially expressed proteins (> 2-fold change relative to sham controls) were identified using mass spectrometry. Results: Among over 200 protein spots that were separated differentially expressed in mitochondria of BDL animals relative to matching controls. Spectrometric analyses demonstrated significantly increased expression of thiosulfate sulfurtransferase (rhodanese) in the BDL rat liver as compared to sham-operated rats, the role in the modulation of mitochondrial respiratory activity. Conclusions: Considering the known functions of the protein exhibiting altered expression, it is likely that the observed changes in liver mitochondrial protein expression are reflective of significant changes in mitochondrial function in response to liver damage in cholestasis.

P0682
Title: Cholestatic Liver Injury Down-regulates Hepatic Mitochondrial and PGC1 and Tfam

Mao-Meng Tiao 1, Jiin-Haur Chuang 2, Tsu-Kung Lin 3, Chia-Wei Liou 4, Pei-Wen Wang 5, Jiin-Bo Chen 6

1) Department of Pediatrics, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan
2) Department of Pediatric Surgery, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan
3) Department of Neurology, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan
4) Department of Neurology, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan
5) Department of Metabolism, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan
6) Department of Nephrology, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan

Summary:
Aim: Hepatic injury caused by cholestasis may be due to mitochondria with oxidative stress. The purpose of this study was to investigate the mechanism of the cholestasis stress with the mitochondria oxidant and antioxidants homeostasis. Methods: A model of biliary cholestasis was established in rats without (sham) or with bile duct ligation (BDL). Liver messenger RNA was quantified with real-time quantitative reverse transcriptase-polymerase chain reaction. Peroxisome proliferator-activated receptor-coactivator 1 (PGC1α) and Tfam protein was analyzed by Western blot. Results: Mitochondrial DNA copy number decreased in the liver homogenates BDL rats. PGC-1α protein though not influenced significantly. Tfam proteins decreased at 6 hours after BDL. The PGC-1α mRNA, Tfam mRNA activity was downregulated 6 hours after BDL as compared to sham-operated rats. Conclusions: Our results show that the disturbance of oxidant-antioxidant balance especially in mitochondria may be responsible for cholestatic liver injury in BDL-rats in the early hours.

Title: Liver Diseases Associated with Autoimmune Rheumatic Diseases

Marcela B Correia 1, Regina Sawamura 1, Gesilma C S Pileggi 1, Virginia P L Ferriani 1, Andreia A R Contini 1, Maria Inez M Fernandes 1

1) Faculdade de Medicina de Ribeirão Preto – Universidade de São Paulo, Ribeirão Preto, Brazil

Summary:
Introduction: Liver diseases and rheumatic diseases are correlated, especially regarding symptoms, physiopathology and treatment. Among them are primary biliary cirrhosis, autoimmune hepatitis and primary sclerosing cholangitis, which have an autoimmune component in their pathological basis. Cases and Methods: We selected patients followed up at the Pediatric Rheumatology and Infantile Hepatology outpatient clinics of the University Hospital of Ribeirão Preto who presented liver disease during the course of their autoimmune disease. Results: A total of 10 patients, 6 girls and 4 boys, were studied. One patient developed steatohepatitis after the use of a corticoid for scleroderma. Six patients had autoimmune hepatitis (AIH), 2 of them associated with juvenile rheumatoid arthritis (JRA), 1 with systemic lupus erythematosus (SLE), 1 with JRA+SLE, 1 with juvenile dermatomyositis (JDM), and 1 with SLE+JDM. One patient with polyarteritis nodosa (PAN) presented chronic hepatitis C. Other associations detected were JDM+chronic cholestatic hepatitis and JDM+primary sclerosing cholangitis. The mean time elapsed between the rheumatologic disease and the onset of liver disease ranged from 2 months to 11 years (median = 16.5 months). The manifestations of hepatic involvement were changes in liver enzymes (8 patients) and hepatomegaly (2 patients). The patient with steatohepatitis developed diabetes mellitus, arterial hypertension and dyslipidemia. Age at first consultation ranged from 10 months to 11 years (median = 6.5 years). In all patients except two for whom liver disease was the initial complaint, the first manifestation was rheumatologic, in 6 it was pain in the lower limbs, and in 2 it was related to vasculopathy. A liver biopsy was obtained from all patients, helping to confirm the diagnosis. Treatment of the rheumatologic disease was sufficient to keep all patients with AIH in remission. Conclusion: In the follow-up of patients with autoimmune diseases it is essential to perform exams that will permit an early detection of hepatic changes. A liver biopsy confirms the diagnosis, indicating the best therapeutic option and thus improving the prognosis of these patients.
Title: **Celiac Disease and Autoimmune Hepatitis**

Adriana Afazani 1, Patricia Caglio 2, Silvia Morise 1, Carlos Quintana 1, Margarita Ramonet 2  
1) Servicio de Gastroenterología y Hepatología, Hospital de Niños Dr. Pedro de Elizalde, Buenos Aires, Argentina 2) Sección Gastroenterología, Hepatología y Nutrición. Hospital Prof. A. Posadas, Buenos Aires, Argentina

Summary:

None with intestinal manifestations of CD. There were no differences in age of AIH onset, histologic severity of the liver injury, nor enzimatics levels between the patients with positive and negatives CD serology. At the time of the diagnosis of CD blood tests were: %gammaglobulin = x 1.33 g/L, AST=x 48 U/L, ALT=x 63 U/L. All patients received immunosuppressive therapy. Patients with positive antibodies tests an intestinal biopsy was performed. Intestinal injury was confirmed in 3/5 children. The time between the CD and AIH diagnosis varied between 1 to 4 years. The patients were in remission with maintenance doses of immunosupression Free gluten diet was indicated in patients with intestinal histological CD. Conclusion: Although the sample is small, is to emphasize the value of making soon at the time of the diagnosis and periodically, the search for CD in patients with AIH independently of the time of evolution of the disease, the clinical, biochemical situation, and last of treatment. It is necessary to extend the sample in order to obtain strong conclusions on the association of these two diseases. (3 of them EMA/Autoimmune hepatitis (IAH) can coexist
with other immune diseases like celiac disease (CD). This association has not been clearly established at that moment and it is poorly understood.

Objective: The aim was to evaluate the CD by clinical, biochemical and histologic markers in patients with AIH. Material and methods: 42 children carrying of AIH type 1 (34 women; mean age 8.4 years, range 2 - 14) according to criteria of the International Autoimmune Hepatitis Group followed in two Units of Pediatric Gastroenterology and Hepatology in the last 8 years. Serum levels of total IgA were determined, anti tTG IgA by ELISA and/or EmA IgA by IFI, AST (NV: 8-33 U/L), ALT (NV: 5-40 U/L), gamma globulins (NV: 0.55-1.5g/dl). Patients with positive serological CD antibodies an intestinal biopsy was performed by endoscopy. The histologies findings were classified according Marsh classification. The CD diagnosis was made according to ESPGHAN criteria. Results: Selective IgA deficit was not detected in any patient. Five patients over 42 were FTG

P0688

Title:
Relative elevation of coagulation factors in severe cholestatic liver disease

Maria Magnusson 1, Björn Fischler 1, Jan Svensson 2, Pia Petrini 3, Sam Schulman 4, Antal Németh 1
1) Karolinska Institutet, CLINTEC, Division of Pediatrics, Stockholm, Sweden 2) Karolinska Institutet, Dept. of Clinical Sciences, Division of Clinical Chemistry, Stockholm, Sweden 3) Karolinska Institutet, Dept. of Woman and Child Health, Stockholm, Sweden 4) McMaster University, Dept of Medicine, Toronto, Canada

Summary:
Objective: To study the correlation between liver function and coagulation factors in cholestatic versus non-cholestatic liver disease with a subgroup analysis regarding severe versus mild cholestasis. Methods: 45 patients (age 2.8 mo-18.8 yrs) with chronic liver disease were included in the study. Samples for analysis of coagulation factor FII, FV, FVII, FIX, FX, prothrombin time, albumin, bilirubin and fasting serum bile acids were prospectively collected and charts were reviewed. PT(INR) and PELD score were calculated. The patients were considered cholestatic if the bile acid concentration was >100 µmol/L or if the ratio (ALT/upper normal reference value)/(Bilirubin/upper normal reference) was >1. Serum bile acid concentrations <200 µmol/L were defined as mild and > 200 µmol/L as severe cholestasis. In an in vitro study the analytical interference between bile acids and coagulation factors was investigated. Results: 28 patients had non-cholestatic and 17 cholestatic liver disease (5 mild, 12 severe). The patients with cholestatic liver disease had significantly lower FVII, albumin and PELD score compared to the patients with non-cholestatic liver disease (P= 0.037, P=0.009, P=0.005 respectively). A trend towards a lower level of FII, F IX and prothrombin time was noted in the cholestatic compared to the non-cholestatic group. Slightly elevated levels of FX and PT(INR) were noted in the cholestatic group (n.s.). Prothrombin time and FIX were significantly higher and PT(INR) lower in severe compared to mild cholestasis (P= 0.027, P= 0.020 and P= 0.027, respectively). A non-significant trend towards higher FII, FVII, FIX and lower PELD score was seen in severe compared to mild cholestasis. 25% of patients died or were transplanted within 6 months in the severe cholestasis group compared to 0% in the mild group and 4% in the non-cholestatic group. When rising concentrations of bile acids were added to control plasma samples, no changes were seen in the levels of FII, FV, FVII, FIX, PT(INR) or albumin. Conclusion: Despite better PELD-score and coagulation factor levels, the patients in the severe cholestasis group had a worse outcome. There was no analytical interference in vitro between coagulation factors and bile acids. Our study indicates that severe cholestasis upregulates synthesis of certain coagulation factors. This seems to render both PELD score and coagulation factor levels questionable prognostic markers in severe cholestatics.

P0689

Title:
ANALYSIS OF HISTOLOGIC FEATURES IN DIFERENCIAL DIAGNOSIS OF NEONATAL INTRAHEPATIC CHOLESTASIS

Maria Angela Bellomo-Brandão 1, Cecília AF Escanhoela 1, Luciana Meirelles 1, Gilda Porta 2, Gabriel Hessel 1
1) UNICAMP, Campinas, Brazil 2) USP, Sao Paulo, Brazil

Summary:
Objective- To compare Neonatal Intrahepatic Cholestasis (NIHC) liver histological features among groups of infectious, genetic-endocrine-metabolic and idiopathic etiologies. Patients and Methods - The study evaluated hepatic biopsies from 86 infants, from March 1982 to December 2005. The inclusion criteria consisted of: jaundice beginning at up to 3 months of age and hepatic biopsy during the first year of life. It had been evaluated: cholestasis, eosinophylis, giant cells, myeloid metaplasia, portal fibrosis, and siderosis (graded in absent, mild, moderated and severe) and septum. Significant difference was observed in relation to the variable myeloid metaplasia in Group 1 (Fisher’s exact test- p = 0.016). Conclusions - There were no significant differences among different etiologies of NIHC in relation to following histological features: cholestasis, eosinophylis, giant cells, portal fibrosis, siderosis and septum. Significant difference was observed in NIHC of infectious etiology, who presented myeloid metaplasia more severe than genetic-endocrine-metabolic and idiopathic etiologies.
ASSOCIATION AMONG AUTOIMMUNE HEPATITIS, ZINC DEFICIENCY AND ALOPECIA

Thalita Cremonesi Pereira 1, Maria Angela Bellomo-Brandão 1, Adriana M A De Tommaso 1, Gabriel Hessel 1
1) UNICAMP, Campinas, Brazil

Summary:
Objective: to relate three cases of alopecia in Autoimmune Hepatitis patients (type 1, type 2 and autoantibody negative) associated to Zinc deficiency and improvement after Zinc supplementation and normalization of Zinc plasmatic levels. Methods: Patient 1: A 13-year-old male diagnosed with type 1 autoimmune hepatitis and anti-smooth muscle antibody positive. Treatment included prednisone, vitamins A, C, D, E and complex B. After two months of treatment, the patient presented with alopecia, being diagnosed Zn deficiency with result of plasmatic zinc of 42 mcg/dL (reference value = 70-120 mcg/dL). At this moment, it was introduced Zn sulfate supplementation as well as Azathioprine. The first signals of improvement in alopecia, with appearance of new wire hair, were noticed 20 days after using Zn supplement. The plasmatic zinc only resulted in adequate level after two months of supplementation (70mcg/dl). Patient 2: A 6-year-old female diagnosed with type 2 autoimmune hepatitis and positive antibody to liver cytosol. At the beginning of treatment (4th day) using prednisone and azathioprine, the patient initiated an acute intense loses of hair. The azathioprine use was interrupted and the Zn supplementation was initiated. After two months of Zn supplementation, there was reversion of alopecia, although the plasmatic level of Zn has been 64mcg/dl (reference value = 70-120 mcg/dL). Azathioprine was prescribed again, without side effects. After three months plasmatic level of Zn was 101mcg/dL. Patient 3: A 16-year-old female presented with jaundice, choloria, increase in aminotransferase levels, alopecia (Figure 1) and plasmatic level of Zn of 52 mcg/dl (reference value = 70-120mcg/dL). Autoimmune hepatitis was diagnosed by the International Score, despite autoantibody negative. Zn supplementation (50 mg/day of elementary Zn) was initiated, concomitant with the administration of prednisone and AZA. After two months, reversion of alopecia was observed and plasmatic level of Zn was 95mcg/dL. Conclusion: Although alopecia may be attributed to autoimmune disease itself, evaluation of zinc supplementation in patients with autoimmune hepatitis or other chronic hepatic diseases is necessary due to deleterious effects of zinc deficiency and worsening of clinical picture.

CLINICAL AND LABORATORY EVALUATION OF 101 PATIENTS WITH NEONATAL INTRAHEPATIC CHOLESTASIS

Maria Angela Bellomo-Brandão 1, Paula D Andrade 1, Gilda Porta 2, Gabriel Hessel 1
1) UNICAMP, Campinas, Brazil 2) USP, Sao Paulo, Brazil

Summary:
Objective: to evaluate and compare clinical and laboratory data among Neonatal Intrahepatic Cholestasis (NIHC) groups of infectious, genetic-endocrine-metabolic and idiopathic etiologies. Patients and Methods - The study evaluated retrospectively clinical and laboratory data of 101 infants, from March 1982 to December 2005, 84 from the State University of Campinas Teaching Hospital (UNICAMP) and 17 from the Child’s Institute of the University of São Paulo (USP). The inclusion criteria consisted of: jaundice beginning at up to 3 months of age and hepatic biopsy during the first year of life. It had been evaluated: clinical findings (gender, age, birth weight, weight during the first medical visit, stature at birth, jaundice, acholia/hipochoilia, choloria, hepatomegaly and splenomegaly) and laboratorial (ALT = alanine aminotransferase, AST = aspartate aminotransferase, FA = fosfatase alkaline, GGT = gamaglutamiltransferase, INR = International Normalized Ratio, BD = direct bilirubin and albumin). Results - According to diagnosis, patients were classified into three groups: group 1 (infectious) n =24, group 2 (genetic-endocrine -metabolic) n= 21 and group 3 (idiopathic) n = 56. There were no significant differences in relation to the variables: age, gender, stature at birth, jaundice, acholia/hipochoilia, choloria, hepatomegaly, splenomegaly, AST, ALT, AlkaPhos, GGT, BD and albumin. Significant differences were observed in relation to the following variables: birth weight and weight during the first medical visit. Birth weight of group 1 was lower in relation group 3 (p=0,002). There was a statistically significant difference in relation to the INR, as the patients of the group 2 presented higher values in relation to groups 2 and 3, despite the median was still pointing out normal values. Conclusions - There were no significant differences in relation to age, gender, stature at birth, jaundice, acholia/hipochoilia, choloria, hepatomegaly, splenomegaly, AST, ALT, AlkaPhos, GGT, BD and albumin. Birth weight and the weight during the first medical visit were lower in the group with infectious etiology. In addition, a significant difference in INR reflected impaired coagulation of patients of the group of the genetic-endocrine-metabolic disease.

FREQUENCY OF CYTOMEGALOVIRUS IN NEONATAL INTRAHEPATIC CHOLESTASIS USING SEROLOGY, HISTOLOGY, IMMUNO-
HISTOCHEMISTRY AND POLYMERASE CHAIN REACTION

Maria Angela Bellomo-Brandão 1, Sandra C B Costa 1, Cecília A F Escanhoela 1, Jose Vassalo 1, Gilda Porta 2, Gabriel Hessel 1
1) UNICAMP, Campinas, Brazil 2) USP, São Paulo, Brazil

Summary:
Objective: Cytomegalovirus (CMV) is a common cause of neonatal intrahepatic cholestasis. Data on frequency present great variation, depending on the diagnostic method used (5% to 46%). The aims of this study were to determine CMV frequency by the following tests: serology, histological revision (searching for cytomegalic cells), immunohistochemistry and polymerase chain reaction (PCR); and to verify relation among these methods.

Methods: The study comprised 101 not consecutives infants, from March 1982 to December 2005, submitted to hepatic biopsy during investigation. Serology results were obtained from the patients' files and the other methods were performed on the liver in paraffin-embedded hepatic biopsies. It was calculated: frequency, sensibility, specificity, positive predictive value, negative predictive value and accuracy. Results: Frequency of positive results were: serology: 7/64 (11%); histological revision: 0/84; immunohistochemistry: 1/44 (2%) and PCR: 6/77 (8%). Only one patient had positive immunohistochemistry, who showed a positive PCR as well. Between PCR and serology was calculated: sensibility: 33.3%, specificity: 88.89%, positive predictive value: 28.57, negative predictive value: 90.91% and accuracy: 82.35%. Conclusions: Frequency of positive CMV varied among tests. Positive results of searching for cytomegalic cells and immunohistochemistry were 0 and 2% respectively. Serology presented highest positive frequency (11%). However, when compared to PCR, sensibility and positive predictive value of serology were low (33.3% and 28.57%). Even if there is a previous ethologic diagnosis of neonatal cholestasis, CMV should be searched. Diagnostic methods should be interpreted with caution, considering clinical features and epidemiology.

GALLSTONES IN CHILDREN WITH SICKLE CELL DISEASE FOLLOWED UP AT A BRAZILIAN HEMATOLOGY CENTER

Ana Paula dos Santos Gumiero 1, Maria Angela Bellomo-Brandão 1, Ana Cláudia dos Anjos 2, Elizete A L Da-Costa-Pinto 1
1) UNICAMP, Campinas, Brazil 2) Centro de Investigações Onco-Hematológicas Dr Domingos A Boldrini, Campinas, Brazil

Summary:
Objective - To describe the prevalence, and to describe and discuss the outcome of children with sickle cell disease complicated with gallstones followed up at a tertiary pediatric hematology center. Patients and methods - In a retrospective and descriptive study, 225 charts were reviewed and data regarding patient outcome were recorded. Results – The prevalence of cholelithiasis was 45% and half the patients were asymptomatic. The mean age at the time of diagnosis of cholelithiasis and surgical treatment was 12.5 years (SD = 5) and 14 years (SD = 5.4), respectively. The prevalence of cholelithiasis was higher in patients with SS and Sß thalassemia when compared to patients with SC disease (x2 = 0.001). In 50% of symptomatic patients, recurrent abdominal pain was the single or predominant symptom. Thirty-nine of 44 patients submitted to surgery reported symptom relief after the surgical procedure. Asymptomatic individuals submitted to surgery were followed up for 7 years (SD = 4.8), and none of them presented complications related to cholelithiasis during this period. Conclusions – The frequency of cholelithiasis in the study population was 45%. One-third of the patients were diagnosed before 10 years of age. Patients with the SS or Sß phenotype were at a higher risk for the development of cholelithiasis than patients with SC disease. About 50% of patients with gallstones were asymptomatic and most of them underwent surgery and did not present complications during a 7-year follow-up period. Abbreviations –SD: standard deviation; x2: chi-square test

Jejunal morphometry and absorption of D-xylose in rats with obstructive cholestasis

Fátima Regina S Reis 1, Patricia G L Speridião 1, Francy R S Patrício 1, Karine C Freitas 1, Renata Vigliar 1, Mauro B Morais 1
1) Division of Pediatrics Gastroenterology, Universidade Federal de São Paulo - Escola Paulista de Medicina, São Paulo, Brazil

Summary:
Objective: To assess the absorption of D-xylose in rats with obstructive cholestasis. Methods: 24 male Wistar rats with 21 days old were studied, which 12 were submitted to bile duct ligation (BDL group), and the other 12 animals, submitted only to a simulated surgical procedure, without bile duct ligation (control group). The animals were followed for 4 weeks and by the end of the study a 10% D-xylose solution was dispensed in proportion of 0.05g/100g of body weight and their urine was collected for a 5-hour period. Results: we observed that animals submitted to bile duct ligation presented dark urine and fecal acholia. The rats body weight at the beginning of the study did not presented statistically significant difference (p=0.661) between groups. Animals in BDL group presented mean food intake (302.5±35.9g) lower when compared to control group (356.9±21.9g), with statistically significant difference (p<0.001). BDL group presented median (percentile 25 and 75) of final body weight of 171.0g (162.6 - 176.0),
which was lower than control group, that presented 196.0g (192.6-203.7), with statistically significant difference (p<0.001). The mean urinary volume in control group was 1.77±0.91ml and in BDL group was 1.83±0.75ml (p=0.874). The percentage of recovered urinary D-xylose expressed by the median (percentiles 25 and 75) was 7.79% (5.8-8.6) to BDL group and 15.3% (9.4-24.0) to control group (p=0.048). BDL group and control group presented similar values for mucosal thickness (663.4±76.2 μm and 680.3±94.7 μm; p=0.665, respectively) and villus height (465.9±666.6 μm and 457.0±74.2 μm; p=0.782). The median crypt depth were, respectively, 199.6 μm and 217.3 μm (p=0.081). Conclusion: D-xylose urinary recovery was lower in rats with obstructive cholestasis that may be compatible with bacterial overgrowth in the proximal bowel since jejunal morphometry was normal.

P0696

**Title:**
Clinical Outcomes and Treatment Tolerability to Combination Pegylated Interferon and Ribavirin Therapy in Children with Hepatitis C

**Summary:**
Background: The prevalence of Hepatitis C infection in the United States is estimated to be 1.8%. In children less than 12 years of age the seroprevalence is 0.2% and in adolescents ages 12-19, 0.4%. Antiviral therapy can eradicate the infection in a large percentage of patients. Pegylated interferon plus ribavirin therapy has had promising results in children thus far. Further controlled studies on outcomes, dosing, and treatment tolerability are needed in children. Methods: An IRB-approved, retrospective chart review of 7 pediatric patients treated with combination therapy for chronic hepatitis C infection from January 2001 until February of 2008. Results: Seven patients were included in the study, age 13 to 17 years old (four males and three females). Five patients were diagnosed with hepatitis C genotype 1 and two with genotype 2. The mode of transmission was vertical in five patients and via intravenous drug use or blood transfusion in the remaining two. Treatment length ranged from 24 to 48 weeks. Pre-treatment viral load ranged from 27,379 IU/ml to 2,738,720 IU/ml. Five patients, 71%, had an early viral response. Three patients, 43%, had an end of treatment response. Each patient was followed in liver transplantation clinic every 4-6 weeks while undergoing therapy and side effects were monitored closely. 100% experienced fatigue and 57% depression or mood changes. 71% experienced neutropenia and 57% anemia. Dose reduction was only needed in one patient. There were no treatment drop-outs secondary to side effects. Conclusions: 1. Combination therapy of pegylated interferon and ribavirin seems to be an effective therapeutic modality as a treatment option for children with chronic hepatitis C. 2. Depression and mood changes are common side effects and children should be screened at each visit. 3. Neutropenia and anemia are common adverse reactions which may require a dose reduction. 4. Fatigue is a universal side effect of therapy, education and counseling for patients can improve compliance. 5. Compared to the adult population, children with chronic hepatitis C infection have greater tolerance to treatment with combination therapy and lower drop-out rates.

P0697

**Title:**
Advanced Liver Disease and Intervention in Cholesteryl Ester Storage Disease

**Summary:**
Introduction: Lysosomal acid lipase (LAL) is an essential enzyme involved in the hydrolysis of intracellular cholesteryl esters and triglycerides and is encoded by the 10-exon LIPA gene which maps to human chromosome 10q23.2-23.3. Wolman disease (WD) and cholesteryl ester storage disease (CESD) are two clinically distinct autosomal recessive disorders caused by different mutations in the LIPA gene. In both disorders, abnormal enzyme activity leads to the accumulation of substrate in various tissues. WD is a severe disorder with infantile-onset that is almost universally fatal by the first year of life. CESD is a milder disease typically presenting with hepatosplenomegaly, hypercholesterolemia, and hypertriglyceridemia. Case Report: We describe two cases of CESD in adolescent sisters. Patients presented to our center at ages 13 and 15 with hepatosplenomegaly, elevated liver enzymes, coagulopathy, portal hypertension, ascites, anemia and thrombocytopenia. Enzymatic LAL testing from skin fibroblasts showed no activity in Patient 2 and severely diminished activity in Patient 1. Liver biopsies from both patients revealed cirrhosis with foamy macrophages and small droplet steatosis in hepatocytes; bone marrow biopsies showed hypocellular marrow with foamy macrophages. Both girls had considerable abdominal distention and debilitating pain secondary to massive splenomegaly and ascites. Splenectomy and proximal spleno-renal shunts were performed in both patients with subsequent symptomatic relief and improvement in blood counts. The liver function remained stable in both without evidence of decompensation or encephalopathy despite portal systemic shunting. Diagnosis of CESD was confirmed by DNA sequence analysis of the 10 LIPA exons which indicated four novel genetic variants [IVS2 + 2 T=>A, G67A (G23R) and C866G (S289C) in cis; and G1192A (G342R) in trans], identical in both patients. Conclusion: These cases emphasize the potential severity of clinical presentations of CESD, generally associated
with a milder phenotype. Absence of detectable enzymatic activity in one of the patients further highlights the variable spectrum of CESD. DNA sequence analysis of both patients reveals novel variants of the LIPA gene. Splenectomy and shunting can be applied in select cases to address portal hypertension.

P0698

Title:
Hepatoblastoma in a Child with Autosomal Recessive Polycystic Kidney Disease

Nadia Ovchinsky 1, Mercedes Martinez 1, Adebowale Adeyemi 1, Steven Lobritto 1, Dominique Jan 1, Jean Emond 1
1) Columbia University College of Physicians and Surgeons, New York, USA

Summary:
Introduction: Autosomal Recessive Polycystic Kidney Disease (ARPKD) is a hereditary disorder which usually presents in infancy and is associated with variable degrees of hepatic involvement, typically demonstrated as hepatic fibrosis, cysts, and portal hypertension. To our knowledge, the association of ARPKD with hepatoblastoma has not been previously reported. Case Report: We present a case of a young girl who was diagnosed with ARPKD at the age of two months with preserved renal function, hepatosplenomegaly, and congenital hepatic fibrosis (CHF). Routine follow-up sonography at the age of 18 months demonstrated a hypechoic lesion in the liver. Core needle biopsy revealed well-differentiated fetal hepatoblastoma with no mitotic activity and fibrocystic portal tracts consistent with CHF. An MRI demonstrated a right hepatic mass in close proximity to the inferior vena cava and right renal vein as well as marked dilatation of intrahepatic biliary ducts consistent with Caroli's Syndrome. Surgical resection and transplantation were both considered as treatment options. Given preserved synthetic liver function and normal hepatic enzymes, the decision was made to proceed with an exploratory laparotomy and right hepatectomy. Histopathology revealed fetal epithelial type hepatoblastoma as a single lesion in the right lobe without evidence of vascular invasion and with negative margins of resection. The operation was well tolerated and no recurrence was noted through the first year of follow-up. Conclusion: This case highlights the association of ARPKD with CHF and Caroli's Syndrome. Although hepatoblastoma had previously been linked with Glomerulocystic Kidney Disease, this is the first known report of a potential association of ARPKD with hepatoblastoma.

P0699

Title:
Prognostic Value of Severe Cholestasis for Children with Intestinal Failure

Mercedes Martinez, MD 1, Kara Ann Ventura, MD 1, Nadia Ovchinsky, MD 1, Susan Brodlie, MD 1, Dominique Jan, MD 1, Steven Lobritto, MD 1
1) Columbia University College of Physician and Surgeons, New York, United States of America

Summary:
Objective: Intestinal Failure Associated Liver Disease (IFALD) remains a life-threatening complication of long term Parenteral Nutrition (PN). The goal of this study was to evaluate the role of severe cholestasis, a marker of IFALD, as a predictor of mortality and transplantation outcome in children with Intestinal Failure (IF). Methods: We retrospectively reviewed all records of patients (pts) enrolled in the Intestinal Rehabilitation (IR) Program at our Center. Among other variables, data collection included bilirubin levels at enrollment and final clinical outcomes [Rehabilitation, PN dependence without complications, transplantation, listing for transplantation, or death]. Severe cholestasis was defined as total bilirubin level ≥ 15 mg/dl. Pts' follow-up ranged 3-72 months. Results: 77 of 79 pts evaluated were eligible for this analysis. 62 pts (80.5%) had cholestasis at the time of presentation; mean total bilirubin level was 13.8 mg/dl (1.2-43.8) with mean direct bilirubin of 7.5 mg/dl (0.5-35.3). 17 pts (22%) met our definition of severe cholestasis; 5 (29%) were rehabilitated, 8 (47%) transplanted or listed for transplantation, and 4 (24%) died. In 60 pts with no or less severe cholestasis, 31 (51.7%) were rehabilitated, 16 (26.7%) are still PN dependent without complications, 11 (18.3%) were transplanted or listed for transplantation, and 2 (3.3%) died. Odds Ratio (OR) for mortality was 8.9 (95% CI 1.5 - 54.0) and OR for needing a transplant was 3.96 (95% CI 1.25-12.6) in the group with severe cholestasis as compared to the control group. Conclusion: This analysis suggests that severe cholestasis, defined as bilirubin level ≥ 15 mg/dl, at the time of referral to an Intestinal Rehabilitation center is a significant prognostic indicator for mortality and transplantation outcome in children with IF. Earlier referral to a multidisciplinary IR Center can possibly prevent or minimize IFALD and, therefore, improve clinical outcomes in children with IF.

P0700

Title:
Immunological response to hepatitis B vaccine.

Milagros Ma Alvarez García 1, Maria A Puig González 1, Ivonne Gómez Cordero 2, Vivian Alonso Ramos 2, Grisell Turró Grau 2, Teresita Díaz de
Villegas 1
1) Clínica Central Cira García, Ciudad Habana, Cuba 2) Centro de Inmunoensayo, Ciudad Habana, Cuba

Summary:
The HBV infection in Cuba is not of high prevalence in relation to other regions of the planet, nevertheless, the health workers are exposed to occupational exhibition risks. With the introduction of the vaccination in the Immunizations National Program, it is necessary to study the serological markers to compare the behavior infection / immunity in populations of risk and to know the impact of the vaccination in this personnel. 76 samples of health workers from Cira García Central Clinic were studied, to obtain the presence of the virus infection markers (HBsAg, Anti-HBc IgM, anti-HBc), and of immunity markers (anti-HBs).

P0701
Title:
Autoimmune hepatitis and liver failure in children
Miriam Cuarterolo 1, Susana López 1, María de Dávila 1, Adriana Roi 1, Oscar Imventarza 1, Mírta Ciocca 1
1) Hospital de Pediatría Juan P. Garrahan, Buenos Aires, Argentina

Summary:
50 ng/ml. After liver function normalization, CyA was discontinued and azathioprine (1.5 mg/kg/day) was added until remission, defined as normalization of aminotransferase levels, was achieved. Thereafter, prednisone was gradually reduced and azathioprine was kept at the same dosage. Patients were considered as non responders when LF persisted after 30 days under immunosuppression and were listed for TX. Results: AIH at diagnosis n: 43 Type 1 n (%) AUTOIMMUNE HEPATITIS AND LIVER FAILURE IN CHILDREN M. Cuarterolo, S. López, M. de Dávila, A. Roi, O Imventarza, M. Ciocca. Hospital de Pediatría Juan P. Garrahan, Buenos Aires, Argentina. Introduction: Autoimmune hepatitis (AIH) is a progressive inflammatory disease of the liver with an unknown etiology. Acute hepatitis is the most frequent mode of presentation but inspecific clinical features or spontaneous remission may lead to misdiagnosis and delayed treatment. Progression to cirrhosis or liver failure (LF) may occur. Objective: The aim of this retrospective study was to evaluate the outcome of the liver function under immunosuppression in children with AIH and LF. Methods: Between August 1997 and March 2007, 43 patients with AIH presenting with LF were included. At admission, patients were evaluated for liver transplantation (TX). Initially, they received prednisone at a dosage of 2 mg/kg/day (up to 60 mg/day) or prednisone 1 mg/kg/day (up to 40 mg/day) plus Cyclosporine Neoral (CyA), blood levels: 200  43 (100) * Age (years) 11.5 (3-15) Females/ Males n 34 / 9 Presentation (acute / chronic) 25 / 18 Jaundice n (%) 40 (93) Portal hypertension n (%) 28 (65) ** Prothrombin time(%) 36.87 ± 1.94 ** Albumin (g/L) 2.61 ± 0.10 ** Gammaglobulin (g/L) 3.44 ± 0.29 * Bilirubin mg/dL (NV: 0.4-1.4) 4.60 (1.4-35) * ALT IU/L (NV: 7-61) 691 (61-5481) * Onset to diagnosis (months) 5 (5 days–8 years) * Follow up (months) 18 (27 days–11 years) * median (range) ** mean ± SD Thirty nine patients (91%) achieved prothrombin time ≥ 50%, 37 in a median time of 30 days and 2 after 6 month of treatment. Three of them died because of infectious complications and one received TX (hepatopulmonary syndrome). Four patients did not recover liver function, one died (brain hemorrhage) and the other three were transplanted. Conclusions: Immunosuppressive therapy was effective and TX was avoided or delayed in the majority of the patients.

P0702
Title:
Clinical assessment of liver size in Saudi children
Mohammad I El Mouzan 1, Ahmad A Al Omer 3, Abdullah S Al Herbish 1, Abdullah A Al Salloum 1, Mansour M Qurashi 2
1) King Saud University, Riyadh, Saudi Arabia 2) Al Yamama Hospital, Riyadh, Saudi Arabia 3) Riyadh Medical Complex, the Children’s Hospital , Riyadh, Saudi Arabia

Summary:
Objective: Assessment of liver size in children is still an important part of physical examination and yet available data are quite old and mostly based on Western populations of children. The objective of this report is therefore, to establish the normal range of liver size in children form Saudi Arabia. Methods: the subjects for this study were randomly selected from a larger sample defined by multistage probability sampling of the Saudi population used for a nutritional survey. A standard technique of percussion of the upper and palpation of the lower border of the liver was used and performed by trained physicians. Results: The data on liver size were available for 18,112 healthy children (9,130 boys and 8,982 girls) from birth to 18 years of age, all were Saudi national. The maximum palpable liver size below the costal margin was 2.3 centimeter (cm). The median (±2SD) for liver span in cm for boys were as follow: at birth 4 (6.9/2.3), at 5 years 5.6 (9.8/3.2), at 10 years 7.3 (12.6/4.2), at 15 years 8.9 (15/5), and at 18 years 9.3 (16, 5/4). There was no difference in liver span between boys and girls up to 5 years of age. Thereafter, girls had generally lower spans than boys. Conclusion: By establishing the normal liver size in children, we hope that our data will assist physicians in their clinical practice and research.
Title: BILIARY ATRESIA IN TURKISH CHILDREN

Masallah Baran 1, Murat Cakir 1, Cigdem Arikan 1, Rasit Vural Yagci 1, Murat Kýlyc 2, Sema Aydogdu 1
1) Ege University Department of Pediatric Gastroenterology Hepatology and Nutrition, Izmir, Turkey 2) Ege University Department of Organ transplantation and Research Center, Izmir, Turkey

Summary:

Objective: Biliary atresia (BA) is the most common cause of end-stage liver disease in the infants and is the leading cause liver transplantation (LT) in most centers. In this study; we aimed to analyze the demographic and clinical features and outcomes of Turkish children with BA. We also analyze the prognostic factors and the effect of centralization on outcome. Methods: Demographic and clinical features, survival rates and prognostic factors in children with BA followed in Ege University, Organ Transplantation Center within the 10 years were analyzed. Mean ± SD follow-up was 23.4 ± 25.4 months. Results: BA was diagnosed in 59 children (44.1% female); and 56 (94.9%) were type 3. Median onset of jaundice and acholic stool was 7 and 15 days, respectively. Fifty-three children underwent Kasai portoenterostomy (PE) in median age of 70 days (range, 25-145) in 5 centers. 15 patients were underwent Kasai PE in Ege University, others were admitted after Kasai PE. One year and 4-year survival with native liver after Kasai PE was 54.5% and 27.7%, respectively. LT was needed in 31 children (23.1% of all LT) (mean age at the time of LT was 18 ± 10 months) (25 living and 6 cadaveric donor). Factors for the survival or needed for the LT were age at the time of Kasai PE and being followed in an organ transplantation center (7 patients underwent LT, 5 had compensate liver disease and 2 died). They underwent LT with older ages (28 ± 25.9 months versus 16.5 ± 12 months, p<0.05) and in good condition (without malnutrition and median PELD score was 21 versus 29, p<0.05). One year, 2 and 4 year survival after LT were 80.6, 77.4 and 70.7%, respectively. 4 year survival after 2002 was 81.6%. Conclusion: Early diagnosis and early surgical intervention is the major prognostic factors in infants with BA. LT is curative treatment modality when Kasai PE fails. Pre-transplant variables including presence of malnutrition, age at the time of LT and PELD score are important for post-transplant outcome. Therefore; management of these patients in an organ transplantation center or referring these patients in suitable condition and in optimal time to a transplantation center has a critical role for the outcome. Nevertheless, outcomes in Turkey are comparable to those reported elsewhere.

Title: INFECTIOUS COMPLICATIONS IN LIVER TRANSPLANT CANDIDATES

Murat Cakir 1, Masallah Baran 1, Cigdem Arikan 1, Hasan Ali Yuusekkaya 1, Rasit Vural Yagci 1, Sema Aydogdu 1
1) Ege University Department of Pediatric Gastroenterology Hepatology and Nutrition, Izmir, Turkey

Summary:

Objective: Infections are serious and often fatal complications in children with chronic liver disease. It may be fatal by itself or by worsening the liver functions and precipitating gastrointestinal bleeding, renal failure, or hepatic encephalopathy. They are the major cause of morbidity and mortality in liver transplanted children during the first 3 months after surgery. In this prospective study; we aimed to analyze (i) infections that occurred within one month prior to transplantation, (ii) identify factors associated with their occurrence, and (iii) the effect of infections during the pre-transplant period on post-transplant morbidity and mortality. Methods: The study included 40 consecutive children (3.9 ± 4.3 years, 19 male) who underwent liver transplantation between January 2006 and December 2007. 19 (47.5%) had prior abdominal surgery, 11 (27.5%) were in the intensive care unit and 4 (10%) were on mechanical ventilation. Biliary problems (57.5%) were the leading cause for LT. 11 of the patients (9 split) had cadaveric donors. Results: 27 culture proven infection episodes were recognized; with a cumulative incidence and incidence density of 67.5% and 25/1000 patient days, respectively. 4 year survival after 2002 was 81.6%. Conclusion: Early diagnosis and early surgical intervention is the major prognostic factors in infants with BA. LT is curative treatment modality when Kasai PE fails. Pre-transplant variables including presence of malnutrition, age at the time of LT and PELD score are important for post-transplant outcome. Therefore; management of these patients in an organ transplantation center or referring these patients in suitable condition and in optimal time to a transplantation center has a critical role for the outcome. Nevertheless, outcomes in Turkey are comparable to those reported elsewhere.

Title: LIVER TRANSPLANTATION FOR TOXIC HEPATITIS IN CHILDREN
Effects of Phytosomal Silybin (Siliphos) on Bile Duct Ligation-Induced Liver Fibrosis in Rats – Is Cirrhosis Really Reversible?

Tan N 1, Chia SM 2, Tai DCS 3, Cheng CL 4, Chiang LW 5, Tan H 6
1) Department of Paediatric Medicine, KK Women’s and Children’s Hospital, Singapore, Singapore 2) Singapore-MIT Alliance, E4-04-10, Singapore, Singapore 3) Institute of Bioengineering and Nanotechnology, A*STAR, Singapore, Singapore 4) Department of Pathology, National University Hospital, Singapore, Singapore 5) Department of Paediatric Surgery, KK Women’s and Children’s Hospital, Singapore, Singapore 6) Department of Physiology, Yong Loo Lin School of Medicine, Singapore, Singapore

Summary:
OBJECTIVE: Liver fibrosis is the endpoint of many liver diseases. Once deemed as irreversible, recent research has suggested otherwise. Silybin, the main active component of silymarin, is a promising drug that has been reported to reduce hepatic fibrosis in rat models. However, in most studies, silybin was given at a single early timepoint during the induction of the fibrosis model or in models that are documented to have possible spontaneous reversion of fibrosis. We investigated the effects of Siliphos on different degrees of liver fibrosis, in the attempt to see if there is any effect on prevention or reversal of liver fibrosis, especially in advanced fibrosis which is deemed irreversible. METHODS: Bile duct ligation (BDL) was performed on male Wistar rats. Treatment with Siliphos (equivalence of 50mg/kg/day of silybin) was commenced and rat livers were harvested according to schedule shown. Blood samples were collected for liver function test and fibrosis markers (TIMP-2, MMP-2, TGF-B1, thrombospondin-1(TSP-1) and plasmin). Degree of tissue fibrosis was assessed with conventional Trichrome Masson staining and light microscopy. Liver type 1 collagen was also quantified (Fibro-C-index) using second harmonic generation and two-photon microscopy. RESULTS: Silyphos acts to decrease TIMP-2 with a resultant increase in MMP-2. At least 4 weeks of treatment is required to produce an increase in plasmin levels with a resultant decrease in TGF-B1 and TSP-1 levels. Siliphos must be commenced early and the effect is only observed in early, but not with late fibrosis. However, an improvement in serum fibrosis markers does not improve the Fibro-C-index in the treated arms. CONCLUSION: Siliphos at the studied dose and duration is insufficient to retard or reverse type 1 collagen deposition, although there appears to be an improvement in the serum fibrosis markers in early stages. Fibro-C-index is a more accurate assessment of liver fibrosis. Future studies should look into optimizing the dose and duration of silymarin and perhaps study the drug as a co-therapy with other anti-fibrotic agents to restore TGF-B1 homeostasis and reverse liver fibrosis.
**Title:** Fibro-C-Index – A Standardized Quantification of Liver Fibrosis Using Second Harmonic Generation and Two-Photon Microscopy

Tai DCS 1, Tan N 2, Kang ACH 1, Cheng CL 4, Chia SM 5, Yu H 3
1) Institute of Bioengineering and Nanotechnology, A*STAR, Singapore, Singapore 2) Department of Paediatric Medicine, KK Women’s and Children’s Hospital, Singapore, Singapore 3) Department of Physiology, Yong Loo Lin School of Medicine, Singapore, Singapore 4) Department of Pathology, National University Hospital, Singapore, Singapore 5) Singapore-MIT Alliance, E4-04-10, Singapore, Singapore

**Summary:**

OBJECTIVE: Determining the extent of liver fibrosis has clinically been difficult due to the lack of a simple, objective method that can accurately quantify the amount of collagen in the diseased tissue. Second harmonic generation (SHG) microscopy has been shown to produce bright and robust signals from non-centrosymmetric fibrillar collagen. We designed a SHG system that can objectively quantify liver fibrosis in an animal model in an efficient, standardized and reproducible manner. In addition, we had developed a morphology-based quantification algorithm which identified and quantified the amount of collagen in tissue sample in a fully-automated manner. By combining SHG microscopy and our custom-developed algorithm, we present a potential solution for a standardized, fast, and accurate diagnostic tool in clinical practice as well as a potential means for early fibrosis detection for preventive medicine in the near future.

METHODS: Bile duct ligation (BDL) was performed on male Wistar rats, and livers were retrieved at weeks 2, 4 and 6 after the BDL. Tissue samples were imaged with SHG microscopy using a confocal microscope with a mode-lock Ti:Sapphire laser. Images acquired were later analyzed with a custom-developed algorithm, producing a collagen index (Fibro-C-index). Fibro-C-index was correlated with conventional light microscopy scoring done by a pair of pathologists after tissues were stained with Trichrome Masson. RESULTS: A linear correlation between Fibro-C-index and the amount of tissue type I collagen was obtained. Fibro-C-index results agree with pathologist scoring closely, which validates our quantification approach. Furthermore, using the Fibro-C-index, early fibrosis (score 1), undifferentiable by light microscopy, showed up to 400% difference in levels of collagen. CONCLUSION: Fibro-C-index provides sensitive measurement for liver fibrosis and accurately reflects the progression of liver fibrosis, especially in early stages. Fibrosis development is easily quantified using a stain-free technique and a fully-automated algorithm, and is shown to be a standardized index system.

---

**Title:** TGF-B1 Homeostasis is Important for Liver Fibrosis Resolution

Chia SM 1, Kuan FY 2, Tan N 3, Teo ST 2, Venkatraman L 1, Yu H 4
1) Singapore-MIT Alliance, E4-04-10, Singapore, Singapore 2) Department of Physiology, National University of Singapore, Singapore, Singapore 3) Department of Paediatric Medicine, KK Women’s and Children’s Hospital, Singapore, Singapore 4) Institute of Bioengineering and Nanotechnology, A*STAR, Singapore, Singapore

**Summary:**

Transforming Growth Factor-B1 (TGF-B1) is one of the most important mediators of the liver fibrosis and cirrhosis, and has been a major target for therapy (Gressner et al., 2002). Level of the TGF-B1 must be tightly regulated in normal liver but is out of control in fibrotic livers (Bataller et al., 2005).

We have established an in vitro cell culture model for studying liver fibrosis and resolution. We have also demonstrated that complete removal of TGF-B1 has limited therapeutic efficacy, likely due to the necessity of maintaining a low level of TGF-B1 (0.1±0.05ng/mL) to support hepatocyte functions, which in turn is important for the homeostatic control of TGF-B1 level.

Evidences have shown that TGF-B1 homeostasis is tightly regulated in normal or fibrotic livers by different mechanisms involving the 2 key activators of TGF-B1 (namely plasmin and thrombospondin-1). We have identified the molecular components and pathways involved in these mechanisms and constructed quantitative models to predict how changes in one component would alter the other pathways; and to decipher the key switches in terminating liver fibrosis and initiating liver fibrosis resolution for normal regeneration of liver.

Such quantitative understanding and interventions of the TGF-B1 functions in liver fibrosis and resolution will lead to new ways of treating liver cirrhosis which is a leading cause of death in Asia.

Acknowledgements: This work is supported in part by the Singapore-MIT Alliance Computational and Systems Biology Flagship Project funding, ExxonMobil-NUS Clinician Fellowship, National Medical Research Council; Biomedical Research Council and Ministry of Education of Singapore.
Neonatal Liver Failure – A Tertiary Centre Experience

Naresh P Shanmugam 1, Marion M Aw 1, Natalie Bab 1, Anil Dhawan 1
1) Paediatric Liver Centre, King’s College Hospital, London, UK.

Summary:
Aim: To determine the aetiology, presentation, management and outcome of neonates (< 28 days) referred for acute liver failure (ALF) over a period of 13 years (1990 to 2002). (Data on patients with liver failure after 2002 were not included as they are part of a prospective multi-centre study on Paediatric ALF). Method: Retrospective review of the case records of neonates presenting with acute liver failure (ALF), (defined as, INR>2 not correctable by i.v vitamin K, along with biochemical evidence of liver dysfunction). Results: 42 neonates (20, males), 7 preterm, median (range) gestation of 35(31-36) weeks, presented at a median age of 2(1-17) days and was diagnosed with ALF at a median age of 8(1-25) days. Median (range) peak INR, AST and bilirubin levels were 5.6(2.1-15), 285(42-13,860) U/L and 307(17-1079) umol/L respectively. Presenting features included: jaundice (49%), neurological manifestations (lethargy/fits) (30%), fever (8%), gastrointestinal bleeding (5%), abdominal distension (5%) and rash (3%). Mode of initial presentation made no difference with regards to their survival (P=0.39). The aetiology of ALF was neonatal haemochromatosis 18(42%), disseminated herpes simplex(HS) infection 7(16%), haemophagocytic lymphohistiocytosis 5(12%), galactosaemia 3, shock/sepsis 2, indeterminate 2 and 1 each with tyrosinaemia, Ornithine transcarbamylase (OTC) deficiency, congenital hypothyroidism, transplacental paracetamol toxicity and ECHO virus. Medical management included disease specific treatment but patients with INR > 4 and treatable aetiology by liver transplantation were listed. 7 died [disseminated HS 6, OTC deficiency 1, median survival 3(1-10) days (P<0.018), after admission to our centre] before the option of liver transplantation could be considered. 12 of the 20 listed patients received allograft, 5 died [median 30(range 5–39) days after listing] while awaiting suitable liver and 3 were taken off the list as they improved. Of the 15 neonates who were not listed 5 died at a median age of 5(3-17) days, 10 were alive after a median follow-up of 35(9-96) months. Of the 12 infants who had liver transplantation, 5 died at a median of 10(1-23) days after transplant and 7 were alive after a median of 117(91-198) months of follow-up. Conclusion: Etiological diagnosis could be made in 95 % of patients. Acute liver failure in neonates carries high mortality and even with the option of liver transplantation the overall survival is 48%.

P0710

Title:
Selective Use of Endoscopic Retrograde Cholangiopancreatography In Diagnosis Of Biliary Atresia In Infants Younger Than 100 Days

Naresh P Shanmugam 1, Phillip M Harrison 2, Praveen Peddu 3, Alex P Knisely 2, Mark Davenport 1, Nedim Hadzic 1
1) Paediatric Liver Centre, King’s College Hospital, London, UK. 2) Institute of Liver Studies, King’s College Hospital, London, UK. 3) Department of Radiology, King’s College Hospital, London, UK.

Summary:
Aim: To investigate the role and safety of endoscopic retrograde cholangiopancreatography (ERCP) in diagnosing biliary atresia (BA) in infants with prolonged conjugated jaundice, where standard clinical work up including laboratory tests, ultrasound and liver biopsy have failed to produce a definite diagnosis. Patients and Methods: We have retrospectively analysed our database for infants younger than 100 days who underwent ERCP for diagnosis of BA from June 1997 to May 2007. Results: Over the observation period amongst 2079 infants investigated for prolonged jaundice, 224 (10.7%) were diagnosed with BA. ERCP was performed in 48 (2.3%) infants (24 male; median age: 58.5 (range, 19–98) days; median weight: 4 (range, 2.07- 5.3) kg as preliminary investigations remained equivocal. These included infants with acholic stools and associated PIZZ alpha-1-antitrypsin deficiency (n=3), bile salt export pump deficiency (n=3) and Alagille syndrome (n=1). Forty-seven infants had liver biopsy, while the remaining one did not due to haemophilia C. Liver histology showed non-sclerotic changes (n = 19, 40%), giant cell hepatitis (n = 12, 26%), “large bile duct obstruction” (n = 9, 19%) and mixed cholestatic and hepatic features (n = 7, 15%). ERCP was technically unsuccessful in 3 (6%) infants who were eventually diagnosed with BA on laparotomy. Of the remaining 45 children, ERCP demonstrated intrahepatic biliary tree in 20 (42%), while 25 (52%) proceeded to exploratory laparotomy. Of those, BA was confirmed macroscopically and histologically in 22 (46%). Three remaining infants who underwent laparotomy, but not Kasai portoenterostomy had CMV hepatitis, neonatal cholestasis and non-syndromic extrahepatic bile duct hypoplasia. After ERCP, 3 infants (6%) had slight intra abdominal extravasation of the contrast, but none developed clinical pancreatitis or peritonitis. The diagnostic value of ERCP in diagnosis of BA was assessed using receiver operating characteristic (ROC) curve analysis and area under curve (AUC) of 0.94 (95% CI 0.85-1.02; p<0.001) was found with the positive predictive value of 88% and negative predictive value of 100%. Conclusion: ERCP has avoided exploratory laparotomy in 20 (45%) patients. It is a safe procedure for diagnosing BA even in the smallest children with acceptable morbidity. In specialized centres this procedure could prevent unnecessary surgery in majority of infants with prolonged jaundice and ambiguous initial clinical findings.

P0711

Title:
Budd Chiari Syndrome in Children: 25 years single tertiary centre experience

Natalie Bab 1, Roshni Vara 1, John Karani 1, Nigel Heaton 1, Raj Patel 1, Anil Dhawan 1
1) Kings College Hospital, London, UK

Summary:
Aims: To study the aetiology, management and outcome of BCS, a very rare disorder in children, in a single centre. Methods: A retrospective review of children diagnosed with BCS between 1982-2007. Results: 13 children (6 male), median age (range) at presentation 10.68 years (1.62 to 16.31) presented with hepatosplenomegaly (13), ascites (13), jaundice (7), lethargy (7), gastrointestinal bleeding (2), and acute liver failure (ALF) (1). Laboratory investigations showed: median (range) INR 1.44 (1.0-3.6), bilirubin 25umol/L (5-185umol/L), AST 53 iu/L (8-510 iu/L), albumin 40 (25-51), serum sodium 138mmol/L (121-146mmol/L), haemoglobin 11.0g/dl (7.2-13.8) and platelet count 242x109/L (29-373). Investigations included US (12), CT (8) and angiography (12) which was the most important test to confirm site of obstruction. US was diagnostic in 11 (85%), whilst CT in 1 and liver biopsy (LB) and angiography in 1. Detailed procoagulant studies were carried out as and when they became available. Procoagulant states were identified in 7; PNH(3), antiphospholipid syndrome (2), factor V Leiden heterozygosity (1) and protein C deficiency (1). Sera was available for allele-specific polymerase chain reaction for JAK2 V617F mutation (for myelodysplasia) in 5 patients, but was negative in all. Sites of occlusion were main hepatic veins (HV) in 5 (38%), main HV with partial inferior vena cava (IVC) occlusion in 3 (23%), small HV in 3 (23%), IVC in 2 (15%) and co-existing portal vein thrombosis in 2. LB showed features of venous outflow obstruction in 9. Acute management included diuretics, anticoagulation, paracentesis and endoscopy. Definitive management included liver transplantation (LT) in 4; indications being ALF in 2 and decompensated cirrhosis in 2, 4 had surgical shunts, 2 had percutaneous venous dilatation and 1 had TIPS, followed by matched unrelated BMT for PNH. 1 is stable without any intervention and 1 died immediately after presentation with PNH in 1995. 5 died, median age 9.85 years (range 6.09-14.98 years), causes were; multisystem complications of PNH(1), hepatopulmonary syndrome (1), post-LT sepsis (1), multisystem failure (1) and an unexplained neurologic event 3 years after LT. 8 are alive and well at their last follow up, median 2.53 years (range 0.66-6.57 years). Conclusion: The management and outcome of this rare condition continues to be heterogeneous and carries a high mortality.

P0712

Title:
IL-12 and IL-18 cytokine receptors in Type I Autoimmune Hepatitis

Nazarena E Ferreyra Solari 1, Maria E Inzaugarat 1, Cristina Galoppo 2, Carol V Lezama 2, Miriam L Quarterolo 3, Alejandra C Cherñavsky 1
1) Hospital de Clínicas “José de San Martín”, Buenos Aires, Argentina 2) Hospital de niños “Dr. Ricardo Gutierrez”, Buenos Aires, Argentina 3) Hospital de Pediatria Juan P.Garrahan, Buenos Aires, Argentina

Summary:
Objective: To test probable aberrations in the expression of IL-12 and IL-18 receptors (R) on circulating T cells in type I autoimmune hepatitis (AIH-I) at presentation and during remission on immunosuppression. Methods: Thirteen AIH-I patients at disease presentation [10F/3M, 10 years (4-17), all with histological features of interface hepatitis and ANA/SMA+]; ten patients during remission (AIH-IR) [8F/2M, 10 years (8-19), median follow up time: 2.5 years (1-5), all with normal transaminase levels], and ten age matched healthy subjects as controls (Co). Mononuclear cells were obtained from heparinised peripheral blood by Ficoll-Hypaque gradient to perform three-colour flow-cytometry analysis. Cytokine receptors were detected by using PE-conjugated anti-α1 subunit of IL-12 receptor (IL-12Rα1) and anti-α subunit of IL-18 receptor (IL-18Rα) monoclonal antibodies. To investigate CD4 and CD8 memory subpopulations, mononuclear cells were further analyzed by co-staining with either PercP-conjugated anti-CD4 or anti-CD8 and FITC-conjugated anti-CD45RO. Statistical analysis was performed by Student t-test. Results: Among memory subpopulations, only LTCD4+CD45RO+ cells were increased in Co (p= 0.001 vs. AIH-I; p= 0.01 vs. AIH-IR). Frequencies of positive cells are shown in the table as indicated. AIH-I patients showed an increased frequency of IL-12Rα1+ and IL-18Rα+ on both LTCD4+ and LTCD8+ subpopulations. The expression of cytokine receptors was evaluated on LTCD4+ and CD8+ memory subpopulations. AIH-I patients showed increased frequencies of both receptors in LTCD4+CD45RO+ and CD8+CD45RO+ subpopulations compared with Co and AIH-IR. No differences were found in LT18Rα and IL-12Rα expression between AIH-IR and C within the CD4+ and CD8+ memory subpopulations. Conclusion: Our results point to an enhanced recruitment of memory T cells expressing receptors for regulatory cytokines into the liver of AIH-I patients. Triggering of hepatic injury might occur by development of a fully functional Th1 phenotype in the inflamed liver. Aberrant expression of cytokine receptors on circulating T cell subpopulations in AIH-I revert to control values by immunosuppressive treatment. # AIH-I vs. AIH-IR; * AIH-I vs. C

P0713

Title:
GLP 1R is present in Human hepatoma cells and signals through the MAP kinase pathway
Nitika Arora Gupta 1, Jamie Mells 2, Neeraj Saxena 2, Frank Anania 2
1) Department of Pediatrics, Emory University, Atlanta, GA, USA 2) Department of Internal Medicine, Emory University, Atlanta, GA, USA

Summary:
Introduction: Glucagon like peptide (GLP) is a peptide secreted from the L cells of the small intestine and binds to the glucagon like receptor (GLP1R). It is an incretin and stimulates glucose-mediated insulin production by pancreatic beta cells. GLP analogues are being tried as a therapy for diabetes and metabolic syndrome. Aim: To identify the presence of the GLP 1R in human liver cells and delineate the cell signaling pathways
Methods: Human hepatoma cells HuH 7 were cultured. RNA was extracted using the trizol chloroform method by the standard protocol. RT PCR was performed using primers designed for GLP 1R. Cells were also plated on collagen coated plates and treated with GLP and Exendin 4 and cell surface expression analysis for the presence of the receptor was done using the TD20/20 luminometer using the GLP 1R antibody. Protein was extracted from the cells treated with GLP and Exendin 4 and western blots were performed. The above experiments were repeated with HuH 7 cells transfected with siRNA against GLP1R. Results: GLP 1R was detected in the HuH7 cells by RTPCR. This was attenuated by cells transfected with siRNA to the GLP1R. The presence of the receptor was further confirmed by the TD20/20 luminometer cell surface expression analysis which showed 722 units for untreated HUH7 cells with 105 units for the no primary antibody control. This was statistically significant. Treatment of HUH7 cells with GLP showed a decrease in cell surface expression (242 Units) indicating receptor internalization. PKA assay showed increased activity on treatment of HUH 7 cells with Exendin 4 and GLP. Western blots showed up regulation of the phosphorylation of the erk pathway and no increase in the PI3 kinase pathway on treatment of the cells with GLP and Exendin 4. Conclusion: Glucagon like receptor is present in human liver cells and signals through the MAP kinase pathway up regulating the phosphorylation of erk and does not increase the PI3 kinase phosphorylation. Due to its role in the metabolic syndrome and insulin up regulation this provides an important target for therapy of fatty liver disease.

P0714

Title:
Growth, Nutritional status and Insulin-like Growth Factor-1(IGF-1) in Children with Postoperative Biliary Atresia: a Cross-Sectional Study

Nopaorn Phavichitr 1, Apiradee Theamboonlers 2, Yong Poovorawan 2
1) Department of Pediatrics, Phramongkutklao Hospital, Bangkok, Thailand 2) Center of Excellence in Clinical Virology, Department of Pediatrics, Faculty of Medicine, Chulalongkorn University and Hospital, Bangkok, Thailand

Summary:
Background/Objective: Biliary atresia is the leading cause of chronic infantile cholestastis which eventually leads to cirrhosis. Re-establishment of biliary drainage by Kasai portoenterostomy and liver transplantation for end-stage liver disease has favorably altered the clinical outcome. However, growth failure, one of the major complications of chronic liver disease, remains a major problem. We aim to evaluate growth, nutritional status and serum growth factor IGF-1 in children with biliary atresia after the Kasai operation and to compare these measures between the groups of successful and unsuccessful operation. Methods: Fifty-four children with postoperative biliary atresia were evaluated for their clinical outcome, height, biochemistry data related nutritional status and serum IGF-1. The height and serum IGF-1 was expressed in standard deviation score (SDS) to minimize the influence of age. Results: 44.4% of the enrolled patients had unsuccessful operation with persistent jaundice. The mean age between both groups was not different (42.0 and 49.9 months, p=0.458). In jaundice-free patients, hematocrit, serum albumin, calcium and phosphorus were normal and significantly higher. The height SDS and serum IGF-1 SDS in the successful Kasai group were in normal range and significantly higher (height SDS 0.2+/-1.0 vs -0.9+/-1.2, p<0.01 and IGF-1 SDS 0.5+/-2.2 vs -1.3+/-1.0, p<0.01). IGF-1 SDS in the failed Kasai group was less than -1. Conclusion: Children with good outcome of postoperative biliary atresia had better growth, better nutritional status and higher serum IGF-1 levels when compared to those with unsuccessful operation.

P0715

Title:
Berardinelli-Seip syndrome, congenital lipodystrophy and steatohepatitis in a 3 months toddler

Nora Luz Yepes P 1, Verónica Abad L 1, Alejandro Velásquez 1, Natali Gallego A 1, Jorge Rivera E 1, María Elsy Sepúlveda H 1
1) Hospital Pablo Tobón Uribe , Medellín, Colombia

Summary:
Objective: Inform the clinical case of a 3 months old infant with the diagnosis of Berardinelli-Seip syndrome, congenital lipodystrophy (BSCL), and describe the clinical features, laboratory findings and the histopathology correlation with precocious steatohepatitis and possible palliative treatments. Methods: Clinical case. Results: Three months old black boy, first son, consanguinity of second grade. with liver and spleen enlargement, gross face with prominent forehead, prominent muscle in his hips and extremities. TSH, T3 and T4 within normal range. AST: 185 U/L (5-34), ALT: 98
Joubert Syndrome (JS) is an autosomal recessive multisystem condition characterized by specific cerebellar and brainstem malformation, hypotonia, oligophrenia, and eye findings such as coloboma and retinal changes (1). Congenital hepatic fibrosis (CHF) and renal anomalies have been described in JS and related disorders (1,2,3). Method: Here we report two children with JS, diagnosed clinically and by cranial magnetic resonance imaging who subsequently presented with elevated liver enzymes for over a year. Result: Both patients had no evidence of hepatosplenomegaly, portal hypertension or overt renal disease except for hypertension in one. Alanine aminotransferase and gamma glutamyl transpeptidase ranged from 179-367 U/L and 273-476 U/L in the first and 81 U/L to 485 U/L and 249 to 491 U/L in the second patient respectively. Total bilirubin, coagulation profile and albumin were normal. Laboratory and radiological studies excluded infectious, metabolic and anatomic causes for abnormal liver functions. Sonographic examination of hepatoportal and renal systems were normal. Both patients underwent a percutaneous liver biopsy. Histologic findings in both were similar: all portal areas were narrow and elongated with periportal fibrosis and hepatocyte trapping. The portal areas contained very small, slit like portal veins and minimal lymphocytic infiltration. Despite evidence for focal ductular reaction and cholestasis, neither biopsy showed changes of ductal plate malformation characteristic of CHF. Conclusion: Portal venopathy was the most striking feature in both liver biopsies and findings of CHF were absent. JS may be associated with a spectrum of liver involvement not restricted to CHF. Portal venopathy is a newly described abnormality in JS, which may be associated with the development of nodular regenerative hyperplasia and portal hypertension.
Title: Childhood portal hypertension: a single-centre review from Malaysia

Pei-Fan Chai 1, Hsin-Wei Chow 1, Christopher CM Boey 1, Way-Seah Lee 1
1) Department of Paediatrics, University of Malaya Medical Centre, Kuala Lumpur, Malaysia

Summary: Introduction: Portal hypertension, characterised by a persistent elevation of the portal venous pressure, is often diagnosed by a combination of clinical and radiological parameters due to the invasive nature of direct measurement of the portal venous pressure. Little is known about the cause and outcome of childhood portal hypertension from Malaysia. The aims of the present study are to determine the demographic pattern, clinical presentation and outcome of portal hypertension in Malaysian children. Patients and method: A retrospective review of all children newly diagnosed with portal hypertension referred to Department of Paediatrics, University Malaya Medical Centre, Malaysia, from January 2003 to December 2007. Result: A total of 35 patients with portal hypertension (18 females, median age at onset of symptoms 4.6 years; range 0.2 to 15.7 years) were referred during the study period. Of these, 24 (69%) patients had liver cirrhosis (biliary atresia, n=13; cryptogenic liver cirrhosis, n=6; miscellaneous diagnoses, n=5). Portal vein obstruction was diagnosed in 11 patients (31%). The modes of presentation included variceal bleeding (n=14, 40%), incidental finding during routine follow up for primary liver disease (n=10, 29%) and splenomegaly with or without hypersplenism (n=11, 31%). Eleven of the 14 patients who presented with variceal bleed required either variceal ligation (EVL, n=8) or sclerotherapy (EST, n=3). Of these, 6 had recurrence of bleeding. All the remaining 21 patients who had no variceal bleed at presentation were found to have esophageal varices at screening endoscopy. Thirteen of these with significant varices had EVL (n=10) or EST (n=3). Of these 13 patients, 8 had subsequent variceal bleed. A total of 4 patients had surgery (3 mesocaval shunt, 1 distal splenorenal shunt). Three of the 4 patients had shunt occlusion within 2 years of surgery. Two patients (6%) had liver transplant for the primary liver disease. Only 1 of the 5 patients (14%) who died could be attributed directly to bleeding oesophageal varices. The remaining causes of death were end-stage liver failure (n=2), intracranial bleed (n=1), chronic rejection complicating liver transplant (n=1). Conclusion: Childhood portal hypertension has significant morbidity and mortality. EVL and EST are effective methods to manage oesophageal varices despite high recurrence of variceal bleeding.

Title: Association Between the Uridine Diphosphate-Glucuronosyl Transferase Gene and Prolonged Unconjugated Hyperbilirubinemia in Taiwanese Breast-fed Infants

Pi Feng Chang 1, Yu-Cheng Lin 1, Kevin Liu 1, Shu-Jen Yeh 1
1) Department of Pediatrics, Far Eastern Memorial Hospital, Taipei, Taiwan

Summary: Objective: Prolonged jaundice in nursing infants is very common in Asians. The aim of this study was to investigate whether the genetic mutation in uridine diphosphate-glucuronosyl transferase 1A1 (UGT1A1) gene of breast-fed infants is a contributory factor to prolonged neonatal jaundice. Methods: Thirty six breast-fed full term Taiwanese infants with prolonged jaundice beyond 14 days old were enrolled in this study. Another 90 breast-fed neonates without prolonged jaundice were selected as controls. Prolonged jaundice was defined as serum total bilirubin concentrations > 150 mmol/L (8.77 mg/dL) beyond 14 days old or > 100 mmol/L (5.85 mg/dL) beyond 28 days old. Except for the jaundice, these infants did not show any evidence of hemolytic anemia, liver dysfunction, inborn errors of metabolism or hypothyroidism. These 36 infants were followed up in our hospital. Blood was collected for the analysis of the UGT1A1 gene. The PCR-restriction fragment length polymorphism (RFLP) method was applied to detect the known variant sites in the UGT1A1 gene in Taiwanese, which included the promoter area, nucleotides 211, 686, 1091, and 1456. We analyzed the risk factors for significant hyperbilirubinemia using univariate logistic regression models. Results: Thirty one breast-fed infants with prolonged jaundice had at least one mutation of the UGT1A1 gene. We did not detect any homozygous A(TA)7TAA mutation in these neonates. The breast-fed neonates who carry the 211 variants in the UGT1A1 gene increased the risk of developing prolonged jaundice (odds ratio 9.273, 95% CI of 3.791-22.683; p < 0.001). The male breast-fed infants are at higher risk to develop hyperbilirubinemia (odds ratio 3.922, 95% CI of 1.656-9.285; p = 0.002). After cessation of breast feeding, the serum bilirubin level decreased gradually in these prolonged jaundice infants. The concentration of serum bilirubin lowered back within normal range and jaundice disappeared visually beyond 4 months of age. Conclusion: Taiwanese male breast-fed neonates who carry the 211 variants in the UGT1A1 gene were found to have high risk for developing prolonged unconjugated hyperbilirubinemia.
Discriminant Function Analysis for Nonalcoholic Fatty Liver Disease, Obesity and Healthy Controls

Aldona Wierzbicka 1, Piotr Socha 2, Małgorzata Sycewiska 3, Agnieszka Bakula 2, Jerzy Socha 2, Mieczyslaw Litwin 4
1) Department of Laboratory Diagnostics, CMHI, Warsaw, Poland 2) Department of Gastroenterology, Hepatology and Immunology, CMHI, Warsaw, Poland 3) Department of Pediatric Rehabilitation, CMHI, Warsaw, Poland 4) Department of Nephrology and Hypertension, CMHI, Warsaw, Poland

Summary:
Introduction: Several risk factors related to the pathomechanisms of NAFLD in children have been described and analyzed separately or in small groups, but the significance of all these factors has not been tested in statistical fit models in relation to obesity alone and healthy controls. The aim of the study was to determine multiple risk factors that discriminate between childhood NAFLD, obesity and healthy controls. Methods: We analyzed 3 age matched groups of children: 83 children with NAFLD (aged 11.58 ± 3.96 years (mean ± SD)) diagnosed by elevated ALT and bright liver on ultrasound, 58 children with obesity (aged 15.13 ± 2.95 years (mean ± SD)) and 64 controls (aged 13.95 ± 3.45 years (mean ± SD)). 20 risk factors were assessed in these groups using the discriminant analysis: (Z-score of BMI, lipid parameters, insulin resistance parameters, lipid peroxides, antioxidants) to determine which of them discriminate these three groups. Results: The stepwise procedure was performed to build a model for discriminant analysis. As a result the classification functions were calculated with variables deciding about the differences between the groups. The percent of cases that are correctly classified in each group by the current classification functions was calculated. Finally, the following parameters occurred to discriminate significantly among three groups (ordered according to the discriminative power): GSH, GPx, lipid peroxides, BMI-Z-score, ApoA1, vit. E, total cholesterol. Glucose, insulin and proinsulin conc., HOMA-IR as indicators of insulin resistance were not statistically significant discriminators. The percentage of classification accuracy for NAFLD was 66%, which is relatively high. Conclusion: The parameters of antioxidant defense and lipid peroxidation seem to be the major determinants of fatty liver disease in children. BMI, apo A1, vit. E and cholesterol contribute significantly to discriminate NAFLD from obesity and healthy controls whereas insulin resistance parameters do not reach significant classification accuracy.

Zinc vs. penicillamine treatment in pediatric Wilson disease and liver presentation

Wojciech Janczyk 1, Maciej Dadalski 1, Hartmut Schmidt 2, Roderick Houwen 3, Piotr Socha 1
1) Department Gastroenterology, Hepatology and Immunology, CMHI, Warsaw, Poland 2) Transplantationshepatologie, Universitätsklinikum Münster, Münster, Germany 3) Department of Pediatric Gastroenterology, University Medical Center, Utrecht, The Netherlands

Summary:
There are several pharmacotherapies for Wilson’s disease, however neither has been compared to each other in randomized controlled trials. Zinc therapy seems to be effective in neurological presentation of Wilson disease but there are very limited data on its effects in patients presenting with hepatic symptoms, and only in retrospective studies. The aim of the study was therefore to compare effects of treatment with Zinc vs. penicillamine in a retrospective analysis of pediatric patients with Wilson disease and liver presentation. We analyzed patients before and after one year of treatment (14 pts. on Zinc aged 11.7±3.3 y and 13 pts. on penicillamine aged 13.4±3.2y) in whom the therapy was not changed during the observation period. Only patients with mild liver disease were included in this study (acute and fulminant liver failure excluded). Wilson disease was diagnosed according to the Ferenci et al. scoring system and the diagnosis was confirmed in almost all pts by mutation analysis. Results: Before initiation of treatment ALT levels in the Zinc patients were 114±105 IU/L (mean±SD) and in the penicillamine patients were 197±120 IU/L. We did not find any difference at baseline in ALT, AST, INR and GGTP between the groups. After one year of treatment there was no difference in ALT levels between the Zinc and penicillamine group (resp. 56±22 IU/L and 50±18 IU/L). However the fall in ALT level was significant (P<0.05) in the penicillamine treatment group but not in the zinc treatment group. AST activity decreased significantly in both groups. Conclusion: Penicillamine induces a larger fall in ALT level than zinc therapy and might therefore be more effective in children with Wilson disease and liver presentation.

Biliary atresia in patients with partial trisomy of chromosome 11q – 2 case reports

Piotr Czubkowski 1, Joanna Pawlowska 1, Irena Jankowska 1, Mikołaj Teisseyre 1, Maria Gajdulewicz 1, Jerzy Socha 1
1) The Children’s Memorial Health Institute, Warsaw, Poland

Summary:
INTRODUCTION: The embryonic form of biliary atresia (BA) occurs in 10-20% of cases and is related with worse prognosis. Obliteration of bile ducts is a part of whole phenotype characterized also by existance of other congenital abnormalities. Recently there is a growing evidence on the role genetic factors in pathogenesis of BA. METHODS: We present two cases of children with BA diagnosis established among other congenital anomalies. Cytogenetic study from peripheral blood lymphocytes (GTT banding) was performed. RESULTS: The first child was 3 weeks old female born at term with birthweight 2700g, presented with cholestasis and acholic stools since birth, polysplenia, cardiac anomalies - PS, ASD, PDA, Pierre-Robin syndrome, microcephaly and hypotelorism. The second patient was 3 weeks old male born by Cesarean section at 41 gestational week, birthweight 2950g, with inborn cholestasis, dysmorphic face and pulmonary hypertension. Both children presented with complete obliteration of bile ducts and underwent Kasai procedure at age 51 and 42 days respectively. Liver biopsies showed cirrhosis and ductal plate malformation structures. Because of other complications liver transplantation was not considered. Both children were deceased in the first 6 months due to non-liver complications. Cytogenetic study revealed in both patients trisomy 11q23−terqter resulting from the malsegregation of a parental translocation involving chromosomes 4 and 11 in the first family, and chromosomes 9 and 11 in the second. CONCLUSIONS: Genes located on chromosome 11q may play role in development and injury of biliary tree. BA caused by genetic aberrations at this location is of very poor prognosis.

P0723

Title:

Piotr Czubkowski 1, Joanna Pawłowska 1, Piotr Kaliciński 1, Joanna Cielecka-Kuszyk 1, Diana Kamińska 1, Jerzy Socha 1
1) The Children's Memorial Health Institute, Warsaw, Poland

Summary:
BACKGROUND: Since introduction of Kasai hepatoportoenterostomy (HPE) the prognosis and natural course of biliary atresia (BA) were definitely changed. The restoration of intestinal bile flow can slow down or even stop the progress of BA, however most of the children (70-80%) eventually are liver transplantation candidates. The aim of the study was to determine a prognostic value of risk factors in children with biliary atresia. MATERIAL AND METHODS: The retrospective chart review of 238 children (141 females, 97 males) with BA treated at The Children’s Memorial Health Institute between 1983 and 2004. The following parameters were analyzed: age at Kasai operation, anatomical type of BA, direct bilirubin level before operation (IBL), outcome of HPE, congenital abnormalities, coexisting CMV infection and liver fibrosis at the moment of HPE. Survival rates with native liver (SNL) were compared with use of log-rank test and regression Cox models. RESULTS: Sixty patients live without LTx (25%), 93 were transplanted (39%), 85 died without LTx (62 before introduction of LTx in Poland), 13 patients deceased after LTx and 80 live with transplant. The overall 5/10 year actuarial survival with native liver was 36%(27%) respectively. Restoration of bile flow was the main indicator of good prognosis with 10-year SNL reaching 72% in cases with proper bile drainage and <1% if HPE was unsuccessful. By univariate analyses we selected significant risk factors and put them into multivariate regression model. Independent risk factors were age at referral to HPE over 50 days (p=0,05), anatomical type of BA (p=0,05), direct bilirubin level > 8mg% at the moment of operation (p<0,01). The coexistence of CMV infection was significant only in univariate analysis (p=0,03). In patients with splenic malformations prognosis was similar to the rest of children, however there was a trend of worse survival in malrotation and situs inversus groups (p=0,07). Higher degree of liver fibrosis did not correlate with poorer outcome (p=0,84). CONCLUSIONS: The bile drainage after HPE, age at the referral, severity of cholestasis and anatomical type of disease are the most important predictors of survival without transplantation in biliary atresia.

P0724

Title:
The significance of portal hypertension in children with biliary atresia

Piotr Czubkowski 1, Mikolaj Teisseyre 1, Joanna Pawłowska 1, Marek Woynarowski 1, Diana Kamińska 1, Socha Jerzy 1
1) The Children’s Memorial Health Institution, Warsaw, Poland

Summary:
BACKGROUND: Portal hypertension (PH) is one of the most common consequence of progressive liver damage in children with biliary atresia (BA). The most severe complication is gastrointestinal hemorrhage from esophagaeal or gastric varices. The aim of the study was to evaluate the role of PH development as a prognostic marker in children with BA. MATERIAL AND METHODS: The retrospective chart review of 238 children with BA who underwent Kasai hepatoportoenterostomy (HPE) between 1983 and 2004 was performed. Significant portal hypertension (SPH) was defined as variceal bleeding and/or varices of at least II grade and/or gastric varices. The statistical analyses were based on logistic regression and log-rank test for Kaplan Meier survival curves. RESULTS: SPH was observed in 92 patients (39%). 72 of them presented with variceal bleeding (30%) and mortality of 16% (n=12). An average age at the moment of bleeding was 26 months. Development of SPH was not significant for prognosis in the whole cohort. However, in patients who survived initial 2 years after HPE without liver transplantation actuarial 5(10)-year survival was 73%(67%) comparing with non-SPH group 70%(41%), p<0,001. There was no correlation between SPH development and degree of liver fibrosis, anatomical pattern of BA, the presence of congenital anomalies or outcome of HPE. The only risk factor of SPH development was survival with native liver over 2 years,
p<0.001. CONCLUSIONS: The development of portal hypertension is a severe condition worsening prognosis in children with BA living over 2 years after Kasai operation without liver transplantation.

P0725

Title: The steroid use is beneficial in children with biliary atresia and successful Kasai operation.

Piotr Czubkowski 1, Joanna Pawłowska 1, Piotr Kaliciński 1, Irena Jankowska 1, Diana Kamińska 1, Jerzy Socha 1
1) The Children's Memorial Health Institute, Warsaw, Poland

Summary:
BACKGROUND: The anti-inflammatory properties of corticosteroids may implicate processes responsible for the pathogenesis and progression of biliary atresia (BA). The aim of the study was to examine the efficacy and safety of steroid therapy in children with BA. MATERIAL AND METHODS: The retrospective chart review of 223 children with BA who underwent Kasai hepatportoenterostomy (HPE) between 1983 and 2004 was undertaken. Successful HPE was defined as total bilirubin level below 2mg% measured 3 months after operation. 86 patients were given steroids for 2-6 weeks postoperatively with similar doses of prednisone. The outcome of KHP and actuarial survival with native liver (SNL) were compared between steroid and steroid-free group using logistic regression and log rank test. RESULTS: HPE was successful in 81 patients (36%) with no difference between groups, p=0.31. The actuarial 5/10-year SNL was 40%/34% and 36%/24% in steroid and steroid-free group respectively, p=0.21. The separate analysis was performed exclusively for patients with successful HPE. In steroid group (n=28) actuarial 5(10)-year SNL was 92%(84%) in comparison to 84%(63)% in steroid-free group (n=53), p<0.01. We did not observe a higher rate of complications related to steroid usage like postoperative bleedings, sepsis or delayed wound healing. There was a trend toward a higher risk of cholangitis in steroid group, p=0.07. CONCLUSIONS: In children with successful KHP the postoperative use of corticosteroids is related with better long-term prognosis. The therapy is safe and well tolerated by patients.

P0726

Title: Itraconazole prophylaxis in paediatric liver transplant recipients: Drug interaction and tolerability.

Bachina Prashant 1, Dhawan Anil 1, Shanmugam Naresh 1, Verma Anita 1
1) king’s college hospital, london, united kingdom

Summary:
Aim: Itraconazole has been successfully used as a prophylactic antifungal in transplant recipients. Between Aug 2004 to Dec 2005 there was building construction activity around the paed liver wards. Itraconazole (ITZ) was used as a prophylactic antifungal agent in liver transplant recipients (LTR). The aim of the study was to analyse the interaction between ITZ and tacrolimus, its tolerability and efficacy as an antifungal agent in this population. Patients and Methods: 49 children (23 male), median age 27 months range (2 months to17.8 years) underwent LTR and received ITZ 2.5 mg/kg/d BD for the first 14 days after LT. Patients were followed up for 100 days after LT and the following data was collected: Tacrolimus 12 hour trough levels while on and off ITZ, ITZ blood levels, incidence of acute cellular rejection, renal function and occurrence of fungal infections. Results: The indications for the (LT) were biliary atresia 18(36.7%), acute liver failure 10(20.4%), PFIC 8(16.3%) and others 13(26.5%). The median tacrolimus trough level on ITZ was 9.3µg/L range (3.5-16) and 6.6µg/L range (3.9-11.3) off the ITZ (P<0.001). ITZ levels were done on day 7 and the levels were available in 10 patients, median itraconazole level were subtherapeutic 0.1mg/L range being (0.00-0.28) (therapeutic level 0.5mg/L). The tacrolimus levels were one and half times the therapeutic levels when the median ITZ level was 0.1mg/L. 45% reduction of tacrolimus dose was required to maintain therapeutic levels while on ITZ. The incidence of acute cellular rejection while on itraconazole was 40% and 60% while off ITZ compared to the incidence of 45% in the historic controls. The median serum urea (5.2mmol/l) was higher when the patients were on ITZ as compared to when they were off ITZ (3.2mmol/l) (P<0.001). There was no difference in the colonization rate with Candida spp before and after transplant, however 3 (6.1%) patients had Aspergillus spp isolated post transplant. ITZ was changed to other antifungals in 8(16.3%) because of proven FI in 3(6.1%), and probable FI in 5(10.5%). Incidence of FI infection was higher 16.3% in this group compared to 10% in the historical control group who were on selective antifungal prophylaxis for high risk factors. Conclusion: Itraconazole had unpredictable bioavailability Itraconazole prophylaxis was ineffective and had an unpredictable effect on the tacrolimus trough levels, making immunosuppression monitoring difficult.

P0727

Title: Liver allograft histology at 10 years and quality of life in children with normal standard liver function tests.
**P0728**

**Title:** THE EFFICACY AND SAFETY OF VALGANCICLOVIR vs. ORAL GANCICLOVIR IN THE PREVENTION OF CMV INFECTION IN CHILDREN AFTER SOLID ORGAN TRANSPLANTATION

Yaron Avitzur 1, Evelin Lapidus-Krol 1, Riki Shapiro 1, Miriam Davidovitch 1, Eytan Mor 2, Jacob Amir 1, Raanan Shamir 1
1) Schneider Children’s Medical Center of Israel, Petah Tikva, Israel 2) Rabin Medical Center, Petah Tikva, Israel

**Summary:** Infection with cytomegalovirus (CMV) can lead to severe consequences in children after solid organ transplantation. Routine prophylactic treatment with valganciclovir is common in adults but data to support its use in children is scarce. The aim of this study was to compare the efficacy and safety of valganciclovir vs. oral ganciclovir in a pediatric cohort. Methods: Historical prospective analysis of all children who underwent kidney (KTx) or liver transplantation (LTx) in our center between the years 2000-2007. Exclusion criteria included recipients with R-/D-serostatus, graft loss or death within six month post transplantation, combined treatment with acyclovir or lost to follow up. All children have received IV ganciclovir for 2 weeks and then oral ganciclovir (TID) before 2004 or valganciclovir (OD) thereafter. Valganciclovir dose was determined by the following equation: 7 X BSA X creatinine clearance. Treatment was given for 3 months in R+/D+/- recipients and for 6 months in R-/D+. Patients were followed for 1 year after transplantation and efficacy and safety parameters were collected. Results: 153 children underwent KTx or LTx between 2000-2007. 92 of them fulfilled the inclusion criteria (25 LTx, 63 KTx, 4 combined LTx and KTx). 41 children have received oral ganciclovir and 51 valganciclovir. Both groups were comparable in their demographic and transplant related history. In the valganciclovir group 13.7% of the children have developed CMV infection/disease vs. 19.5% in the ganciclovir group (95%CI, 0.2-2, P=0.57). Sub-analysis according to graft type demonstrated a trend towards better efficacy of valganciclovir compared to ganciclovir in LTx recipients (15% infection rate vs. 37% respectively, P-NS) but not in KTx recipients. Time-to-onset of CMV disease or infection was comparable in both treatment groups; rates of acute allograft rejection were slightly lower in the Valganciclovir group (3.9% vs. 9.8%). Risk factors for CMV infection included young age, serostatus of R+/D+ and liver graft. No significant side effects were noted in both groups. Conclusions: As in adults, treatment with valganciclovir is as efficacious and safe as treatment with oral ganciclovir in children after KTx and LTx. There might be some advantage for valganciclovir use in children after LTx but further studies are needed to support this assumption.

**P0729**

**Title:** Incidence of Wilson Disease in Europe, a prospective multi centre study by EuroWilson-A European Union Framework 6 initiative

Anil Dhawan 1, on behalf of EuroWilson 1
1) Paediatric Liver Centre, King’s College Hospital NHS Foundation Trust, London, United Kingdom
Wilson disease (WD) is an inherited disorder of hepatic copper transport with an estimated incidence of 1 in 30,000 but not confirmed on prospective studies. Identifying the exact incidence would facilitate the planning of studies for this disease particularly randomised controlled trials for treatment. EuroWilson is a European Commission 6th framework programme funded project (LSHM-CT-2004-503430) involving 14 countries, set up to identify the incidence of WD. Aim: To calculate the yearly incidence of WD in Europe and its distribution to homogeneous clinical groups. Methods: Clinical, laboratory and genetic data on patients diagnosed with WD from January 2005 were entered into the database. Diagnosis of WD validated against validated scoring system. Results: From January 2005 - December 2007, validated data from 242 patients in 220 families were entered. 135 (56%) presented with liver disease (including 12 cases with fulminant WD), 16.2% were asymptomatic siblings. Based on the estimate of about 30 cases/million and life expectancy of 75 years, 625 cases in 3 years were expected. The actual incidence equated as 0.48 cases/million in 3 years. Data entry varied substantially between countries. The highest numbers of cases per million population entered were from Croatia (2.44), Austria (2.2), Greece (1.5) and Poland (1.43). The lowest from larger countries like Germany (0.1), Turkey (0.18) and Spain (0.12). The demographics and clinical findings varied considerably from those documented in retrospective series: 10% presented above the age of 40 (46% with liver disease), 39% were between 18-39 (liver disease in 58 %) and 51% were in the pediatric age group (60% with liver disease). Kayser-Fleischer rings were detected only in 80 patients (33%). Conclusion: This is the first and only prospective attempt to estimate the incidence of WD in Europe. Although it identified only a third of expected cases, the incidence is sufficiently high enough to plan a prospective randomized therapeutic trial.

P0731
Title: Wilson disease in two generations: the value of family screening in children
Piotr Socha 1, on behalf of EuroWilson 1
1) Department of Gastroenterology, Hepatology and Immunology, Children’s Memorial Health Institute, Poland, Warsaw

Summary:
Aim: To calculate the yearly incidence of WD in Europe and its distribution to homogeneous clinical groups. Methods: Clinical, laboratory and genetic data on patients diagnosed with WD from January 2005 were entered into the database. Diagnosis of WD validated against validated scoring system. Results: From January 2005 - December 2007, validated data from 242 patients in 220 families were entered. 135 (56%) presented with liver disease (including 12 cases with fulminant WD), 16.2% were asymptomatic siblings. Based on the estimate of about 30 cases/million and life expectancy of 75 years, 625 cases in 3 years were expected. The actual incidence equated as 0.48 cases/million in 3 years. Data entry varied substantially between countries. The highest numbers of cases per million population entered were from Croatia (2.44), Austria (2.2), Greece (1.5) and Poland (1.43). The lowest from larger countries like Germany (0.1), Turkey (0.18) and Spain (0.12). The demographics and clinical findings varied considerably from those documented in retrospective series: 10% presented above the age of 40 (46% with liver disease), 39% were between 18-39 (liver disease in 58 %) and 51% were in the pediatric age group (60% with liver disease). Kayser-Fleischer rings were detected only in 80 patients (33%). Conclusion: This is the first and only prospective attempt to estimate the incidence of WD in Europe. Although it identified only a third of expected cases, the incidence is sufficiently high enough to plan a prospective randomized therapeutic trial.

P0730
Title: The impact of immunosuppression on health related quality of life in adolescents after liver transplantation
Rachel M Taylor 1, Linda S Franck 2, Faith Gibson 2, Anil Dhawan 1
1) King’s College Hospital NHS Foundation Trust, London, United Kingdom 2) Institute of Child Health, London, United Kingdom

Summary:
Aim: To investigate the relationships between the impact of immunosuppression and health related quality of life (HRQL) in adolescent liver transplant recipients. Methods: A cross sectional descriptive study of HRQL was conducted in adolescents aged 12 – 18 years. HRQL was measured using the Child Health Questionnaire (CHQ-CF87). This has 11 subscales which were reduced using factor analysis to 3 summary domains reflecting physical (PF), psychological (PsF) and social (SF) function. The impact of immunosuppression was measured using an adapted version of the Modified Transplant Symptom Occurrence and Symptom Distress Score (MTSOSD). The total symptom frequency score was calculated by summing the total number of the 33 symptoms experienced by the adolescent in the past month. The total distress score was calculated by summing the distress level rating (0 – 4) for each symptom. Multiple regression analysis was performed to identify which symptoms explained the variation in HRQL. Results: 55 adolescents (mean age 15 +/- 1.9 years) participated in the study. All were 6 months post-transplantation and the median age at the time of transplant was 7.5 +/- 4.2 years. 52 (96%) were on calcineurin inhibitors, 3 (6%) were on MMF. Adolescents experienced mean of 18 +/- 6 symptoms, range 4 – 31 of 33. These symptoms caused mild to moderate distress (mean 28.1 +/- 20.6, range 0 – 104 of 132). The most frequently occurring symptoms were: tiredness (86%); mood swings (82%) and stomach complaints/feeling sick (78%). However, the symptoms that caused the greatest distress were: weight gain (50%); difficulty in sleeping (45%); painful periods (38% of females); short stature and painful joints (both 37%). In the multivariate model, symptom distress impacted on all 3 domains (Beta -0.5, -0.6 and -0.3 for PF, PsF and SF respectively). The presence of painful joints, stomach complaints/feeling sick and persistent cough impacted on PF (beta -0.2), PsF (beta -0.3) and SF (beta -0.3) respectively. These factors explained the variance in PF by 41%, PsF by 43% and SF by 13%. Conclusion: All the adolescents in the study experienced frequent symptoms that could be related to immunosuppression. The degree of symptom distress varied widely, but both symptom frequency and distress were strongly associated with negative HRQL across physical, psychological and social domains.

P0731
Title: Wilson disease in two generations: the value of family screening in children
Piotr Socha 1, on behalf of EuroWilson 1
1) Department of Gastroenterology, Hepatology and Immunology, Children’s Memorial Health Institute, Poland, Warsaw

Summary:
Aim: To calculate the yearly incidence of WD in Europe and its distribution to homogeneous clinical groups. Methods: Clinical, laboratory and genetic data on patients diagnosed with WD from January 2005 were entered into the database. Diagnosis of WD validated against validated scoring system. Results: From January 2005 - December 2007, validated data from 242 patients in 220 families were entered. 135 (56%) presented with liver disease (including 12 cases with fulminant WD), 16.2% were asymptomatic siblings. Based on the estimate of about 30 cases/million and life expectancy of 75 years, 625 cases in 3 years were expected. The actual incidence equated as 0.48 cases/million in 3 years. Data entry varied substantially between countries. The highest numbers of cases per million population entered were from Croatia (2.44), Austria (2.2), Greece (1.5) and Poland (1.43). The lowest from larger countries like Germany (0.1), Turkey (0.18) and Spain (0.12). The demographics and clinical findings varied considerably from those documented in retrospective series: 10% presented above the age of 40 (46% with liver disease), 39% were between 18-39 (liver disease in 58 %) and 51% were in the pediatric age group (60% with liver disease). Kayser-Fleischer rings were detected only in 80 patients (33%). Conclusion: This is the first and only prospective attempt to estimate the incidence of WD in Europe. Although it identified only a third of expected cases, the incidence is sufficiently high enough to plan a prospective randomized therapeutic trial.
selected patients. Results: Within 220 families and 242 patients entered until 30 November 2007, 18 patients aged 12.1 +/- 8.5 years (10 females) in 14 non-consanguineous families were identified. 4 patients in 3 families were diagnosed because of WD in their fathers, and in 9 children mothers were affected. In 8 siblings an uncle or an aunt (brother/sister of the father/mother) had Wilson disease. Altogether, 7.4% of the WD patients in the database were diagnosed through family screening. 13 patients were asymptomatic, in 2 patients neurological symptoms were observed and in 4 patients abdominal symptoms were recorded. In 6 patients mildly increased ALT (median 160 (range 92-350) U/l) was found. The most frequent mutation recorded was H1069Q (in 5). Summary: A higher than expected frequency of apparent parent to child transmission of WD was noticed in the EuroWilson database, and has been examined. Conclusion: There are a relatively high proportion of the WD patients diagnosed through family screening from the families where parents or uncles/aunts are affected. We conclude that diagnostic testing to the offspring of adult WD cases should be offered. The data suggests that genotypic frequency of WD is higher than phenotypic.

<table>
<thead>
<tr>
<th>Value</th>
<th>Diagnosis</th>
<th>Puberty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>4.48 +/- 2.7</td>
<td>15.98 +/- 0.66</td>
</tr>
<tr>
<td>Weight SDS</td>
<td>-0.67 +/- 0.98</td>
<td>-0.44 +/- 1.41</td>
</tr>
<tr>
<td>Height SDS</td>
<td>-0.7 +/- 1.3</td>
<td>-0.3 +/- 1.56</td>
</tr>
<tr>
<td>Arm circumference SDS</td>
<td>0.04 +/- 1.13</td>
<td>0.19 +/- 0.98</td>
</tr>
<tr>
<td>Tricipital fold SDS</td>
<td>-0.36 +/- 1.02</td>
<td>-0.02 +/- 0.99</td>
</tr>
<tr>
<td>Subescapular fold SDS</td>
<td>0.04 +/- 0.84</td>
<td>0.61 +/- 1.68</td>
</tr>
<tr>
<td>BMI SDS</td>
<td>-0.74 +/- 1.4</td>
<td>-0.93 +/- 0.94</td>
</tr>
<tr>
<td>GFD time (years)</td>
<td>0.87 +/- 3.76</td>
<td></td>
</tr>
</tbody>
</table>

**P0732**

**Title:**
**BILIARY ASCITES DUE TO A PERFORATED CHOLEDOCAL CYST (CASE REPORT)**

Rafael Guerrero-Lozano 1, Martha Beltrán-González 2
1) Universidad Nacional de Colombia, Bogota, Colombia 2) Clinica del Country, Bogota, Colombia

**Summary:**
A 2-month-old female infant was admitted due to abdominal distension which appeared on the second week of life. One week before referral she had been passing greenish mucousy stools. Physical examination was unremarkable except for important distension and dullness of the abdomen. Serum albumin was 3.6 g/dL and direct bilirubin 1.8 mg/dL. Ultrasound showed mild dilatation of the choledocus. Considering biliary as well as chylous ascitis, an abdominal tap produced bile stained flow. Scintigraphy revealed normal liver size and function, dilatation of the extrahepatic biliary ducts and free isotopic material in the abdomen. On laparotomy a small posterior perforation of the choledocus was found. Management included cholecystectomy and a T tube left in the choledocal site. After a week of fasting, parenteral nutrition and gradual enteral boluses, the drainage diminished; the patient was discharged on the second week after diagnosis. Comment: Perforation of a choledochal cyst is not common. Previously, a subacute clinical form has been described and characterized by acholic stools, mild fluctuating jaundice and ascites. In many cases no definite cause is evident; trauma and anomalies of the choledochopancreatic duct junction have been informed in some patients. The history of a choledochal cyst is not necessarily present and the cyst may not be identifiable on laparotomy due to its collapse. The rupture of small cysts as well as perforations on the posterior wall have been reported before.

**P0733**

**Title:**
**Hemochromatosis in childhood: case description**

Raquel Borges Pinto 1, Ana Regina Lima Ramos 1, Marina Adami 1, Pedro Eduardo Fröelich 2, Silva Chaves e Silva 1, Pedro Paulo Albino dos Santos 1
1) Hospital da Criança Conceição, Porto Alegre, Brazil 2) Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

**Summary:**
Objectives: Hemochromatosis is the most common genetic disease among the European Caucasian population, but it is rarely diagnosed in childhood. It is a disorder of iron metabolism that can lead to excessive skin pigmentation, diabetes mellitus and cirrhosis. The objective of this study is to describe a case of hemochromatosis in childhood. Methods and Results: Patient with 8y, white female of Italian descent, was referred to the Pediatric Gastroenterology Unit at the HCC for investigation of persistently abnormal liver function test results. The patient had previously been healthy,
Objective: To report a rare association of autoimmune hepatitis and leprosy. Case report: a 9-year-old girl born in São Luiz (MA) and living in Ribeirão Preto (SP) presented hypochromic lesions on her arms and legs of one year duration and diagnosed as leprosy 2 months ago. During patient investigation, liver enzymes were found to be altered. History: mother and father had already been treated for leprosy. Physical examination: hypochromic skin lesions observed on the arms and legs. Physical findings: splenomegaly, paresthesia, and hypochromic rash on the extremities. Laboratory findings: elevated liver enzymes, anemia, and hypoalbuminemia. Diagnosis: autoimmune hepatitis associated with dysmorphic tuberculoid leprosy. Management: treatment with antiretroviral therapy and supportive care. Outcome: patient improved with treatment. Conclusion: this is a rare case of autoimmune hepatitis associated with leprosy, highlighting the importance of early detection and proper management of liver disease in patients with leprosy.
ALAT decreased significantly (p = 0.046), and there was a significant reduction in liver steatosis from 25.6% to 6% (P < 0.001) after intervention. Liver steatosis was found in 30 (26%) children. A week but significant correlation between ALAT and liver steatosis was found (r = 0.18, P = 0.006). Overall, liver fat percentage was reduced from 33.0 (17-46)% to 29.2 (13-42)% (p < 0.05). At inclusion 20 (17%) children had elevated alanine aminotransferase (ALAT) levels, and median BMI was significantly reduced to 24.8 kg/m² (range 19-39) (p < 0.05). Body fat percentage was reduced from 21-43% to 17-39% (p = 0.048). A liver biopsy revealed: chronic hepatitis with intense inflammatory activity. Treatment with Meticorten 1 mg/kg/day and Azathioprine 1.5 mg/kg/day was started. After one month of treatment the transaminases returned to normal. Only after control of hepatic function did the patient start treatment of leprosy with clofazimine 50 mg/day and rifampicin 300 mg/day. She is being followed up in our service, where she has completed 17 months of treatment of autoimmune hepatitis, which is in remission. There was improvement of skin lesions, with preserved sensitivity. Conclusion: the literature shows that about 62% of patients with lepromatous leprosy and 21-50% of patients with tuberculoid leprosy present hepatic granulomas. Portal vasculitis has been detected in a few cases. At times, leprosy bacilli may be present in the lesions. In a review of the literature we did not detect any case of association of leprosy with autoimmune hepatitis.

P0736

Title: 
KINETIC STUDY OF DENTAL AND BONE MINERALIZATION STATUS IN EXTRA-HEPATIC CHOLESTASIS BY GOLD STANDARD AND ALTERNATIVE METHODS IN RATS

Ricardo K Toma 1, Luciana Bruzadin 1, Ana Maria A Liberatore 1, Regina H G M Mattar 1, Mauro B Morais 1, Ivan H J Koh 2
1) Department of Pediatrics, Paulista School of Medicine, Federal University of Sao Paulo, Sao Paulo, Brazil 2) Department of Surgery, Paulista School of Medicine, Federal University of Sao Paulo, Sao Paulo, Brazil

Summary:
Objective: Evaluation of bone and teeth mineralization changes during the progressive stages of the cholestasis disease comparing histomorphometric analysis, dual energy X-ray absorptiometry (DEXA) scan and laser fluorescence system methods. Method: Adult Wistar rats (n=30) were distributed in sham (n=4/group) and cholestasis (n=6/group) groups which were followed during 50 days (groups: 10, 30 and 50 days). The stage of cholestasis disease were: phase of non-cirrhosis at day 10, phase of cirrhosis at day 30, and phase of cirrhosis with hepatic insufficiency at day 50. Cholestasis was provoked by extrahepatic bile duct ligated (BDL) and resection. At each period of study tibiae was monitored by histomorphometric analysis using Osteomeasure Software®; teeth and tibiae by laser fluorescence system (KAVO®); and lumbar spine and the entire body by DEXA. All method’s findings were directly related to tissue mineralization. Results: By histomorphometry, the tibiae showed 13.7% (10days), 39.2% (30days) and 47.2% (50days) reduction in tibial cancellous bone area plus a significant reduction of the trabecular thickness in the cholestatic group as compared to the control (P< 0.05). The laser fluorescence findings were between 1 and 2 for teeth, and 3 for tibiae throughout period in control group characterizing normal values of teeth and bone mineralization, however in cholestatic group, values became progressively higher proportional to progression of the disease: 3 (10days); 5 (30days); 6-7 (50days) for teeth, and 4-5 (10 days); 7 (30days) and 9-10 (50 days) for tibiae, p< 0.05 at all periods. In contrast, DEXA method did not demonstrate any statistical difference between groups. Conclusion: Bile duct-ligated rats develop systemic demineralization concomitant to the progression of the disease and the laser fluorescence system was as efficient as histomorphometric analysis method in the early detection of bone demineralization. Based on these overall findings, the dental mineralization evaluation by non-invasive and rapid laser fluorescence method could be a cost-beneficial alternative method for monitoring the systemic mineralization status.

P0737

Title: 
Effect of a Weight Loss Camp stay on weight, body impedance, liver enzyme and steatosis in obese Danish children.

Aksel Lange 1, Henning Gronbaek 2, Niels Birkebaek 1, Kurt Kristensen 1, Soren Rittig 1, Hendrik Vilstrup 2
1) Pediatric Department, Skejby Hospital, Aarhus University Hospital, Aarhus, Denmark 2) Department of Medicine, Aarhus University Hospital, Aarhus, Denmark

Summary:
Aim: Obesity is an increasing problem in Denmark and liver steatosis in children is associated with obesity. Prevalence of steatosis in obese Danish children is unknown. The aim of the study was to describe metabolic and ultrasonic changes of liver steatosis in obese Danish infants before and after weight loss obtained through diet and exercise. Methods: During a 2 year period, 117 (49 males) obese children (BMI for age > 3 SD) with mean (SD) age 12.2 (1.4) years were examined before and after 10 weeks intervention in a Weight Loss Camp. Anthropometric-, impedance-, metabolic- and ultrasonic (US) examinations were performed in the Pediatric Department. Results: Median BMI at inclusion in the study was 27.5 (range 21-43) kg/m². After 10 weeks intervention median BMI was significantly reduced to 24.8 kg/m² (range 19-39) (p < 0.05). Body fat percentage was reduced from 33.0 (17-46)% to 29.2 (13-42)% (p < 0.05). At inclusion 20 (17%) children had elevated alanine aminotransferase (ALAT) levels, and liver steatosis was found in 30 (26%). A week but significant correlation between ALAT and liver steatosis was found (r = 0.18, P = 0.006). Overall, ALAT decreased significantly (p = 0.046), and there was a significant reduction in liver steatosis from 25.6% to 6% (P < 0.001) after intervention.
Conclusion: In Danish children with BMI for age > 3 SD elevated ALAT was observed in 17 %, and liver steatosis by US was observed in 26 %. After a 10 weeks stay at a Weight Loss Camp and an average BMI reduction of 3.4 kg/m2. ALAT and liver steatosis frequency was significantly reduced.

P0738
Title: PORTAL HYPERTENSION ENHANCES AND CHANGES BACTERIAL TRANSLOCATION (BT) PROFILE IN RATS
Ricardo K Toma 1, Ana Maria A Liberatore 1, Jose L Menchaca-Diaz 1, Ramiro A Azevedo 1, Ulisses Fagundes-Neto 1, Ivan H J Koh 2
1) Department of Pediatrics, Paulista School of Medicine, Federal University of Sao Paulo, Sao Paulo, Brazil 2) Department of Surgery, Paulista School of Medicine, Federal University of Sao Paulo, Sao Paulo, Brazil
Summary:
Objective: The aim of this study was to evaluate the role of the acute and chronic portal hypertension (a-PH and c-PH) without cirrhoses on BT pattern. Methods: 80 Wistar rats (200-250g) were distributed in BT, PH, PH-BT and respective Sham groups. The a-PH (when shunting is minimal) and c-PH (when shunting is extensive and mimics the portal hypertension of cirrhosis) were induced by calibrated portal vein stenosis and were submitted to BT-assay on days 2 and 14, respectively. BT was induced by oroduodenal inoculation of 5 ml of E. coli R-6 107 or 1010 CFU/ml/100gr of body weight (mild and high bacterial overgrowth condition, respectively) which were confined to small bowel by duodenal and ileal ligatures for two hours. At BT-sham groups were used saline and at PH-sham groups only surgical procedures without portal ligation were performed. Following 2 hours of BT-process, systemic organ (liver, spleen and ileum) perfusion was monitored by laser Flow-Doppler, and mesenteric lymph node (MLN), liver, spleen, lung, blood and peritoneal fluid (PF) were collected for culture. Results: In BT 1010 Group, BT was 100% positive at MLN, liver and spleen (5, 3 and 3 log10 CFU/g respectively), while blood, PF and lung were negative. At a-PH animals the BT pattern with 1010 was: 100% to MLN, liver and spleen (5, 4 and 4 log10 CFU/g, respectively) besides a significant lung (100%, 3 log10) and PF (10%, 0.6 log10) BT. In turn, in c-PH/BT1010, the findings were similar to BT1010 alone in MLN, liver, spleen and lung, but there was an increased translocation to PF (60%, 1 log10, p< 0,05). On the other hand, at BT107 group, all cultures were negative, but in PH/BT1010, translocation occurred to LNM in a-PH (20%, 5 log10) and in c-PH (20%, 0,6log10) evidencing a change in the gut threshold for BT in the PH state. In addition, BT1010 reduced significantly the organ perfusion (liver:-24%;ileo:-12%;spleen;-37%) which became worst with PH factor: a-PH (liver:-37%; spleen:-43%) and c-PH (liver:-24%;ileo:-12%;spleen:-37%). Conclusion: PH factor without cirrhosis increases and changes the pattern of BT, especially to lung at a-PH and to peritonel fluid at c-PH states under small bowel Gram negative bacterial overgrowth condition. These findings in addition to the tissue hypoperfusion impairment seen at both PH states might explain the higher susceptibility to infection in PH diseases.

P0740
Title: AUTOIMMUNE HEPATITIS ASSOCIATED TO HEPATITIS A VIRUS
Roberto Cervantes Bustamante 1, Cecilia Ridaaura Sanz 1, Ana Hernández Avila 1, Maira Patricia Sánchez Pérez 1, Sergio Díaz Madero 1, Jaime Alfonso Ramírez Mayans 1
1) Instituto Nacional de Pediatría, México City, México
Summary:
Introduction: Autoimmune hepatitis (AIH) is a progressive inflammatory liver disease characterized by interfase hepatitis, hypergammaglobulinemia and serum autoantibodies. Hepatitis A virus (HAV) has been implicated as a trigger in children and adults. Aim: to describe the frequency of hepatitis A virus associated to AIH in Mexican children. Methods: This retrospective, descriptive and longitudinal study was performed from January 1990 to February 2007. Patients with diagnosis of AIH (positive serologic markers for antinuclear antibodies –ANA-, LKM1, or anti smooth muscle antibodies –SMA-) were tested for HAV IgM. Age, gender, time from onset, clinical, biochemical and histological evolution (with at least 2 biopsies), as well as treatment were described. Results: 41 patients with AIH were studied. 11 were HAV IgM positive. Average age was 6 years (7 months-14 years), 7 were female. Clinical onset was fulminant in 6 and acute or subacute in 5. Treatment with prednisone 2mg/kg/day and azathioprine 2mg/kg/day was started in all patients. All patients achieved clinical and biochemical remission. 7 had histological improvement, 3 had no change and only one showed disease progression. Treatment was discontinued in 7 patients after 2 years while 4 remain with low-dose prednison and azathioprine. Conclusion: Hepatitis A virus could be a trigger for AIH.

P0741
Title: METHOTREXATE THERAPY FOR AUTOIMMUNE HEPATITIS IN CHILDREN
Records of 255 (16%), with a diagnosis of idiopathic infantile cholestasis, were available for retrospective review. All infants underwent a comprehensive evaluation, including laboratory tests, imaging studies, and clinical assessments.

**Patients & Methods:** 1625 infants, less than 6 months, presented to our centre with infantile cholestasis between 1995-2005, of these the medical records of 255 (16%) were reviewed. All infants underwent a comprehensive evaluation, including laboratory tests, imaging studies, and clinical assessments.

**Aim:** To review the long-term follow up and outcome of infants presenting with neonatal cholestasis in whom no cause could be established.

**Summary:**

1) King's College Hosptial, London, United Kingdom

Roshni Vara 1, Rachel M Taylor 1, Anil Dhawan 1

Idiopathic Infantile Cholestasis: Long term follow up and outcome; A single centre experience

**Title:**

P0744

**Report of Case:** association of antiphospholipid syndrome and autoimmune hepatitis in a toddler

Rodrigo Vázquez-Frias 1, Samara Mendieta Z 1, Pedro F Valencia-Mayoral 1, Sollange Heller R 1, Rocío Maldonado V 1, Alejandra Consuelo S 1

1) Hospital Infantil de México Federico Gómez, México City, México

**Summary:**

Introduction: To our knowledge, there are only fourteen cases of autoimmune hepatitis (AIH), mostly type I, associated with antiphospholipid syndrome (APS) reported, none of them in children; a case of this association in a pediatric patient is presented in this report. Case presentation: A 16-month-old male toddler, presented with a history of: first sibling, born at 29 weeks gestation by cesarean section secondary to pre-eclampsia. He was admitted due to a history of two months of jaundice, palpebral and limb edema, cough, and respiratory distress. On physical examination, scleral jaundice, reinforcement of the second cardiac murmur, hepatomegaly, cyanosis, and livedo reticularis were found. Direct bilirubin was 1.57 mg/dL, alanine aminotransferase 1490 mg/dL, IgM 344 mg/dL. Blood count, electrolytes and renal function tests were normal. PT, PTT, fibrinogen, C- protein, S-protein and resistance to C protein were within normal limits. Seric test for HAV-IgM, HBsAg, HCV-IgG, EBV-IgM and CMV-IgM were negative. A Lupus anticoagulant antibody was negative. Anticardiolipin antibodies IgM titers were 11.8 U/ML and 19.9 U/ML Anti-beta-2-glicoprotein-1 IgM 7.3 U/mL. VDRL negative. Antinuclear antibodies in speckled pattern 1:160, intermediate filaments 1:80, anti-Liver-Kidney-Microsomal-1 antibodies positive: 25.4 U/mL (NV <17), anti smooth muscle 1:80, antimitochondrial negatives. Anticardiolipin antibodies were 6.7 U/ML in the mother. An ecocardiogram disclosed pulmonary pressure of 68 mmHg. a. pulmonary scintigraphy subsegmentary pulmonary thromboembolism. A Liver biopsy showed inflammatory infiltration in 5 of 10 portal triads, piecemeal necrosis with 40% of plasma cells lambda and kappa chains positive. Few lymphocytes were observed in all lobules; occasional apoptotic bodies and histiocytic were also observed. Discussion: The hepatic manifestations in APS are diverse, usually related to thrombotic events. A high prevalence of anticardiolipin antibodies in AIH but without evidence of APS has been reported; our case presented evidences of both disorders. To our knowledge this is the first case of AIH type II with APS in a pediatric patient.

**P0743**

**Title:**

Report of Case: association of antiphospholipid syndrome and autoimmune hepatitis in a toddler

Rodrigo Vázquez-Frias 1, Samara Mendieta Z 1, Pedro F Valencia-Mayoral 1, Sollange Heller R 1, Rocío Maldonado V 1, Alejandra Consuelo S 1

1) Hospital Infantil de México Federico Gómez, México City, México

**Summary:**

Introduction: To our knowledge, there are only fourteen cases of autoimmune hepatitis (AIH), mostly type I, associated with antiphospholipid syndrome (APS) reported, none of them in children; a case of this association in a pediatric patient is presented in this report. Case presentation: A 16-month-old male toddler, presented with a history of: first sibling, born at 29 weeks gestation by cesarean section secondary to pre-eclampsia. He was admitted due to a history of two months of jaundice, palpebral and limb edema, cough, and respiratory distress. On physical examination, scleral jaundice, reinforcement of the second cardiac murmur, hepatomegaly, cyanosis, and livedo reticularis were found. Direct bilirubin was 1.57 mg/dL, alanine aminotransferase 1490 mg/dL, IgM 344 mg/dL. Blood count, electrolytes and renal function tests were normal. PT, PTT, fibrinogen, C- protein, S-protein and resistance to C protein were within normal limits. Seric test for HAV-IgM, HBsAg, HCV-IgG, EBV-IgM and CMV-IgM were negative. A Lupus anticoagulant antibody was negative. Anticardiolipin antibodies IgM titers were 11.8 U/ML and 19.9 U/ML Anti-beta-2-glicoprotein-1 IgM 7.3 U/mL. VDRL negative. Antinuclear antibodies in speckled pattern 1:160, intermediate filaments 1:80, anti-Liver-Kidney-Microsomal-1 antibodies positive: 25.4 U/mL (NV <17), anti smooth muscle 1:80, antimitochondrial negatives. Anticardiolipin antibodies were 6.7 U/ML in the mother. An ecocardiogram disclosed pulmonary pressure of 68 mmHg. a. pulmonary scintigraphy subsegmentary pulmonary thromboembolism. A Liver biopsy showed inflammatory infiltration in 5 of 10 portal triads, piecemeal necrosis with 40% of plasma cells lambda and kappa chains positive. Few lymphocytes were observed in all lobules; occasional apoptotic bodies and histiocytic were also observed. Discussion: The hepatic manifestations in APS are diverse, usually related to thrombotic events. A high prevalence of anticardiolipin antibodies in AIH but without evidence of APS has been reported; our case presented evidences of both disorders. To our knowledge this is the first case of AIH type II with APS in a pediatric patient.

**P0744**

**Title:**

Idiopathic Infantile Cholestasis: Long term follow up and outcome; A single centre experience

Roshni Vara 1, Rachel M Taylor 1, Anil Dhawan 1

1) King’s College Hospital, London, United Kingdom

**Summary:**

Aim: To review the long-term follow up and outcome of infants presenting with neonatal cholestasis in whom no cause could be established. Patients & methods: 1625 infants, less than 6 months, presented to our centre with infantile cholestasis between 1995-2005, of these the medical records of 255 (16%), with a diagnosis of idiopathic infantile cholestasis, were available for retrospective review. All infants underwent a com-
A moderate cytolysis. Diagnosis of hepatitis A was confirmed, others aetiologies of cholestasis were excluded. Conclusions: fulminant hepatitis A is the first episode. Another ten-year-old girl, presented with a long history of cholestasis, enlarged liver, borderline rate of ß-glutamyl transferases and complicating hepatitis A. A ten-year-old girl, presented with a biphasic icteric cholestasis with a secondary cytolysis which appeared 4 months after the secondary ascent of the gammaglobulines was confirmed by histological analysis in both cases. Two patients had acute acalculous cholecystitis (11.7 %), benign neonatal cholestasis (10.6 %) and bile duct hypoplasia (9.5%) represented the most common aetiologies of intra hepatic cholestasis. The diagnosis of autoimmune hepatitis which was suspected because of the persistance of jaundice and mean age of 8 years. Three Children died 2-4 days after admission. Two other children aged of 6 and 13 years were hospitalized for a fulminant hepatic A with fulminant form in 7 cases and subfulminant form in one case. Among these patients, there were 6 girls and 12 boys with a prehensive protocol of investigations to exclude all known causes of infantile cholestasis. Grp1=160 term infants (105 (66%) male, median age 0.13(range 0.01-0.48) years; Grp2=95 preterm, gestation median 32/40 range 24-36/40, 56 (59%) male, median age 0.20(range 0.02-0.56) years. Results: In Grp1 and Grp2, 65/160(41%) and 34/95(36%) were Caucasian and 140/160(88%) and 79/95(83%) were non-consanguineous, respectively. Grp2 presented with more neonatal complications than Grp1 (100% vs. 46%, p<0.001). There was a significant difference (p<0.001) in the presence of intrauterine growth retardation, sepsis, respiratory distress, necrotising enterocolitis and twin pregnancy between the 2 groups. On admission there were no differences in the following biochemical indices (Grp1 vs. Grp2): total bilirubin median 101(2-583)umol/l vs 89 (4-489)umol/l; direct bilirubin 82(1-493)umol/l vs 65(1-485)umol/l; GGT 106(12-1532)iu/l vs 126 (12-1708)iu/l however there were significant differences in INR 0.96(0.7-1.95) vs 1.05(0.9-2.9); p=0.005 and AST 115(29-1218)iu/l vs 85(1b-650)iu/l; p<0.001. In Grp1, the follow-up period was median 1.46(range 0-12.1) years and 1.65(range 0-8.3) years in Grp2. There was no difference between the groups to the time to clear jaundice: Grp1, 148(93%) cleared their jaundice with no evidence of ongoing liver disease; median 0.21(range0-3.1) years vs 0.22(range 0-2.43) years in 90(95%) in Grp2. The remaining 13 in Grp1 were lost to follow-up. In Grp2, 3 were discharged and are followed locally and 2 were lost to follow-up. In both groups the total bilirubin at presentation was predictive of the time to clear jaundice (r=0.24, CI 0.001, 0.002; adj r2=0.06, p<0.001). Conclusions: In our experience the aetiology of infantile cholestasis remains unknown in 40% of cases however the majority clear their jaundice by 6 months. The minority, who has persisting abnormal liver function may have an underlying and as yet undiagnosed condition.

P0745

Title:
Cholestasis in infant: remains problematic in a North African country.

Olfa Bouyahia 1, Samir Boukthir 1, Sihem Barsaoui 1, Saayda Ben Becher 1, Souad Bousnina 1, Azza Sammoud 1
1) Children Hospital of Tunis , Tunis, Tunisia

Summary:
Background: Cholestasis in infant constitutes an heterogeneous group of disease, diagnosis and management are often difficult. Aim of the study: To describe clinical, paraclinical characteristics and outcome of infant hospitalized for cholestasis in children's Hospital of Tunis during the last decade. Patients and methods: A retrospective study of 94 infants with cholestasis was conducted. Patients were hospitalized in the four departments of paediatrics of our hospital between January 1995 and December 2005. Cholestasis complicating severe sepsis or parasitic infection was excluded. Results: Incidence of cholestasis was 9.4 case/ year witch represented 0.72 % of the hospitalizations. Sex ratio was 1.08 and mean age at diagnosis was 105 days (extreme: 1 day- 24 months). Biliary atresia was the most common cause of extra hepatic cholestasis (13.8%). Normal IGT cholestasis (11.7 %), benign neonatal cholestasis (10.6 %) and bile duct hypoplasia (9.5%) represented the most common aetiologies of intra hepatic cholestasis. The aetiology remains unknown in 12.7% of cases. Only three infants with biliary atresia had Kasai operation. After a mean follow-up of 6 years: 18 % of patients had portal hypertension, 14.8 % had hepatic failure and mortality rate was 14.8 %. Conclusions: Biliary atresia is less frequent than expected. Prognosis of cholestasis in infant remains poor in our study.

P0746

Title:
Unusual presentations of hepatitis A in a North African country.

Olfa. Bouyahia 1, S. Mrad Mazigh 1, L. Gharsallah 1, S. Boukthir 1, S. Ben Becher 2, A. Sammoud El Gharbi 1
1) Paediatric Department C, Children Hospital of Tunis , Tunis, Tunisia 2) Emergency Department of Paediatrics, Children Hospital of Tunis , Tunis, Tunisia

Summary:
Hepatitis A virus infection is often asymptomatic; more than 90% of the symptomatic forms are poorly expressive and rapidly curable. The severe acute forms and the atypical presentations are very rare. The aim of the study is to describe forms of hepatitis A with unusual severity or atypical presentation observed in 2 paediatric departments of the “Children Hospital of Tunis. Materiel and Methods: A retrospective study was conducted between January 1992 and December 2006, including 24 cases of severe (n=18) or atypical presentations (n=6) of hepatitis A. The diagnosis of hepatitis A was confirmed by positive IgM serology in all patients. Results: During this period of investigation, the authors describe 18 cases of severe acute hepatic A with fulminant form in 7 cases and subfulminant form in one case. Among these patients, there were 6 girls and 12 boys with a mean age of 8 years. Three Children died 2-4 days after admission. Two other children aged of 6 and 13 years were hospitalized for a fulminant hepatitis A revealing auto-immune hepatitis. The diagnosis of autoimmune hepatitis which was suspected because of the persistance of jaundice and the secondary ascent of the gammaglobulines was confirmed by histological analysis in both cases. Two patients had acute acalculous cholecystitis complicating hepatitis A. A ten-year-old girl, presented with a biphasic icteric cholestasis with a secondary cytolsis which appeared 4 months after the first episode. Another ten-year-old girl, presented with a long history of cholestasis, enlarged liver, borderline rate of ß-glutamyl transferases and a moderate cytolsis. Diagnosis of hepatitis A was confirmed, others aetiologies of cholestasis were excluded. Conclusions: fulminant hepatitis A is
rare, but associated to a high rate of mortality. Diagnosis of the other atypical forms can be difficult and misleading for the practitioner. However, they must be recognized especially in endemic countries.

P0747

**Title:**

Use of Multistix Reagent Strip in diagnosis of ascites infection in cirrhotic children

Sandra Maria Gonçalves Vieira 1, Carlos Oscar Kieling 1, Afonso Barth 1, Cristina Targa Ferreira 1, Ursula Matte 1, Themis Reverbel da Silveira 1

1) Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil

**Summary:**

OBJECTIVE: To assess the utility of reagent strip for leukocyte esterase in the diagnosis of ascites infection in children with cirrhosis and ascites.

METHODS: Eighteen consecutive cirrhotic patients (10 females; median of age: 0.6 y; range: 0.2 y – 16 y) were included, and a total of 41 paracenteses were performed. The underlying aetiology of cirrhosis was biliary atresia (n=13), cryptogenic cirrhosis (n=3), Alagille syndrome and viral hepatitis B (1 each). The Child-Pugh Score was C in 14/18 (77.7%) and the median of PELD score was 19.5 (range: 2-38). Diagnostic abdominal paracentesis was performed on admission, and a Multistix (Bayer Pharma) reagent strip was immersed in one ascitic sample from each patient. Readings after 120 s were either negative (negative, +) or positive (++ or +++). All ascitic fluid samples were also analyzed using cytology, neutrophils count, appropriate biochemical tests and bacterial culture. RESULTS: There were 10 cases of spontaneous bacterial peritonitis (SBP), 1 cases of secondary bacterial peritonitis (SecBP), 2 cases of bacteriascites (BA) and 28 cases of culture negative non-neutrocytic ascites (CNNNA) by means of the classical criteria. The strip were positive in 10/10 cases of SBP, 1/1 case of SecBP, 1/2 cases of BA and 1/28 cases of CNNNA. In addition, 7 paracenteses performed 48 h after the diagnosis of ascites infection were tested by reagent strip. This test was positive in 7/7 of these cases, despite the improvement of PMN ascites count cell CONCLUSION: Leukocyte esterase reagent strips may provide a rapid bedside diagnosis of SBP and SecBP. Caution is recommended in cases of BA and in paracentesis controls.

P0748

**Title:**

Side effect profile versus response to pegylated interferon (peg-INF) + ribavirin in children with chronic hepatitis C virus (HCV) infection

Sanjay Bansal 1, Ivana Carey 1, Ditta Cebecauerova 1, Pushpa Subramaniam 1, Diego Vergani 1, Giorgina Mieli-Vergani 1

1) Institute of liver studies, Kings’ College Hospital, London, U.K

**Summary:**

Background: Chronic HCV infection in children is a mild but slowly progressive disease which, untreated, leads to serious complications in adulthood. Though peg-IFN /ribavirin are effective, adverse reactions are a limiting factor. Aims: To investigate whether the side effect profile of the peg-INF/Ribavirin combination correlates with: a) HCV specific Th1/Th2 adaptive immune responses; b) number of innate immune system natural killer (NK) cells; c) treatment response. Patients: 18 children (9 males, median age 12 years), treated with peg-IFN/ribavirin were divided in 14 responders (R) and 4 non-responders (NR). Methods: Clinical and laboratory data during treatment were analysed. Pre-treatment HCV-specific IFN-γ and IL-10 T cell production was evaluated by Elispot after peripheral blood mononuclear cells (PBMC) exposure to HCV antigens. Number of NK cells (CD3-CD16+CD56+) at baseline was determined by flow cytometry on PBMC. Results: Major side effects were haematological (anaemia in 13/18; neutropenia in 10/18; thrombocytopenia in 8/18) and neuropsychiatric (mood swings, depression, and self-harm in 8/18). There was no difference in frequency of haematological side effects between R and NR and no correlation between pre-treatment HCV-specific Th1/Th2 reactivity, NK cell numbers and therapy side effects. In contrast a drop in haematological indices was greater in R then NR (Hb decrease: 2.34±0.20 vs. 1.0±0.73g/dl, p=0.022; decrease in platelet count: 137±64.65 vs. 68.0±23.9x109/ml; p=0.036, decrease in neutrophil count: 2.1±0.37 vs. 1.26±0.5x 109/ml; p=0.228). 75% of NR suffered from neuropsychiatric side effects vs. 36% of R (p=0.001). There was no difference in peg-INF and/or ribavirin dose reduction between R and NR. Conclusions: While pre-treatment immunological profile does not influence occurrence and type of side effects, a significantly higher drop in haematological indices characterises responders and neuropsychiatric side effects connotes non-responders. It is possible that therapy non-adherence due to severe neuropsychiatric side effects explains fewer haematological complications as well as lack of response.

P0749

**Title:**

Value of Epstein Barr Virus ( EBV) PCR monitoring as an effective tool in early detection of and treatment of Post Transplant Lymphoproliferative Disorder (PTLD) in children undergoing solid organ transplantation.

Siddharth Jain 1, VM Sivaramakrishnan 1, C Graham 1, E Smit 1, S Beath 1, Girish Gupte 1
1) Birmingham Children’s Hospital, Birmingham, U.K.

Summary:
Background EBV infection is common in young children post-transplantation and may progress to PTLD without treatment. Newer techniques such as EBV polymerase chain reaction (PCR) may detect EBV infection early allowing pre-emptive treatment. Objective To audit the effectiveness of EBV PCR monitoring in children undergoing liver/small bowel transplantation in the liver unit, Birmingham Children’s Hospital (UK) Methods A retrospective audit was performed of the liver unit database and the EBV PCR database from January-1989 till June-2006. The diagnosis of EBV infection was according to the following criteria Before 1997 - By serology and clinical suspicion From 1997-2002- By qualitative EBV PCR After 2002 - EBV PCR >400 copies and with a log scale increase in 2 consecutive values PTLD was diagnosed in patients who were systemically unwell with evidence of lymphoma cells in tissue (gastric, duodenal and bone marrow aspirate) or in a lymph node biopsy demonstrated by histology. Monitoring protocol In liver transplant EBV PCR performed post transplant only on clinical suspicion of EBV viraemia whereas in small bowel transplant serial measurements of EBV PCR post transplant (3-6 monthly) irrespective of clinical status. Results Table Statistical analysis Liver transplant (p=0.001) Pre 2002 - PTLD/EBV infection (10/23) - 43.5% Post 2002 - PTLD/EBV infection (3/49) - 6.1% Intestinal transplant (p=0.35) Pre 2002 - PTLD/EBV infection (3/8) - 37.5% Post 2002 - PTLD/EBV infection (2/12) - 16.7% 5 patients developed PTLD in the post 2002 era as compared to 13 patients in the pre-2002 era. The difference in the incidence of PTLD before and after 2002 is statistically significant in the liver transplant group (p=0.001) whereas this difference is not statistically significant in the intestinal transplant group (p=0.35), however this is largely due to small sample size. Serial EBV PCR monitoring has led to a significant increase in the number of children with EBV viraemia but reduction in the number of children developing PTLD. The median age at diagnosis in pre-2002 era was 12 months whereas in the post-2002 era was 4 months post transplant thus allowing early treatment (reduction in immunosuppression, monoclonal treatment) and prevention mortality associated with PTLD. Conclusion Serial EBV PCR monitoring allows pre-emptive treatment modification in transplanted children with EBV viraemia and prevents progression to PTLD.

P0750

Title: Frequency and Risk Factors of Hepatitis B and D among Paediatric and Adult Patients presenting at a Tertiary Care Hospital of Karachi

sina aziz 1, sabhita shahir shaikh 1, jameela rajar 1, rana qamar 1, mohammad masroor 1
1) Dow university of health sciences, karachi, pakistan

Summary:
Objective: To study the frequency and risk factors of hepatitis B and D among patients presenting at Sarwar Zuberi Liver Centre. Patients and Methods: This study was conducted at Sarwar Zuberi Liver Centre, Medical Unit V, Civil Hospital Karachi from May to October 2007. In this ongoing study, a total of 149 HBV positive patients were enrolled. Patients from all the ethnic and age groups were included. The patients were divided in two groups: pediatrics (< 18 yrs) and adults (> 18 yrs). Anti HDV was performed on all the 149 patients, thereby determining the frequency of HDV infected patients. Preliminary data recorded on standard designed questionnaire to highlight the possible risk factors including the status of HBV immunization, history of jaundice, injection use, blood transfusion, hospitalization in the past, family history of chronic liver disease, and dental or surgical procedures. These patients were then tested for serological markers of infection including aminotransferase levels, HBeAg, anti Hbc-IgM, HBV DNA, HDV RNA and HDV genotype. Results: 60 out of 149 HBV positive patients (40.2%) belonged to the pediatric age group. Patients from all the ethnic and age groups were included. The patients were divided in two groups: pediatrics (< 18 yrs) and adults (> 18 yrs). Anti HDV was performed on all the 149 patients, thereby determining the frequency of HDV infected patients. Preliminary data recorded on standard designed questionnaire to highlight the possible risk factors including the status of HBV immunization, history of jaundice, injection use, blood transfusion, hospitalization in the past, family history of chronic liver disease, and dental or surgical procedures. These patients were then tested for serological markers of infection including aminotransferase levels, HBeAg, anti Hbc-IgM, HBV DNA, HDV RNA and HDV genotype. Results: 60 out of 149 HBV positive patients (40.2%) belonged to the pediatric age group. Overall 63 patients (42.3%) were infected with both HBV and HDV, the frequency is same in both the age groups. 27 out of 60 (45%) pediatric patients were positive for both HBV and HDV while 36 out of 89 (42.3%) among adults. Most of these patients belonged to the rural areas of Sindh (38.9%). Patients of all the age groups were found affected with HBV and HDV, (mean 23.5±11.9, range 3-60). Overall there is male dominance (76.5%). Risk factor assessment showed, in order of decreasing frequency, lack of HBV immunization (95.3%), history of injection use (90.6%), past history of jaundice (53.8%), previous hospitalization (36.5%), positive family history of chronic liver disease (27.8%), surgical or dental procedures (26.7%) and blood transfusion (14.4%). Laboratory investigations showed HBeAg (42%), HBV DNA (40.9%), anti HbcIgM (18.8%), and ALT levels >31 I.U. (81.7%) patients. HDV RNA was done in 23 out of total 63 HDV positive patients, from which 18 (78.2%) were found positive. HDV genotype done on 13 patients showed genotype I in 3 (23%) and genotype II in 10 (77%) patients. The frequency of occurrence of individual risk factors and various serological markers was similar in both the pediatrics and the adults. Conclusion: The frequency of HBV and HDV in our country is increasing especially among pediatric group, the major risk factors being lack of widespread HBV immunization and frequent misuse of injections. The results are alarming and an effective preventive programme needs to be designed by health care providers and policy makers to arrest the rising prevalence of delta hepatitis in our country. Key words: HBV, HDV, frequency, risk factors, Sarwar Zuberi Liver Centre, Civil Hospital Karachi, Pakistan.

P0751

Title: Frequency, Risk Factors, Rate of HCV Infection and outcome of the newborn in Middle and Low Socioeconomic Pregnant Population of a tertiary care hospital of Karachi
Objective: To determine the frequency, risk factors, rate of HCV infection and vertical transmission in the newborn of middle and low socioeconomic pregnant population of Karachi. Methods: This is an ongoing descriptive study conducted from Sept’2005-March 2008. The study was jointly done at the Sarwar Zuberi Liver Center and Department of Obstetrics & Gynaecology, Dow University of Health Sciences, Civil Hospital Karachi and Karachi Medical and Dental College, Abbasi Shaheed Hospital. All pregnant women seeking antenatal care were screened for Hepatitis C antibodies (Anti HCV) using 4th generation ELIZA technique. Those found positive were further investigated for HCV RNA by PCR (qualitative) and LFT’s. Spouses of all patients were also screened for Viral Hepatitis and HIV. Mothers who were PCR positive were treated postnataally by interferon therapy, after completion of at least six months lactation of their babies. All newborns were advised Anti HCV at the age of 18 months and followed up to 3 years of age. Past history of Intravenous drug use, surgical and dental procedures, blood transfusions were obtained. Labour details were collected.

Results: Out of 12000 antenatal patients screened for Anti HCV, 422 (3.51%) women were found positive. PCR results of only 253 patients is available where as 186 (73.5%) women were found PCR positive. Out of 422 women 45% had history of surgical procedure, 34% had blood transfusions, 58.8% had Intravenous drugs and 37% had dental treatments. Most of the patients had more than one risk factor. LFT’s was raised in 45.2%. ALT was 42.45±35.45 (10-160 IU). So far 249 patients delivered in which 170 (68.0%) women had delivered by spontaneous vaginal delivery (SVD), 17 (7.0%) forceps delivery, 38 (15.4%) elective and 24 (9.6%) emergency cesarian section. Out of 60 spouses screened 29 (48.3%) were found Anti HCV positive and 12 (20%) were PCR positive. None of the mothers or spouses was HIV positive. Data of 221 new born shows mean birth weight, height, OFC, 2.9±0.5, 5.1±7.9, 37±4 respectively. Forty babies of HCV-RNA –PCR positive mothers, screened to date for Anti HCV, were all negative at 18 months of age plus. Conclusion: Rate of Anti HCV +ve women is 3.51% per year. Out of 253 women 186 (73.5%) were PCR positive. All newborns screened at 18 months of age were HCV antibody negative.

P0752

Title:
GLYCOGEN STORAGE DISEASE TYPE I: EVOLUTION OF 17 PATIENTS AFTER NUTRITIONAL MANAGEMENT

Solange Heller 1, Peedro Valencia 1, Liliana Worona 1, Alejandra Consuelo 1, Betzabe Salgado 1, Nery E Solis 1
1) Hospital Infantil de México, Mexico DF, Mexico

Summary:
Objective: To describe evolution of children with glycogen storage disease type I (GSD type I) after nutritional management. Methods: Retrospective analysis of patients with diagnosis of GSD type I, that were admitted to the hospital and outpatient clinic from 1996 to 2006, with the following inclusion criteria: Hepatomegaly, doll face, growth failure, liver histological changes compatible with GSD type I and laboratory abnormalities like hypoglycemia, elevated liver enzymes, hypercholesterolemia, hypertriglyceridemia, lactic acidosis, elevated uric acid and follow up of at least one year after nutritional management with diet with a average of 1200-1400 Kcal/day, with 65% carbohydrates, 23% lipids and 13% proteins, frequent carbohydrates with ingestion of an average of 1.8 g/kg/day of raw cornstarch 3 times/24 hours, and other slow releasing glucose carbohydrates, dietary restriction of fructose and galactose and supplementation of calcium and multivitamins. Follow up consisted in measuring every 3 months weight, length/age, nutritional management, cholesterol, triglycerides, lactate, uric acid, glucose, hemoglobin, leucocytes, evaluation of neutropenia and liver enzymes Results: 17 children were included in the study, 53% females and 47% males, with an medium age of diagnosis of 31.7 months (range of ages 3 months to 13.5 years); the referral reason was hepatomegaly in 13 cases (76%), dislipidemia in 2(12%) and fever, diarrhea and recurrent infections in 2(12%).14 were diagnosed as GSD type Ia and 3 as type Ib. They all received nutritional management and had a nutritional evaluation every 3 months. All patients gained weight (average 4.2 kg), length (average of 11 cm en 3 years), length for age increased in 5 patients(29%) and in 1(71%) there was growth retardation. Cholesterol had an average elevation of 258 mg/dl in the first evaluation and registered lower levels in subsequent evaluations. Liver enzymes, triglycerides and lactate were elevated, improved during treatment. Hypoglycemia was present in 53% of patients in the first evaluation and 12% in the last one. Hemoglobin was normal in all patients and neutropenia present in 3 cases Conclusion: Evolution of our patients with GSD I is very similar to the one reported in the literature. Dislipidemia does not improved very much with nutritional management and the use of lipid lowering agents might be beneficial.

P0753

Title:
Mutation analysis of UGT1A1 Gene in Korean Patients with Crigler-Najjar Syndrome

Ho Jun Lee 1, Soon Yoe 1, Goeong Hoon Kang 1, Jae Joon Han 1, Jae Sung Ko 1, Hye Ran Yang 1, Ju Young Chang 1, Jeong Kee Seo 1, Jeong Kee Seo 1

1) Dow university of health sciences, karachi, Pakistan 2) karachi medical and dental college, karachi, Pakistan
Summary:
Objective: Crigler-Najjar syndrome type II is usually inherited as autosomal recessive conditions and is characterized by non-hemolytic unconjugated hyperbilirubinaemia. It is caused by an incomplete deficiency (less than 10%) of hepatic bilirubin uridine diphosphate glucuronosyltransferase (UGT1A1) activity and its serum bilirubin level is 8-25mg/dl. Amino acid substitutions resulting from missense mutations in UGT1A1 gene were found commonly but the mutation analysis of UGT1A1 gene in Crigler-Najjar syndrome type II was not reported in Korean children yet. The aim of this study is to investigate the mutations of UGT1A1 in Korean children with Crigler-Najjar syndrome type II. Methods: Four children with Crigler-Najjar syndrome type II and twenty five healthy controls were enrolled in our study. Genomic DNA was isolated from leukocytes using phenol chloroform method. All five exons of UGT1A1 were amplified by polymerase chain reaction. The amplified products were purified and the nucleotide sequence was determined by direct sequencing. Results: Three patients were homozygous for pGly71Arg in exon 1 and one patient was heterozygous. The allele frequency of G71R was 0.88 in the patients and 0.16 in healthy controls. Homozygous for pTyr486Asp was observed in all patients with Crigler-Najjar syndrome type II and was not found in healthy controls. Conclusion: Identification of pGly71Arg and pTyr486Asp is important for the diagnosis of Crigler-Najjar syndrome type II in Korean children.

Title:
Natural history of chronic HBV infection in Children of Northern Greece: an 11-year follow-up.

Summary:
Background-Aim: The natural history of chronic HBV infection in children has been determined from limited data that vary by geographic region. The aim of this retrospective study was to evaluate the natural history of chronic HBV infection in children from different ethnic origins of Northern Greece, during an 11-year follow-up period. Patients: Sixty-one HBsAg (+) patients (M=38), aged 1,5-16 years at presentation, were followed-up for a mean period of 4 (1-11) years. 43% of children were siblings. 72% were native Greeks, 23% Albanians and 5% Muslims. Their case records were reviewed retrospectively. Results: The transmission of HBV was vertical in 53%, horizontal in 39% and unknown in 8%. At presentation, 39 of 61 (64%) were HBeAg (+) / HBeAb (-). All of them were HBV-DNA (+) and 17 of 39 (44%) had ALT>2x upper normal limit. From the 22 (36%) HBeAg (-) / HBeAb (+) children at presentation, 18 (82%) had normal ALT and 15 of 18 (83%) had HBV-DNA (-). During the follow-up period, in the HBeAg (+) / HBeAb (-) group, seroconversion to HBeAb was observed in 8 of 39 (21%). Five of 8 (63%) children had biochemical remission and 1 of 5 lost HBV-DNA. In the HBeAg (-) / HBeAb (+) group, 4 of 7 with HBV-DNA (+), experienced HBV replication without ALT elevation. In 25 of 61 children (all of them HBeAg (+) / HBeAb (-)), a liver biopsy was performed. Liver histology showed mild activity/mild fibrosis in 44% and mild activity/moderate fibrosis in 32% of children. None of 61 children showed cirrhosis. Conclusions: 1. In children of Northern Greece, vertical transmission is more common. 2. The presence of chronic HBV infection in siblings, suggests inadequate knowledge of prevention of HBV infection. 3. Serocconversion to HBeAb was observed in 8 of 39 (21%) in HBeAg (+) children during the follow-up period. 4. Liver histology showed mild lesions in children with chronic HBV infection.

Title: A case of acute hepatitis with Mycoplasma pneumoniae and multiple coagulation factors deficiency

Summary
We report a case of acute severe hepatitis with Mycoplasma pneumoniae infection with multiple coagulation factors deficiency. A 5-year-old boy, previously healthy, was admitted with pneumonia. Mycoplasma pneumoniae infection was confirmed by serology testing. The liver enzymes were elevated on admission without any past medical history. After treatment with azithromycin for three days, the pneumonia improved but the hepatitis was acutely aggravated. The partial thromboplastin time (PIT) was prolonged and multiple coagulation factors deficiency developed. The liver biopsy revealed features consistent with acute hepatitis. A week later, the liver enzymes nearly normalized spontaneously. Normalization of the prolonged PIT and coagulation factors was observed several months later. This is the first case of acute severe hepatitis with multiple coagulation
factors deficiency associated with mycoplasma infection.

P0756  
**Title:** Prevalence of Neonatal Intrahepatic Cholestasis Caused by Citrin Deficiency (NICCD) in Idiopathic Cholestasis in Thai infants  
Suporn Treepongkaruna 1, Suttiruk Jitraruch 1, Duangrurdee Watanasirichaigoon 1, Porawee Kodchari 1, Paneeya Pienvichit 1, Pim Suwannarat 1  
1) Department of Pediatrics, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand  

**Summary:**  
Background: Citrin is a mitochondrial aspartate-glutamate carrier encoded by SLC25A13 gene and its deficiency causes adult-onset type II citrulinemia and neonatal intrahepatic cholestasis caused by citrin deficiency (NICCD). Objectives: To explore the prevalence of NICCD in idiopathic cholestasis in Thai infants by genetic analysis, compare the clinical manifestations and natural history of idiopathic cholestasis in infants with and without NICCD and analyze the spectrum of SLC25A13 mutation in Thai infants with NICCD. Methods: We conducted a cohort study in infants who were diagnosed of idiopathic neonatal hepatitis and idiopathic cholestasis, the first group was the old cases diagnosed during the past 10 years, from Oct 1996 to Sep 2006, and another group was new cases diagnosed between Oct 2006 and Jan 2008. Demographic data, laboratory and clinical course were recorded. Plasma amino acid and genetic analysis was studied in all patients. Positive SLC25A13 mutations indicated NICCD. Genetic analysis of family members of the positive case was performed. Results: Twenty-five patients were enrolled in the study including 20 old and 5 new cases. Three patients (12%) were diagnosed of NICCD. Infants with NICCD seem to have more severe biochemical profiles than those without NICCD. The laboratory finding at first presentation showed elevated alkaline phosphatase in all these 3 cases, prolonged PT (2 cases), and hypoalbuminemia (2 cases). Elevated citrulline, methionine, tyrosine, threonine/serine ratio and decreased Fisher ratio, with galactosuria and marked elevated alpha-fetoprotein was found in only one case. Homozygous 851del4bp mutation was found in two patients whose parents were confirmed to be heterozygotes for the mutation. The third case was heterozygous for a paternally inherited P502L mutation, and another, yet unidentified mutation. The liver manifestations of the patients with 851del4bp mutation completely resolved by 12 months of age, whereas the P502L patient had persistent jaundice. In patients without NICCD, jaundice resolved in 18 out of 22 cases (81.8%). Conclusion: NICCD should be considered in the differential diagnosis of idiopathic cholestasis in infants. The 851del4bp is the major genotype identified in Thai patients; however, a larger scale study is required to determine an accurate prevalence of NICCD and SLC25A13 mutation spectrum in Thai population.

P0757  
**Title:** Etiology, clinical features and outcome of liver abscess in children  
Vikas Arora 1, Anshu Srivastava 1, Ujjal Poddar 1, Surender K Yachha 1, Sanjay S Baijal 1  
1) Sanjay Gandhi Postgraduate Institute of Medical Sciences,, Lucknow, India.  

**Summary**  
Objective: There is scarcity of data on management of liver abscess in children. This study was done to evaluate the etiology, clinical profile and outcome of liver abscess in children. Methods: Children admitted with liver abscess (presence of suggestive clinical profile and ultrasonography showing an abscess) from January 2000 to December 2007 were enrolled. All patients were treated with appropriate antimicrobials and percutaneous or surgical drainage was done as required. Pus culture and amoebic serology was done. Children with a positive serology and sterile pus culture were diagnosed as amoebic abscess. Results: Thirty-five children (24 boys, mean age 6.9 ± 3.8 years) with liver abscess were evaluated. Majority were pyogenic (n=27, 77%) while 8 were amoebic. The main symptoms were fever (n=34) and abdominal pain (n=31). Respiratory distress, melena and jaundice were seen in 5, 3 and 2 cases respectively. Tender hepatomegaly was present in 31 cases (88.5%). Right lobe was involved in 30 and multiple lesions in 13 cases. Complications were seen in 17(48.5%) subjects: rupture in 13, hemobilia in 2, colocutaneous fistula, and biliary communication in 1 patient each. In amoebic group, 3 settled with conservative therapy and 5 needed intervention (single time aspiration in 2, percutaneous catheter drainage [PCD] in 3). In the pyogenic group, pus culture was positive in 62% & staphylococcus aureus was the commonest organism (33%). Intervention was required in 24 cases: single time aspiration in 8, PCD in 10 and surgical drainage in 6 patients. Subjects with pyogenic and amoebic abscess were similar in presentation but abscess rupture (13/27 vs. 0/8, p<0.01) was seen only in pyogenic. One patient died of thrombocytopenia related bleed and 34 recovered with a mean hospital stay of 14±7 days. On follow up (mean 118±97 days), complete ultrasonographic resolution was seen in a median period of 30 days in all cases. Conclusion: In children majority of abscesses are pyogenic with staphylococcus being the commonest organism. Pyogenic and amoebic abscess are clinically similar but complications are more common in pyogenic liver abscess. Nearly 80% cases need drainage.
Cytokine profiles among exchange transfusion in transient myeloproliferative disorder with hepatic fibrosis.

Takeshi Ninchoji 1, Tokio Sugiuura 1, Kenji Goto 2, Koichi Ito 2, Masanori Kouwaki 1, Norihisa Koyama 1
1) Department of Pediatrics Toyohashi Municipal Hospital, Toyohashi, Japan 2) Department of Pediatrics Nagoya City University Graduate School of Medical Sciences, Nagoya, Japan

Summary

Objective: The study aimed to explore the cytokine profiles before and after exchange transfusion in transient myeloproliferative disorder with hepatic fibrosis to better understand the disease mechanism.

Methods: Cytokines were measured before and after exchange transfusion in patients with transient myeloproliferative disorder with hepatic fibrosis. Changes in cytokine levels were analyzed to assess their role in the disease.

Results: Significant changes were observed in cytokine profiles following exchange transfusion, indicating a potential role for cytokines in the disease process.

Conclusion: Exchange transfusion may influence cytokine levels in transient myeloproliferative disorder with hepatic fibrosis, warranting further investigation into the cytokine role in this condition.
Summary

Transient myeloproliferative disorder (TMD) occurs in about 10% of neonates with Down syndrome and is characterized by an increase in megakaryoblastic cells in peripheral blood. The disease is usually self-limiting and undergoes spontaneous regression within the first few months of life. However, in a minority of patients with TMD, it may result in fatal fibrosis of severe organs, especially the liver. Recent studies have revealed that some cytokines such as platelet-derived growth factor (PDGF) and transforming growth factor (TGF)-β1 produced by megakaryoblasts can cause liver fibrosis in TMD patients. To clarify cytokine profiles among exchange transfusion in fulminant TMD with hepatic fibrosis, cytokines were measured before and after exchange transfusion. Methods: A 3.3 kg female newborn was delivered by emergency cesarean section at 37 weeks of gestation. Her Apgar score at 1 minute was 4 and 5 minutes was 7, respectively. The newborn was diagnosed with Down syndrome phenotypically and karyotyping (47, XX, inv(6)(p11.2q15), +21). She showed hydrops fetalis, respiratory distress, and hepatomegaly. Laboratory data showed a high leukocyte count with blasts cells in her peripheral blood and liver dysfunction. The day of life 1 she was treated by exchange transfusion. Her respiratory distress and multi organ failure progressed and she died at 16 days of life. Autopsy showed a hepatomegaly, intrahepatic cholestasis, duodenal atresia, and extramedullary hematopoeis. Microscopic examination showed hepatic fibrosis and degeneration of hepatocyte. Measurement of cytokines PDGF was measured by EIA and TGF-β1 was measured by ELISA. Twelve cytokines of IL (interleukin)-1β, IL-1α, IL-2, IL-4, IL-6, IL-7, IL-8, IL-10, IL-12, GM-CSF (granulocyte macrophage colony stimulating factor), IFN (interferon)-γ and TNF (tumor necrosis factor) were measured in 25 μL of serum with a ProteoPlex 16-WELL Human Cytokine Array Kit. Results: TGF-β1, IL-7, IL-8, IFN-γ were high elevated. Especially, TGF-β1 and IL-7 were extremely high before exchange transfusion and decreased after exchange transfusion. Conclusion: Elevated cytokines, such as TGF-β1, IL-7, IL-8, IFN-γ, were associated with hepatic fibrosis of TMD. Exchange transfusion might be effective for reduction not only abnormal proliferative white blood cell but also cytokines.

P0761

Title:
Pattern of Pediatric Chronic Liver Disease in Oman

Tawfiq Taki Al-Lawati 1, Mariyam Gerorge 1
1) Royal Hospital, Muscat, Oman

Summary:

There are no recent data published about the pattern of liver disease in the Arabian Gulf area. This is the first local paper addressing this issue in an area with a high rate of consanguineous marriage. Aim: To assess the magnitude of paediatric liver diseases in Royal Hospital, the major referral centre for paediatric gastrointestinal and liver disease. Objectives: Document 1) The number of patients and type of liver diseases encountered in Royal Hospital. 2) The course of illnesses and complications in these patients. Methods: Retrospective study of all patients admitted, referred or seen in Paediatric OPD in Royal Hospital for liver disease in the period between 1/1/2005 till 1/1/2007. Results: Among 79 patients with liver disease seen or referred to Royal Hospital, 3 patients died during the study period, 3 had liver transplant and 5 patients were followed up for post liver transplant care. The parental consanguinity rate was 78% in these patients and the average age of diagnosis was 5 years. The most common liver disease, 28% (22/79), was Progressive Familial Intrah Hepatic Cholestasis, followed by fibrocystic disease of liver and kidney 17/79 (20%). Other less common disease included biliary atresia, galactosaemia, autoimmune hepatitis and some others. Eighty five percent of the diseases were autosomally inherited conditions. Only 12 patients had liver disease not directly related to known hereditary factors. There were no cases of paracetamol toxicity, alpha 1 anti-trypsin deficiency or Wilson's disease. Regional distribution pattern showed 1/3 of liver disease patients from the Sharqiya region (eastern Oman). About 75% of the patients had growth retardation and 1/3 had liver cirrhosis at diagnosis. Conclusion: Liver diseases in children in Oman are mainly hereditary. Liver transplant is the only effective therapeutic modality. As transplant is not readily available, family counseling is needed to minimize consanguineous marriages, particularly in families with known affected individuals.

P0762

Title:
More rapid progression of primary sclerosing cholangitis (PSC) in adults compared to juvenile PSC at 10 years follow-up

Thomas H Casswall 1, Bo Lindberg 2, Björn Fischler 1, Antal Németh 1, Annika Bergquist 3
1) Paediatric Gastroenterology, Hepatology and Nutrition, Stockholm, Sweden 2) Radiology, Stockholm, Sweden 3) Medicine, Stockholm, Sweden

Summary:

Objective: Retrospective study of long-term natural course of primary sclerosing cholangitis (PSC) in children as compared to adults, with the emphasis on cholangiographic findings and clinical outcome. Methods: Consecutive patients (20 children and 20 adults) with PSC, diagnosed either by cholangiography (ERCP or MRCP) or liver biopsy, were included. Clinical, biochemical, and radiological features were compared at diagnosis and after 10 years. One adult was lost during the follow-up (f/u). Cholangiographic findings were reevaluated and classified according to extension and
severity (scoring 0-3) of strictures. Results: At diagnosis the 20 juvenile patients (16 boys) had a mean age of 13 years (SD ±3.5) while the adults (9 males) were 40 years old (SD ±15.1). The frequency of inflammatory bowel disease (IBD) was 18 out of 20 (90%), and 16 out of 19 (84%), respectively. Colectomy had been performed in 2 children (due to IBD-activity) after 3.8 and 8.5 years and in 5 adults (due to dysplasia in 3 and activity in 2) after 1, 4.7, 6, 6.3, and 6.6 years. The time from the 1st pathological liver test to PSC-diagnosis was 1.5 (SD ±2.3) years for the children as compared to 6.8 (SD ±7.6) years (p <0.01) in adults. At diagnosis the adults had more pronounced extrahepatic (EH) strictures as compared to the children, mean score 1.75 (± 0.77) and 0.67 (± 0.91) (p < 0.01) respectively, while the extent of the intrahepatic (IH) changes was similar. After 10 years' follow-up, 42% of the children had IE progression compared to 5% of the children (p <0.01), however the progression of EH changes was not significantly different between the groups (32 vs. 16%). Eight adults (42%) and none of the children had received stent due to strictures. Three adults (16%) and no child developed bile duct cancer (BDC). After 10 years 20/20 children were alive (1 transplanted) as compared to 18/19 adults (2 transplanted; 1 of them dead). Conclusion: According to this study most cases of juvenile PSC seem to have a more benign natural course during the first decade than adults, with slower progression, less EH strictures and no risk for malignancy. This might be explained either with different clinical nature or with longer presymptomatic duration in adults leading to later diagnosis.

**P0763**

**Title:** Vancomycin as treatment for juvenile Primary Sclerosing Cholangitis (JPSC): a case series report

Thomas H Casswall 1, Joanna Marlaka-Ramirez 2, Antal Németh 1
1) Pediatric Gastroenterology, Hepatology and Nutrition, Stockholm, Sweden 2) Pediatrics, Gothenburg, Sweden

**Summary:**
Objective: JPSC is a progressive inflammation targeted against the cholangiocytes frequently leading to cirrhosis. The aetiology and pathogenesis is unclear but current cases have autoimmune traits. The treatment has often poor results. We describe 3 girls with early-onset JPSC treated successfully with oral Vancomycin (Vanco). Methods: Oral Vancomycin was continuously given 7.5 mg/kg 2-4 times daily. The drug is not absorbed and its effect is limited to the intestinal lumen. Results: Case 1: A 2-year-old girl presented with autoimmune hepatitis. During the following 2 yrs she was treated with aggressive immunosuppression (IS) with poor results. Several relapses were associated with bloody diarrhea, occasionally associated with C. difficile. Oral Vancomycin was started and her liver function gradually normalised. IS was tapered without relapse. For the last 11 years she has been on oral Vancomycin alone and she is clinically/biochemically healthy. Repeated MRCPs show multiple stenoses. Four attempts to stop Vancomycin resulted in immediate dramatic clinical and biochemical relapse. Case 2: A 5.5 yrs old girl was diagnosed with JPSC and cirrhosis. She had elevated autoantibodies and IgG. ERCP showed severe intra- and extrahepatic stenoses. She was in a poor clinical and biochemical state. Following case 1 oral Vancomycin treatment was started together with ursodeoxycholic acid (UDCA). Nine month later the girl is free from symptoms, her liver function is markedly improved. Case 3: A 1½ yrs old girl presented with indeterminate colitis. She had no autoantibodies and her IgG level was normal. Although intensively treated with betamethasone and olsalazine, she deteriorated clinically and 6 months later she had advanced liver fibrosis due to PSC. One year after onset oral Vancomycin treatment was started. Her IS was gradually tapered and for the last 1.5 years she has remained clinically and biochemically free from symptoms on Vanco and UDCA alone. Conclusion: The dramatic and reproducible effect of the treatment is striking. All 3 girls were toddlers at onset and only 2 of them had autoimmune traits. This suggests a microbiological, rather than immunological mechanism of action. Further studies are needed to confirm our findings.

**P0764**

**Title:** Effects of pegylated interferon α-2a with hepatitis C virus-associated membranoproliferative glomerulonephritis

Tokio Sugjura 1, Takuji Yamada 1, Yuri Kimpara 1, Naoya Fujita 1, Kenji Goto 2, Norihisa Koyama 1
1) Department of Pediatrics, Toyohashi Municipal Hospital, Toyohashi, Japan 2) Department of Pediatrics, Nagoya City University, Graduate School of Medical Sciences, Nagoya, Japan

**Summary:**
Objective: Hepatitis C virus (HCV) infection leads to chronic liver disease, but has also been associated with extrahepatic manifestations such as renal disease. Membranoproliferative glomerulonephritis (MPGN) is the most common renal disease associated with HCV. Although renal disease related to HCV in adults has been well studied, in children it has not been well studied because it is rare. A recent study found that antiviral therapy was effective for adult patients with HCV-associated MPGN. To evaluate the effect of antiviral therapy in child, a girl with HCV-associated MPGN was started with pegylated interferon (PEG-IFN) α-2a. Methods: Patient: A 9-year-old girl was referred to our hospital due to proteinuria found on a school screening urine test. She had persistent proteinuria of about 1 g/day and no hematuria. The patient’s proteinuria was first treated with an angiotensin-converting enzyme inhibitor and dipryramide. Her HCV genotype was 1b, and her virus load was high. The initial renal biopsy showed mesangial proliferation and partial double contours of the basement membrane on light microscopy and positive immunofluorescence staining with immunoglobulin M, immunoglobulin G, C3, and fibrinogen. Electron microscopy of the biopsy specimens showed doubling of the basement
membrane and subendothelial deposits. Liver biopsy showed moderate activity, moderate fibrosis, piecemeal necrosis, bridging fibrosis, and no malignancy. Anti viral therapy; Anti-HCV therapy with PEG-IFN α-2a was given every week by subcutaneous injection for 48 weeks. The patient was evaluated weekly during treatment and followed for 24 months from the start of antiviral therapy. Results: Antiviral therapy was generally well tolerated and was continued for 48 weeks. Four weeks after the start of therapy, her HCV RNA became negative. The patient’s proteinuria decreased, and her serum creatinine was not changed. A sustained virological response, defined as a negative HCV RNA at least 24 weeks after antiviral treatment, was achieved. The second renal biopsy done at the end of antiviral therapy showed improvement of the MPGN. Conclusion: Although HCV-associated renal diseases are rare in children, children with nephritis should be tested for HCV. Anti-HCV therapy with PEG-IFN is safe and effective in children with HCV-associated MPGN.

P0766

Title: Nonalcoholic fatty liver disease in overweight and obese children in Romania

Tudor L Pop 1, Nicolae Miu 1, Rodica E Concean 1, Gabriel Domnariu 1, Alexandru Pirvan 1
1) University of Medicine and Pharmacy, 2nd Pediatric Clinic, Cluj-Napoca, Romania

Summary:
Background: As worldwide, in Romania, during the last 20 years is a real epidemic of pediatric obesity and pediatric nonalcoholic fatty liver disease (NAFLD) is diagnosed more frequently now. Objective: To evaluate the prevalence of NAFLD in a cohort of overweight and obese pediatric patients, followed-up in a pediatric hospital in Romania. To find if there is a correlation between the degree of obesity and liver tests, ecogenicity of the liver at ultrasound examination or colesterol and trygliceride serum level. Material and methods: We have studied retrospectively 51 children (6 each boys and girls; median age 6.5 years, range, 3-15) with AIH. The children were divided into 2 groups according to the pathological diagnosis, acute type AIH (AIH-A) and chronic type AIH (AIH-C). Clinico-pathological features were compared between two groups. Modified histological activity index (modified HAI) was used for semi-quantitative analysis of necro-inflammatory changes and fibrosis. Results The median score of AIH scoring system before treatment was significantly lower in AIH-A than in AIH-C. The necro-inflammatory score of modified HAI was significantly higher in AIH-A than in AIH-C. In the each category, the score of category B (confluent necrosis) and C (focal lytic necrosis, apoptosis and focal inflammation) were significantly higher in AIH-A. The interface hepatitis was observed in all children; while necro-inflammatory changes in centrilobular areas were shown in 8 children (66.7%). Giant cell formation of hepatocytes was observed in 7 (58.3%) and significantly more frequent in AIH-A. No patient had complete cirrhosis; though portal tracts were expanded by an inflammatory infiltrates in which lymphocytes rather than plasma cells were predominant. Bile duct lesions were observed in 11 cases (91.7%) and periductal fibrosis, which was frequently observed in PSC, in 2 children. Conclusion We concluded that the pathological features of AIH in childhood were the existence of both interface hepatitis and marked centrilobular necro-inflammatory lesions, especially in AIH-A, but that they rarely developing to cirrhosis at initial biopsy. Furthermore, it is difficult to distinguish primary sclerosing cholangitis from AIH, because bile duct lesions are frequently observed.
transaminases and ultrasound examination could represent screening tools for diagnosing NAFLD, but there is no correlation between BMI z-score and these changes. In patients with NAFLD, BMI is not correlated and will not predict the severity of liver disease.

**P0768**

**Title:** Apoptosis involvement in the pathogenesis of Hepatitis C virus (HCV) chronic infection. Comparative analysis of two series of pediatrics and adults patients.

Valpa Pamela 1, Elena De Matteo 1, Gisela Giacove 2, Maria Cristina Galoppo 2, Carlos Guma 3, Maria Victoria Preciado 1
1) Laboratory of Molecular Biology, Pathology Division, Ricardo Gutiérrez Children Hospital, Buenos Aires, Argentina 2) Hepatology Service, Ricardo Gutiérrez Children Hospital, Buenos Aires, Argentina 3) Gastroenterology Division, Eva Perón Hospital, Buenos Aires, Argentina

**Summary:**

Histological evidences suggest apoptosis involvement in HCV chronic infection derived liver damage. Many of the changes in apoptotic cells are due caspases activation. Caspase substrates include cytoskeleton proteins, being cytokeratin-18 (CK18) predominant of hepatocytes. The CK18 cleavage constitutes an early event of apoptosis and contributes to cellular collapse. Our aim was to determine the presence of early apoptosis markers, activated caspase-3 (casp-3a) and caspase-generated Ck-18 fragment (M30) in liver biopsies of patients with HCV chronic infection and to relate them to biochemical, virological and histological parameters. Twenty children (median age: 8.5 years [range 1-17 yrs]), 12 adults (median age: 46.5 years [range 35-57 yrs]) and 8 controls (congenital liver fibrosis) were analyzed. Stage of fibrosis (F), hepatitis (H), steatosis, lymphoid follicles and bile duct damage were assessed in liver biopsies. Casp-3a and M30 were evaluated by immunohistochemistry. Results were expressed as n° positive hepatocytes/n° total hepatocytes in 20 high-power fields (x1000). In both groups genotype 1 was predominant. ALT values (high ALT: 67% in children vs. 100% in adults) did not show differences between series. Adults' histological profile displayed 8% F1, 42% F2, 33% F3 and 17% cirrhosis; 42% moderate H and 42% severe H, meanwhile in children neither cirrhosis nor severe hepatitis were observed (5% F0, 45% F1, 45% F2 and 10% F3: 40% mild H and 60% moderate H). Casp-3a staining was higher in adult than in children (median: 0.16 vs. 0.05), as well as M30 (median: 0.01 vs. 0.007), but only casp-3a was associated with worse fibrosis stages in children (p=0.01). Steatosis was present in both series, but it was more severe and comprised higher n° cases in adults (92% versus 60%). An association between casp-3a and the severity of steatosis was observed in adults (p=0.05). Association between apoptosis and histological parameters like hepatitis, lymphoid follicles and bile duct damage was not observed in any group. Controls did show neither M30 nor casp-3a labeling. Apoptosis was linked to HCV infection pathogenesis in both series. In children the virus would be directly involved in apoptosis activation, which in turn would contribute to fibrosis development. Meanwhile, in adults apart from direct virus effect, enhanced oxidative stress induced by steatosis may also play a role in apoptosis activation, reflecting altogether a more severe liver damage.

**P0769**

**Title:** Apoptosis markers in liver biopsy of non-alcoholic steatohepatitis in pediatric patients

Pamela Valva 1, Elena De Matteo 1, Marcela Galoppo 2, Alejandra Pedreira 2, Maria Cristina Galoppo 2, Maria Victoria Preciado 1
1) Laboratory of Molecular Biology, Pathology Division, Ricardo Gutiérrez Children Hospital, Buenos Aires, Argentina 2) Hepatology Service, Ricardo Gutiérrez Children Hospital, Buenos Aires, Argentina

**Summary:**

The natural history of pediatric non-alcoholic steatohepatitis (NASH) is still unknown; however there have been described histological differences between adult and pediatric cases. Apoptosis may play an important role in pathophysiological pathways involved in liver damage and progression. Our aim was to detect early apoptosis markers, activated caspase-3 (casp-3a) and caspase-generated cytokeratin-18 fragment (M30), in hepatocytes and to correlate their presence with clinical, serological and histological characteristics in pediatric NASH. Twenty-five liver biopsies from NASH patients [median age: 11 years (range 18 mo-18 yrs); 68% male] and 8 control (congenital liver fibrosis) were evaluated. Records were reviewed for serum AST, ALT, cholesterol, triglycerides and body mass index (BMI). Samples were semi-quantitatively graded for activity (steatosis, inflammation and ballooning) and fibrosis. Casp-3a and M30 were evaluated by immunohistochemistry. Results were expressed as n° positive hepatocytes/n° total hepatocytes in 20 high-power fields (x1000). BMI was elevated in 92% cases (44% obese, 48% overweight). Serum AST and ALT at time of biopsy were elevated in 32% and 68% cases, respectively. Abnormal lipid profile was found in 77% of patients. Sixty percent of biopsies presented lobular steatosis grade 3, 84% lobular inflammatory activity grade 1, 72 % grade 1 ballooning and 76% fibrosis stage 3. Only one patient had cirrhosis. Our series shared histological characteristics of both adult and pediatric types previously described. On H&E stained sections, non-apoptotic cells were identified. M30 staining [median: 0.041 (0.003-0.20)] was associated with milder fibrosis (p=0.02) and inflammation (p=0.07) but not with steatosis. Casp-3a detection [median: 0.11 (0.004-0.26)] was also associated with low inflammatory grade (p=0.03) but not with fibrosis and steatosis. Controls did not show M30 and casp-3a staining. This study reveals interesting differential features regarding to NASH histological characteristics.
and apoptosis markers compared with previous adult reports. Casp-3a and M30 staining enhances detection of apoptotic cells compared with H&E. Apoptosis association with mild fibrosis and inflammation, but not with steatosis may suggest that it is an early event in the course of the histological damage progression. Measurement of different components of the apoptotic pathway may represent useful markers to understand the pathogenesis of NASH.

**P0770**

**Title:** Pediatric Hepatitis C virus (HCV) chronic infection: A potential serum marker reflects liver apoptosis and degree of steatosis

Pamela Valva 1, Elena De Matteo 1, María Inés Gismondi 1, Carol Lezama 2, María Cristina Galoppo 2, María Victoria Preciado 1

1) Laboratory of Molecular Biology, Pathology Division, Ricardo Gutiérrez Children Hospital, Buenos Aires, Argentina 2) Hepatology Service, Ricardo Gutiérrez Children Hospital, Buenos Aires, Argentina

**Summary:**

In Hepatitis C virus chronic infection apoptosis may play a role in pathogenesis as well as steatosis may influence disease progression. Cytokeratins (CK) have been studied as serum markers of liver disease. Recent evidence suggests that CK-18 is cleaved by caspases and released from apoptotic cells. Our aim was to detect early apoptosis markers in liver biopsies and serum samples from pediatric HCV+ patients and to assess the usefulness of a serum marker of liver injury progression. Twenty patients [median age: 8.5 years (range 1-17 yrs)] were included. Fibrosis (F), hepatitis (H), steatosis, lymphoid follicles and bile duct damage were assessed in liver biopsies. HCV infected hepatocytes (NS3) and apoptosis markers (activated caspase-3 [casp-3a] and caspase-generated CK-18 fragment [M30]) were evaluated by immunohistochemistry. Results were expressed as nº positive hepatocytes/nº total hepatocytes in 20 high-power fields (x1000). A subgroup of 14 serum samples, at time of biopsy, M30 was quantified. A group of 8 controls was included. Forty percent of biopsies displayed F1, 50% F2 and 10% F3. Thirty five percent showed mild H and 65% moderate H. No patient displayed cirrhosis or severe H. Sixty percent of biopsies showed variable steatosis (<10-85%), 45% lymphoid follicles and 75% bile duct damage. All patients’ liver samples showed NS3 labeling [median: 0.22 (0.004-0.88)], 90% casp-3a [median: 0.06 (0.003-0.256)] and 70% M30 [median: 0.015 (0.002-0.14)]. NS3 labeling did not display association with worse histological parameters, but showed statistically significant correlation with casp-3a (r=0.70; p=0.0007). Concerning apoptosis markers, only casp-3a was associated with high fibrosis stages (p=0.01), but not with other histological parameters. Controls did not show NS3, M30 or casp-3a labeling. Serum M30 values [median: 117.59U/L (95.35-794.59)] were significantly higher in HCV+ patients than in controls [median: 87.28U/L (72.90-94.23)] (p<0.0001). A correlation was observed between serum M30 and steatosis (r=0.60; p=0.02) as well as it was high in patients with advanced fibrosis. HCV would not have a direct effect on histological variables but it would be involved in liver damage through apoptosis induction. Both liver and serum apoptosis markers detected reflect liver injury. Although a greater children cohort must be analyzed, M30 quantification in serum might be useful as a maker to detect the extent of liver steatosis and fibrosis.

**P0771**

**Title:**

Indian childhood cirrhosis (ICC) in North West India: Fire under the ashes!!!

Thapa BR 1, Rawal P 1, Gupta V 1, Dass A 1, Prasad R 1, Singh K 1

1) Division of Pediatric Gastroenterology, SSGE, Dept of Biochemistry and Dept of Pathology, Postgraduate Institute of Medical Education and Research, Chandigarh, India

**Summary:**

Aim- To study the varied clinical presentations, investigation and outcome of ICC Methods- All the consecutive suspected cases of ICC coming to the Pediatric Gastroenterology unit at PGIMER from Jan 95 to Dec 2004 were studied. All of them underwent detailed history and physical examination. The clinical diagnosis of ICC was based on large hepatomegaly, with a firm to hard liver having sharp leafy margins. Patients underwent Hemogram (Hb), LFT, RFT, coagulogram, plasma Hb, urine Hb and ultrasound abdomen. Urine copper estimation was done before and after D Penicillamine in selected cases. Liver biopsy was done in patients who had normal coagulation parameters. Upper gastrointestinal endoscopy (UGIE) was carried out whenever feasible. All patients were put on oral D Penicillamine. Results- Total of 80 patients in the age group of 8 months to 3 years (mean 18.4±17.69 months) were studied. M: F was 5.2:1. History of exposure to copper vessels was found in 77(96.2%). Majority were top fed. Acute presentation (<2 weeks) was seen in 22 (27.5%) while others had an insidious onset (72.5%). All the patients seen had a history of irritability. Clinically majority had a decompensated (70%) liver disease. The LFT revealed the mean bilirubin levels to be 8.98±10.52 mg/dl and the mean SGOT/SGPT levels were 174.89 and 110.78 IU. Hypoalbuminemia was seen in 53(66.25%) and coagulopathy in 51 (63.75%). Ultrasound revealed hepatomegaly with altered echotexture along with splenomegaly and ascites in few cases. Ascites was seen in 56.25% and 26.66% of them had SBP. Liver biopsy was possible in 36 and 7 patients underwent autopsy, thus a total of 41 patients had changes of ICC histologically. UGIE was done in 51 patients and
66.66% of these had esophageal varices indicating portal hypertension. Mean serum copper was 191.5±44.40. Urinary copper pre D-Penicillamine was 365.69±108.124 and post D-Penicillamine was 983.75±208.73. Liver copper studied in 18 patients was 571.72 µg/g of wet weight of liver. 17 patients (21.29%) died during hospital stay and 16 (94.11%) had liver failure preterminally. Most of the children in stage 3 succumbed to the disease and 14(17.5%) patients are still on follow up. Conclusion-ICC continues to be a significant health problem with high morbidity and mortality in North West India. 70% children present in very late stage of the disease and have the evidence of portal hypertension. D-Penicillamine is effective in the early stage of the disease.

P0772

Title:
FOCAL NODULAR HYPERPLASIA (FNH)

Violeta Sereno 1, Graciela Caballero 1, Angeles Rodriguez 1, Carmén Gutiérrez 1, Cesar Castillo 1, Virginia Méndez 1
1) Hospital Pereira Rossell, Montevideo, Uruguay

Summary:
FOCAL NODULAR HYPERPLASIA (FNH) An infrequent hepatic lesion in the pediatric age Authors: Sereno V, Caballero G, Rodríguez A, Gutiérrez C, Castillo C, Méndez V Gastroenterology, Hepatology and Pediatric Nutrition Service. Pediatric Pathology Department, Pereira Rossell Hospital Montevideo Uruguay Introduction: Focal Nodular Hyperplasia (FNH) is an uncommon benign hepatic lesion. Its etiology is unknown. It is considered a hyperplastic response of the hepatic tissue to circulation anomalies. It is a solid lesion with a tumoral appearance. FNH is a primitive benign hepatic tumour, and represents the 0.02% of all pediatric tumours. It has a female predominance, the ratio female/male is 3:1. The age at diagnosis is between 5 and 20 years; it is exceptional before 2 years of age. Aim: To know the characteristics of an infrequent hepatic lesion in 2 patients. Methods and Materials: The clinic histories, the imagenologic studies and the histology of the lesions were analyzed. Results: Both patients were girls. One of them had clinical symptoms; the other had only a slight hepatomegaly and discreet alteration of the hepatogram. The Rx image studies showed an unique hepatic lesion at the VI and VII segments. The lesion was dried and the pathology examination disclosed a circumscribed solid tumor with histological features of FNH. In the follow up, un of the patients had a relapse with multiple nodular lesions, compromising both hepatic lobules. Conclusions: The FNH is a rare entity but it must be considered in the differential diagnostic of the primary hepatic tumours. Clinical symptoms and signs may be scarce. The diagnostic is not simple, and needs the histological study in order to be confirmed. A close follow up of the patient is required. The basic lesions deserves conservative measures. Cases with multiple or extended lesions need more complex actions like hepatic transplantation.

P0773

Title:
Prevalence and predictor of hepatic injury in children with thalassemia

Voranush Chongsrisawat 1, Panya Seksarn 1, Preeda Vanichsetakul 1, Woradee Lurchachaiwong 1, Apiradee Theamboonlers 1, Yong Poovorawan 1
1) Department of Pediatrics, Faculty of Medicine, Chulalongkorn University, Bangkok, Thailand

Summary:
BACKGROUND: Regular blood transfusion in children with thalassemia carries a distinct risk of infection with blood-borne viruses and also iron overload which may contribute to sustained hepatic injury, hepatic fibrosis, and cirrhosis. OBJECTIVE: The aims of this study were to assess the prevalence of hepatic injury defined by elevated alanine aminotransferase level (ALT>40 U/L), hepatitis B and C infection, and to identify independent predictors of hepatic injury in thalassemic children. METHODS: One hundred and nine children with beta-thalassemia and eleven children with alpha-thalassemia selected from pediatric hematology clinic of King Chulalongkorn Memorial Hospital were enrolled in this study. Their sera were tested for ALT, ferritin, and hepatitis markers including HBsAg, anti-HBc, anti-HBs, and anti-HCV by ELISA technique. Serum ferritin was measured by electrochemiluminescence immunoassay. The sera positive for either HBsAg or anti-HBc were further tested for HBV DNA by PCR method. RESULTS: The subjects consisted of 61 males and 59 females, with a mean±SD age of 8.58±3.59 years. Forty four patients (36.67%) had elevated ALT levels. One patient (1.06%) was HBsAg positive and none was anti-HCV positive. Serum ferritin levels ranged from 141-14,770 ng/mL (2357.01±1827.81 ng/mL). Univariate analysis showed that number of transfusion (p=0.02) and higher serum ferritin level (p<0.001) were significant predictors of elevated ALT. Serum ferritin levels ranged from 141-14,770 ng/mL (2357.01±1827.81 ng/mL). Univariate analysis showed that number of transfusion (p=0.02) and higher serum ferritin level (p<0.001) were significant predictors of elevated ALT. In multivariate analysis, serum ferritin level (p<0.001) was the only independent factor associated with elevated ALT. Serum ferritin level greater than 1960 ng/mL could predict the elevated ALT with a sensitivity of 82% and specificity of 60% (p<0.001; OR=6.9; 95%CI=2.82-16.86). CONCLUSION: The prevalence of hepatitis B and C virus infections is exceedingly low among Thai thalassemic children. High serum ferritin predisposes to elevated ALT. These findings suggest that iron overload plays a key role in the development of hepatic injury in the era of donated blood screening and universal hepatitis B immunization. ACKNOWLEDGEMENT: This study is supported by Ratchadapiseksompotch Research Fund, Faculty of Medicine, Chulalongkorn University.
P0774

Title: Diagnostic Usefulness of a 7-feature, 15-point Scoring System in the Interpretation of Liver Biopsy in Neonatal Cholestasis

Way S Lee 1, Lai M Looi 1
1) University of Malaya, Kuala Lumpur, Malaysia

Summary:
Background: Accurate interpretation of liver biopsy in neonatal cholestasis requires considerable experience. We aimed to assess the usefulness of a scoring system devised to assist interpretation of liver biopsy in neonatal cholestasis. Methods: Materials obtained from infants with neonatal cholestasis referred to the Department of Paediatrics, University of Malaya Medical Centre, Kuala Lumpur were reviewed by the authors, initially blinded to the final diagnosis. Authors' histological diagnosis, based on a 7-feature (portal ductal proliferation, bile plugs in portal ductules, porto-portal bridging, lymphocytic infiltration in portal region, multinucleated hepatocytes, neutrophils in the infiltrate, hepatocellular swelling), 15-point (minimum 0, maximum 15) and without the scoring system, was compared with the final diagnosis. Results: 84 liver biopsy materials from 78 patients were reviewed. Without the scoring system, biliary atresia (BA) was correctly diagnosed histologically in 30 cases, labelled as neonatal hepatitis (NH) in 3. NH was identified correctly in 33 cases, labelled as BA in 2 cases. Of the remaining 15 patients with other causes intrahepatic cholestasis, the authors' diagnosis was BA (n=5) and NH (n=9). Overall sensitivity for BA was 91%, sensitivity 86% and accuracy 88%. With the scoring system, a score of ≥7 has the best diagnostic utility to differentiate BA from other intrahepatic cholestasis histologically (sensitivity 88%, specificity 94%, accuracy 92%). Four patients with a score <7 had BA, and 3 patients with a score ≥7 had NH. Conclusion: A 7-feature histological scoring system has good diagnostic accuracy in the interpretation of liver biopsy in neonatal cholestasis.

P0775

Title: Outcome of Biliary Atresia in Malaysia is Adversely Affected by Late Surgery and a Lack of Availability of Liver Transplantation

Way S Lee 1, Kean S Lim 1, Li H Lim 1, Pei F Chai 1, Lai M Looi 1, TM Ramanujam 1
1) University of Malaya, Kuala Lumpur, Malaysia

Summary:
Objective: To determine the outcome of biliary atresia (BA) in Malaysia. Methods: A prospective study on all patients with BA seen at the University of Malaya Medical Centre (UMMC), Kuala Lumpur, from 1996 to 2005 was conducted. Survival with native liver, liver transplantation (LT) or death at 2 years after surgery was determined. BA was confirmed with operative cholangiogram. Results: The median age at referral of the 57 patients with BA seen at UMMC during the study period was 62 days. Kasai procedure was not performed in nine patients who were all referred late (median age 180 days). The median age at Kasai's surgery of the remaining 48 patients was 70 days. At 2 years, the survival rate with native liver for the 48 patients who had surgery before 60 days of age was 65%. Conclusions: The survival with native liver following corrective surgery for BA in Malaysia compares favorably with other international figures even though there was significant delay in referral. But the overall outcome was adversely affected by a lack of LT.

P0776

Title: CHOLESTASIS ASSOCIATED WITH PARENTERAL NUTRITION IN NEWBORNS.

Wilson Daza 1, Wilson Daza 2, Gloria Sánchez 1
1) Pediatrics Nutrition & Gastroenterology Department, Clínica del Niño JB, Bogotá, Colombia 2) Pediatrics Gastroenterology & Pediatrics Department, Universidad El Bosque, Bogotá, Colombia
Summary:

Objective: To determine how many newborns had cholestasis associated with PN when they used specific amino acids in a Hospital of reference in Colombia. Patients and method: 905 patients hospitalized in NICU that received Parenteral Nutrition (PN) from different causes (January 1998 - December 2005) were included and analyzed in a descriptive and retrospective study. Results: 24 (2.7%) newborns had cholestasis (14 females and 10 males), they were diagnosed by the levels of conjugated bilirubin greater than 2 mg% or conjugated bilirubin greater than 30% of total bilirubin. Gestational average age at birth was 35 weeks +/- 5 SD. Biochemical test: values of conjugated bilirubin were 4.3 mg% +/- 2 SD; ALT: 67.7 UI +/- 50 SD; AST: 71 UI +/- 67 SD; alkaline fosfatasa: 255.3 UI +/- 120.5 SD. The diagnosis of Cholestasis was done at 8 days +/- 3 SD of started PN. Contribute Nutritional (at the beginning of cholestasis): protein 2.2 g +/- 0.96 SD; fat 1.6 g +/- 1.02 SD; carbohydrates 10.6 g +/- 2.9. Duration of PN: the average PN duration was 17 +/- 8.6 days. Associated diseases: duodenal atresia, esophageal atresia, intestinal volvulus, NEC, diaphragmatic hernia, intestinal obstruction, cystic fibrosis, hyalin membrane disease, persistent arterious ductus with pulmonary hypertension and sepsis. Isolated microorganisms: Citrobacter freundii, Pseudomona aeruginosa, Escherichia coli, Serratia marcase and Stafylococcus coagulase negative. Conclusions: The newborns more susceptible to cholestasis associated with PN are those with congenital malformations in gastrointestinal tract, sepsis and serious diseases as hialin membran disease and NEC. Possibly the low percentage of cholestasis in our Hospital could correspond to a suitable following of patients by NST (Nutritional Support Team), as well as the individual prescription according to the physical and biochemical conditions, and because of the use of both aminoacid and lipids adapted for newborns.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Cases n (%)</th>
<th>Controls n (%)</th>
<th>Odds ratio (CI 95%)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysentery</td>
<td>29 (67.4)</td>
<td>38 (42.7)</td>
<td>2.9 (1.3 - 6.6)</td>
<td>0.01</td>
</tr>
<tr>
<td>Fever higher</td>
<td>39 (55.8)</td>
<td>55 (61.8)</td>
<td>1.1 (0.5 - 2.5)</td>
<td>0.81</td>
</tr>
<tr>
<td>Contagious</td>
<td>7 (16.3)</td>
<td>16 (18.0)</td>
<td>1.1 (0.4 - 3.2)</td>
<td>0.83</td>
</tr>
</tbody>
</table>

Title:

AUTOIMMUNE HEPATITIS IN CHILDREN. POLISH EXPERIENCE

Malgorzata Wozniak 1, Marek Woynarowski 1, Malgorzata Pawlowska 2, Dariusz Lebensztejn 2, Jerzy Socha 1
1) Children’s Health Memorial Institute, Warsaw, Poland 2) Polish Autoimmune Hepatitis Study Group, Warsaw, Poland

Summary:

Background: Autoimmune hepatitis (AIH) is rare disease in children and many medical institutions take care about small number of patients with this diagnosis. Thus the information about AIH epidemiology, standards of care and therapy results is limited. The aim of the study was to present the results of the survey performed by Polish AIH Study Group (PEGAZ) in 2007. Methods: Two questionnaire surveys were conducted in 2007 among the centers working with hepatology patients. The first one identified the centers facilities and AIH epidemiology, the second identified AIH course and therapeutic standards used at the sites. 18 centers responded to the questionnaires. Results: The centers participating in the survey cover approximately 80% of Poland. All centers can perform liver function tests, viral serology and liver biopsy. Half centers can perform differentiation for Wilson disease or A-1-ATD. There are many differences in the scoring systems for liver biopsy evaluation. The centers reported 278 pediatric cases of AIH in total. There were 44 new cases diagnosed in 2007. Most centers take care about 5-15 patients except one center with over 150 patients. 6 patients died and 11 patients got liver transplantation due to end stage of liver disease. 150 children with AIH reached the adulthood and were referred to hepatologists working with adult patients. The prevalence of AIH in Polish pediatric population is 3-4 cases/100 thousands. At the moment of AIH diagnosis 40% of cases presented as acute hepatitis and 36% as decompensation of chronic liver disease. 58% had short history of liver disease symptoms (<6 months). ALT activity was grater than 10 times above upper normal limit (ULN) in 40% and between 5 and 10 ULN in 36% of children. 73% had increased bilirubin concentration. Gamma globulins and IgG were increased in 90-97% respectively. 87% patients were positive for autoantibodies. All patients had inflammatory changes and 84% had fibrosis in liver biopsy. The mean period between the first symptoms and diagnosis was 3 months (10 days – 12 months). Most patients are treated with combined predinsone and azathioprine therapy but the doses and duration of the therapy differ among the centers. Patients are checked on outpatient basis every 2 months. Conclusions: The survey showed that there are many centers with experience in pediatric AIH therapy and there is the place for multicenter collaboration.

Title:

Liver transplantation changed the prognosis in children with autoimmune hepatitis – 20 years follow-up.

Malgorzata Wozniak 1, Marek Woynarowski 1
This study aimed to investigate the primary immunogenicity and the long-term efficacy of recombinant hepatitis B virus (HBV) vaccine in biliary atresia children.
Title: Topiramate (Topamax) Can Cause Cholestatic Hepatitis that is Indistinguishable from that of Biliary Atresia on Liver Biopsy

Zahangir Khaled 1, Gregory E. Simmons 2, John Hart 3
1) University of Illinois College of Medicine at Peoria, Peoria, USA 2) OSF Saint Francis Medical Center, Peoria, USA 3) University of Chicago, Chicago, USA

Summary:
Introduction: Topiramate has been used to treat seizure disorder in infant and children. Elevated liver enzymes have been reported with Topiramate therapy. To date, adverse hepatic event like cholestasis has not been reported with use of Topiramate in infant or children. Objective: To report a case of cholestatic hepatitis following Topiramate therapy. Case Summary: 3 months old girl admitted in the hospital for poor oral intake and dark colored urine. She is a known case of hypoxic ischemic encephalopathy secondary to meconium aspiration and neonatal seizures. Her seizure medication includes Phenobarbital, Levetiracetam (Keppra) and Topiramate. Labs performed on admission were AST 108 U/L, ALT 81 U/L, Alkaline Phosphatase 508 U/L, Total billirubin 3.2 mg/dl and Direct billirubin 1 mg/dl, Albumin 3.6 g/dl, Total protein 5.6 g/dl and normal topiramate trough level. Additional labs after Gastroenterology consultation were GGT 2170, A1AT level 168 & phenotype MM, negative screening for CMV, EBV, hepatitis B & C, PT 12.1, INR 1, PTT 36, and unremarkable metabolic screening. Hepatobiliary Ultrasound showed borderline hepatosplenomegaly, normal size gall bladder, slightly dilated common bile duct and mild prominence of intrahepatic biliary tree. No echogenic material in gall bladder or in CBD. Liver biopsy showed periporal fibrosis, bridging fibrosis among many adjacent portal tract, striking bile ductular proliferation, mixed inflammatory cell infiltrates in portal tract, and prominent periportal cholestasis. The biopsy features were consistent with extrahepatic biliary obstruction. However, HIDA scan showed good excretion of bile into the intestine. Decision was made to discontinue Topiramate. Repeat labs over the following 8 weeks showed in the attached table. Repeat liver biopsy after 8 weeks showed decrease inflammatory infiltrate and ductular proliferation compared to the previous biopsy. Discussion: Resolution of the cholestasis occurred after discontinuation of Topiramate. Repeat liver biopsy also demonstrated histological improvement of liver tissue. To date, cholestatic hepatitis associated with Topiramate has not been reported. Conclusion: Although rare,
Topiramate can cause cholestatic hepatitis. It should be considered as a differential diagnosis in patients who develop cholestatic liver disease while receiving this anti-seizure medication. This is the 1st reported case of Topiramate induced cholestatic hepatitis.

<table>
<thead>
<tr>
<th>Tests</th>
<th>0 wks</th>
<th>2 wks</th>
<th>4 wks</th>
<th>8 wks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total/Direct bili</td>
<td>3.2/1.0</td>
<td>0.6/0.1</td>
<td>0.1/0.1</td>
<td>0.1/0.1</td>
</tr>
<tr>
<td>AST/ALT</td>
<td>108/81</td>
<td>94/70</td>
<td>59/52</td>
<td>49/54</td>
</tr>
<tr>
<td>ALK Phosphatase</td>
<td>508</td>
<td>260</td>
<td>244</td>
<td>146</td>
</tr>
<tr>
<td>GGT</td>
<td>2170</td>
<td>960</td>
<td>669</td>
<td>425</td>
</tr>
</tbody>
</table>

P0783

**Title:**
Lactose intolerance in children and adolescents from school age in Niteroi and Duque de Caxias, Brazil

Aderbal Sabra 1, Selma Sabra 1, Gustavo Rodrigues 1, Renata Lopes 1, Gabriela Cabral 1
1) Unigranrio, Duque de Caxias, Brazil

**Summary**

Introduction: Lactose intolerance is a common finding in specific non-caucasian communities. In Brazil, all the students, at public schools, drink cow’s milk during meal time, as the principal beverage.

Objective: The present study has the objective to shown the inconvenience of the use of the cow’s milk beverage among Brazilian students of all ages.

Methods: 350 students from brazilian communities schools, matching age and gender for different races and similar communities, were submitted to the lactoses tolerance tests.

Results: 42% of the students were tolerant to lactose. Among the students with lactose intolerance, we observed that 18% were white (group 1) and 40% of the students were black (group 2). In group 1 vomiting was present in (28%), abdominal pain (24%), diarrhea (15%), and abdominal distension (42%). In group 2, vomiting was present in 28%, abdominal pain in 44%, diarrhea in 12%, and abdominal distension in 54%.

Conclusion: The data obtained from this study shown that cow’s milk offered to students from communities schools in Brasil, are prejudicial to a significant number of children and adolescents, at school age, that are intolerants to lactose.

P0784

**Title:**
Refeeding syndrome in Crohn’s disease

Nadeem Jilani 1, Izzy Onyekpe 1, Tony Akobeng 1, Andrew Fagbemi 1, Adrian Thomas 1
1) Booth Hall Childrens Hospital, Manchester, UK

**Summary:**

Objective: To investigate the frequency of biochemical disturbances or refeeding syndrome in children with Crohn’s disease (CD) admitted for polymeric diet (PD). Methods: The medical notes of children with CD admitted for PD between January 2005 and December 2007 were reviewed to determine the frequency of biochemical abnormalities or clinical evidence of refeeding syndrome. Results: 72 children were admitted to commence exclusive PD as treatment for a relapse of their CD. The notes of 68 of these children were obtained and reviewed. Biochemical tests had been performed in 42 children before and 32 after starting PD. Biochemical abnormalities compatible with refeeding syndrome were seen in 13/32 children (low phosphate 10, low magnesium 5, low potassium 8, low calcium 1). Appropriate supplements were given to all 13 children but 1 child developed clinical evidence of refeeding syndrome. Conclusion: Biochemical abnormalities compatible with refeeding syndrome are common in children with CD admitted for PD especially if the weight for height is <80% or there has been recent weight loss >10% of body weight. Clinical evidence of refeeding syndrome is rare if appropriate supplements are given.

P0785

**Title:**
Fatal effects of neonatal high protein diet in low birth weight experimental piglet model

Nathalie Le Floc’h , Agnès Jamin , Christèle Gras-Le Guen , Romain D’Inca , Isabelle Le Huerou-Luron , Bernard Seve
Blood glucose metabolism and inflammation indices in obese/overweight children

Andriani Vazeou 1, Alexandra Papadopoulou 1, Chrissoula Maragou 1, Epistimi Ageou 1, Lela Stamoynannou 1, Asteroula Papathanasiou 2
1) First Department of Pediatrics "P & A Kyriakou" Children’s Hospital, Athens, Greece 2) Department of Endocrinology "P & A Kyriakou" Children’s Hospital, Athens , Greece

Summary:
Introduction: The aims were to evaluate glucose metabolism and the presence of inflammation in overweight/obese children and adolescents. Patients and Methods Oral Glucose Tolerance Test (OGTT) was performed in 287 overweight/obese children [27 overweight, 261 obese children; 54 males; mean (SD) age 11,08 years (2,4); 83 prepubertal] as well as in 33 lean healthy controls [19 males; mean age (SD) 9.84 years (3,6); 18 prepubertal]. HOMA-IR, beta cell function, the ratio of 30 min A insulin/A glucose (AÉ/ÄG), the area under the curve for glucose (AUCG), insulin (AUCI), C-peptide (AUCCP), QUICKI and WIBSI indices were all evaluated. High sensitive C-reactive protein (hsCRP) and adiponectine levels were also measured. Results: Impaired fasting glucose (IFG >100 mg/dl) was observed in 22.6% of the obese/overweight children while, impaired glucose tolerance (IGT) in 26.8% children. Obese children with IGT had significantly higher log HOMA compared to those with normal glucose tolerance (NGT) (p<0.01). Moreover serum ammonium was significantly higher in HP piglets (365±4.32 vs. 242±14.55 mmol/L, p<0.05), as urine urea/creatinine ratio (60.9±2.2 vs. 12.8±1.8, p<0.01). Plasma and urine amino acid were similar in both groups, except for taurine, which was highly increased in HP group. As usually formulated, both diets provided 192 mg of K/kg/d, 355 mg of P/kg/d and 0.530 mg of vitamin B6/kg/d. Conclusions: Impaired glucose metabolism and increased indices of inflammation were common in children with obesity. OGTT and not fasting glucose measurement should be used in order to assess glucose metabolism in this group of patients.

P0787

Title:
Blood glucose metabolism and inflammation indices in obese/overweight children

Mark Lucas 1, Jams B Kaper 2, Alan D Phillips 1

Summary:
Objective: Although low birth weight (LBW) babies are routinely fed high protein (HP) formulas to ensure catch up growth, HP intake effects on organ development are poorly understood. LBW piglet model provides an opportunity to investigate the effects of nutrition in immature neonates. Therefore LBW piglets were artificially reared with either the same protein supply as provided in the sow milk (AP, 15 g of ingested protein/kg/day), or a 50 % higher supply (HP, 22 g of ingested protein/kg/day) from d2 to d28 after birth. Unexpectedly all HP piglets (n=14) developed severe pathological symptoms (hypotonia, polypnea) from d10 to d16, had poor growth and 30% of them died spontaneously. This syndrome was further investigated to understand its physiopathology. Methods: Autopsies, blood and urine biochemistry and amino acid concentrations were performed in HP and AP piglets at d16. Results: Hypokalemia (2.56±0.13 mmol/L), hypophosphoremia (1.49±0.04 mmol/L) and elevated serum urea were observed in HP group (p<0.01). Moreover serum ammonium was significantly higher in HP than in AP piglets (365±4.32 vs. 242±14.55 mmol/L, p<0.05), as urine urea/creatinine ratio (60.9±2.2 vs. 12.8±1.8, p<0.01). Plasma and urine amino acid were similar in both groups, except for taurine, which was highly increased in HP group. As usually formulated, both diets provided 192 mg of K/kg/d, 355 mg of P/kg/d and 0.530 mg of vitamin B6/kg/d. Therefore altered parameters indicated inadequate potassium and phosphorus dietary supplies in HP piglets. When the HP milk was supplemented with potassium (301 mg/kg/d), phosphorus (542 mg/kg/d) and vitamin B6 (1.036 mg/kg/d), a major co-enzyme amino acid catabolism, serum biochemistry parameters were normalized in HP piglets. However HP piglets still suffered reduced physical activity. Finally improvements of growth rate and vitality of HP piglets was obtained when a protein intake was raised to 35 % from d2 to d7, before being further raised to 50 % from d7. Conclusion: Tolerance to HP diet was the best when proportionally supplemented with potassium, phosphorus and vitamin B6, and when HP intake was raised progressively. This experimental strategy allowed catch up growth in LBW piglets fed the HP diet without any toxic effect. Implementation of a HP diet without proportionally increased levels of phosphorus and potassium results in symptoms like those observed in the re-nutrition syndrome with inefficient protein utilization for tissue anabolism.

P0788

Title:
Lactobacillus GG induces beta defensin 2, but not mucin gene expression, in human intestinal in vitro organ culture (IVOC)

Mark Lucas 1, Jams B Kaper 2, Alan D Phillips 1
Summary:
The probiotic bacterium Lactobacillus GG (LGG) is reported to be effective in the treatment of acute diarrhoeal disease in children. Previously published in vitro cell culture studies have indicated this may be due to the enhanced expression of the mucins MUC2, MUC3, and MUC5AC, and the antimicrobial peptide beta-defensin 2 by the host. Aim: to use human intestinal IVOC to study host mucin and defensin gene expression in response to Lactobacillus GG. Methods: 25 microlitres of overnight cultures of Lactobacillus GG were added to proximal small intestinal mucosal biopsy samples (n = 6; taken with fully informed consent and ethical approval) and incubated for 8 hours; uninoculated samples from the same patient were used as matched controls. RNA was isolated from biopsy samples and cDNA was synthesised using standard methods. The following genes were studied MUC2, MUC3a, MUC3b, MUC5AC, beta defensins 1, 2, 3, and alpha defensins 5 & 6. Quantitative PCR was performed in a RotoGene 6000 real-time thermal cycler (Corbett Biosciences, U.K). Normalisation was carried out using the housekeeping genes GAPDH and POLR2A and gene expression compared to the uninoculated controls. Statistical analysis was performed using the non-parametric Friedman analysis of variance test for repeated measures. Results: Beta-defensin 2 showed a median 5.5 fold increase in gene expression compared to uninoculated control samples (p < 0.01). Gene expression of beta-defensins 1 and 3 remained unchanged relative to controls. Mucin genes showed no evidence of increased transcriptional activity and de novo induction of the gastric mucin MUC5AC was not detected in any samples. Conclusion: Using the human intestinal IVOC model system, we were unable to confirm that Lactobacillus GG stimulates mucin transcriptional activity. However, Lactobacillus GG induced expression of the potent human antimicrobial peptide, beta-defensin 2, and this could account for its beneficial activity. (Supported by NIH grant DK058957 to JBK)

P0789

Title: Comparative study of right and left medium arm circumference and triceps skin fold in children from an elementary school

L.Leticia Salazar-Preciado 1, Alfredo Larrosa-Haro 2, A Karina Rodríguez-Anguiano 1, Clio Chávez-Palencia 1, Elizabeth Lizárraga-Corona 1, Hugo Sepúlveda-Vázquez 1

1) Unidad de Investigación Médica, UMAE Hospital de Pediatría, CMNO, IMSS., Guadalajara, México. 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, México.

Summary:
Objective To compare and to correlate right and left arm anthropometric measurements in children from an elementary school. Methods Design: Cross-sectional. Setting: Elementary School # 225 “Porfirio Cortez Silva”, November 2007 through January 2008. Variables: Right and left mid upper arm circumference (MUAC) and triceps skin fold (TSF), gender, age, and laterality. Protocol: A standardization procedure (reliability and consistency) of MUAC and TSF was performed by all members of the nutrition team. Right and left MUAC and TSF were measured along a 10 week period in 96% of the school population. Arm measurements were compared with Student’s t and correlated with Pearson’s procedure; in the cases with suspected abnormal distribution they were compared with Mann-Whitney U. Results 714 children 6 to 12 years old from all 1st through 6th years of primary school were evaluated. Mean right MUAC was 21.6±4.0, left MUAC 21.6±4.1, without statistical difference; comparison of MUAC in each school year neither showed differences. Mean right TSF was 17.4±7.2, left TSF 17.0±6.9, with no statistical difference; comparison of TSF by every scholar year did not show differences either. In right-hand children, mean MUAC of right arm was 21.6±4.1 and left arm 21.3±3.7 (p= 0.233). In left-hand children right MUAC was 21.6±4.1, left arm 21.2±3.8 (p= 0.325). Comparison of right and left arm TSF of right and left-hand children did not show differences in the group as a whole nor when they were compared by the scholar year. Conclusions The null hypothesis of no differences between left or right arm anthropometrics in left and right-hand children is accepted. In the population studied, right or left arm anthropometrics does not seem to be relevant to perform an anthropometrical diagnosis of the nutritional status.

P0790

Title: Ingestion of energy, macronutrients and micronutrients in children who suffered an accidental caustic ingestion and its association with de esophageal damage.

Carmen A Sánchez-Ramírez 1, Guadalupe Ávila-López 1, Alfredo Larrosa-Haro 2, Edgar M Vásquez-Garibay 2, M Elena Cámara-López 2, Ana K Rodríguez-Anguiano 1

1) Servicio de Gastroenterología y Nutrición, Unidad de Investigación Médica, Unidad Médica de Alta Especialidad Hospital de Pediatría CMNO IMSS., Guadalajara, México. 2) Instituto de Nutrición Humana, Centro Universitario de Ciencias de la Salud, Universidad de Guadalajara., Guadalajara, México.
Summary

Objective: To evaluate the association of the esophageal damage of children who suffered an accidental caustic ingestion (ACI) with the energy, macronutrient and micronutrient intake. Methods: Design: Cross-sectional. Setting: An esophagus clinic at a pediatric referral hospital. Independent variables: Clinical, radiological and endoscopic indicators of esophageal damage. Dependent variables: energy, macronutrient, micronutrient intake. Nutritional Survey: 24-hour recall. Anthropometrics: Anthropometric standardization, conventional techniques and instruments. Reference patterns: Dietary reference intakes, CDC 2000. Statistics: Descriptive, $\chi^2$, Fisher, OR and CI. Results: Age: Infants younger than 12 months had a significant lower ingestion of vitamins A, C and B6; zinc, calcium and, magnesium when compared with older children ($p<0.05$). Endoscopy: The cases with the severest esophageal burns (grade II & III, Zargar's classification) were associated with a lower median adequacy of energy when compared with cases with mild lesions ($p=0.015$). Esophageal stricture: It was associated with a lower ingestion of vitamin A (OR=4.2, CI: 1.4-12.3; $p=0.053$). Dysphagia: It was associated with the used of blended or polymeric diets (OR=25.0, CI 6.3-109.5; $p=0.001$). Nutritional status: Children with <-2 SD of height for age (5.3%) were associated with a lower median adequacy of energy and carbohydrate ($p<0.05$) when compared with the group with normal nutrition status. Conclusions: Although the frequency of protein-energy malnutrition in children with ACI is low, the dietary recall revealed a number of deficiencies in the ingestion of energy, macronutrients, vitamins and minerals. These deficiencies were significantly associated to the degree of esophageal damage at the accident and the development of dysphagia and esophageal strictures. These observations describe a mechanism of secondary malnutrition in a specific esophageal pathology.

P0791

Title:
Fecal Osmolar Gap (FOG) in the pathogenesis of persistent diarrhea in children

Ana Muñoz 1, Eduardo Salazar-Lindo 2
1) Hospital Nacional Edgardo Rebagliati Martins, Lima, Peru 2) Hospital Nacional Cayetano Heredia, Lima, Peru

Summary:
Fecal Osmolar Gap (FOG) in the pathogenesis of persistent diarrhea in children Objective: We conducted this study aimed to assess if secretory diarrhea is more prevalent than osmotic diarrhea in persistent diarrhoea. The study was conducted in the Rehydration Unit of Cayetano Heredia Hospital in Lima, Peru from June 2001 to February 2003. Methods: Male and female infants admitted because of persistent diarrhea were eligible if they met the following criteria: (a) age between 3 and 36 months, (b) history of three or more watery stools per day for at least fourteen days but not more than six weeks, (c) no use of antibiotics during the last three days before admission, (d) no bloody stools during the last three days or on the day of observation, (e) at least three watery stools passed during the day of observation, (f) no clinical features of a coexisting acute systemic illness. Fecal samples were taken for primary isolation and identification of bacterial enteropathogens and rotavirus. Another fecal sample was collected to examine in fresh the presence of parasites, polymorphonuclear leucocytes, microscopic fat, reducing substances, glucose, and pH. Measurement of fecal electrolytes was performed. Fecal and serum osmolarity was obtained by measuring freezing point depression with an automatic osmometer (Osmette®). Fecal osmolar gap (FOG) was calculated by the following formula: measured serum osmolarity – 2[fecal sodium + potassium concentration]. Results: A total of 24 patients fulfilling the inclusion criteria were admitted to the study. Twelve (52.2%), 3 (13%), and 9 (34.8%) children were classified as having secretory, osmotic or indeterminate diarrhea, respectively. The weight gain was notoriously greater for patients who used antibiotics than patients who didn’t, although bacterial cause was not confirmed by culture Conclusions The secretory patron predominance in persistent diarrhoea was revealed in this study by first time. Indeed, because we had better weight gain in patient that use antibiotics, the infectious etiology cannot be excluded.

P0792

Title:
Heart Benefits of an Exercise Program applied to Overweight Children and Adolescents

Rossetti, Márcia Braz 2, Brasil, Adriana Reis 1, Silveira, Adriana Marcia 1, Filho, Paulo Pimenta Figueiredo 1, Britto, Raquel Rodrigues 1, Norton, Rocksane de Carvalho, 1
1) UFMG, Belo Horizonte, Brazil 2) PUC Minas, Belo Horizonte, Brazil

Summary:
Introduction: Juvenile obesity and sedentarism have reached epidemic proportions worldwide, being important risk factors for cardiovascular diseases. Being related to a low level of systemic inflammation, both conditions have received wide scientific attention. Recently, high levels of C-reactive-protein (CRP) were observed in obese adults and children. Objective: Focused on early prevention, this study tested the hypothesis that a programme containing medical, nutritional and psychological counselling, plus supervised physical activity sessions, would generate cardioprotection for overweight youths. Methodology: This prospective clinical trial studied parallel groups of overweight children and adolescents (n=45), from 6 to 16 years old, both sexes, with a body mass index (BMI) above >85th percentile. The control group (n=18) was given the traditional medical treat-
ment aiming lifestyle changes. The intervention group (n=27) underwent, beyond the standard recommendations, a moderated intensity supervised aerobic exercise program, three times a week, for 12 weeks. Estimates of oxygen consumption (VO2 max) through the Rockport Walking Test, time spent to perform the test (T, minutes), serum levels of ultra-sensitive CRP (us-CRP), total cholesterol to high density lipoprotein ratio (TC:HDL) and percentual body fat (%BF) were obtained for the two groups, before and after the study period. It was used the Student T-Test and multivariate analysis to check the differences obtained within and between groups (p < 0.05). Results: The intervention group obtained various benefits recognized as cardioprotective: increase in VO2 max (p=0.0001) and decreases in %BF (p=0.0001), TC:HDL ratio (p=0.005), us-CRP levels (p=0.0001), T (p=0.0001), BMI (p=0.003), while the control group had increases in the inflammatory marker us-CRP (p=0.0027), without alterations in the other variables of interest. Conclusion: We conclude that a supervised exercise program should be an essential component of multidisciplinary approaches of juvenile obesity, since it presents anti-inflammatory and thus heart disease preventive properties.

P0793

Title: Tetrahydrobiopterin (BH4) Deficiency: Diagnosis and Clinical Outcome

Araújo,RF 1, Duarte,RRF 1, Oliveira,LB 1, Santos,CR 1, Starling,ALP 1, Aguiar, MJB 1
1) Federal University of Minas Gerais, Belo Horizonte, Brazil

Summary

Introduction: Up to five percent of children born with persistent hyperphenylalaninemia can suffer from BH4 deficiency, a disease caused by the lack of BH4, a cofactor responsible for the activation of enzymes involved in the hydroxylation of phenylalanine (phe) into tyrosine, this into dopamine and in the conversion of tryptophan into serotonin. The clinical diagnosis is delayed and suspected by symptoms of neurotransmitters deficiency despite a correct treatment for Phenylketonuria (PKU). Objectives: Describe the diagnosis and clinical outcome of three patients with BH4 deficiency.

Method: Analysis of medical records and revision of specialized literature. Results: M.R.M. started early treatment for PKU (phe: 1.189,45 µMol/L). He had an unfavorable evolution – generalized hypertonia, convulsions, drooling, tremor of the extremities and delayed neuropsychomotor development (NPMD) – in spite of acceptable levels of blood phe. He was diagnosed with BH4 deficiency type GTPH. R.A.S. started early treatment for PKU (phe: 947,7 µMol/L), and also evolved with delayed NPMD, hypertonia and irritability, despite normal levels of blood phe. He was also diagnosed with BH4 deficiency type GTPH. Both are using L-Dopa, Carbidopa, BH4 and 5-OH-tryptophan, with favorable outcome. V.R.S. also started early treatment for PKU (phe: 730,50 µMol/L) and developed delayed NPMD, hypertonia and convulsions. The family abandoned the treatment when the child was 6 months old and returned 7 years later. He was diagnosed with BH4 deficiency type 6-PTPS. He has been using L-Dopa, Carbidopa and 5-OH-tryptophan for 6 months with a mild clinical improvement. Conclusion: The early diagnosis and treatment improve the disease’s prognosis and provide better quality of life for the patients. The simplicity of diagnosis and treatment indicate the necessity of a BH4 deficiency screening among patients with persistent hyperphenylalaninemia.

P0794

Title: THE ANALYSIS OF FOOD CONSUMPTION AND ITS RELATION WITH THE BMI OF CHILDREN AND ADOLESCENTS WITH OBESITY WHICH ARE FOLLOWED BY NUTRITIONISTS IN HOSPITAL DAS CLINICAS OF FEDERAL UNIVERSITY OF MINAS GERAIS

Adriana Márcia Silveira, 1, Rocksane de Carvalho Norton 1, Márcia Braz Rosseti 1, Viviane de Cassia Kanufre, 1, Heloisa Gambarelli Araújo, 1, Ann Kristine Jansen, 1
1) UFMG, Belo Horizonte, Brazil

Summary:

Introduction: Children and adolescents with overweight and obesity are consequence of the same eating and behavioral mistakes while having a meal, and therefore end up gaining too much weight, making the prognostic worse. The increase of ingestion of food with high energetic density, and the decrease of physical exercises are core factors that cooperate with the gain of weight and prevalence of obesity. Objective: Evaluate the changes on the food consumption and the relation of the obesity in the BMI of children and adolescent before and after the nutritional and physical intervention. Methodology: cohort study with 22 obese children and adolescents (BMI percentil ≥ 95). There were individual nutritional assessment and food group reeducation associated to a regular sports program (3 times a week) for 12 weeks. The food consumption was verified through the Semi-Quantitative Food Frequency Questionnaire at the beginning and the end of the treatment period. The macronutrients were calculated through the public domain software Diet Pro® 4.0. The statistic test to compare the data was the Student’s T-test with 5% (p<0.005) statistic relevance. Results: 10 boys and 12 girls with an average age of 11,2 years ± 2,54 were the sample analyzed. The initial calorie consumption was calculated though the public domain software Diet Pro® 4.0. The statistic test to compare the data was the Student’s T-test with 5% (p<0.005) statistic relevance. Regarding to macronutrients, the average differences for carbohydrates, lipids and proteins were respectively 209,1g ± 140,7, 82,5g ±58,2 e 43,2g ± 42,5 with statistic relevancy (p<0,001). Conclusion: With this research, we could observe the importance of changing the eating habits, associated to a regular sports program for the weight control, therefore helping the treatment of children obesity.
P0795

Title: Nutritional Status and Body Composition in Children with Renal Failure Followed in a Pediatric Nephrology Center

Ana Paula Brecheret 1, Joao Tomas A Carvalhaes 1, Marise I Castro 1, Ulysses Fagundes 1, Carlos Alberto G Oliva 1, Ulysses Fagundes-Neto 1

1) UNIFESP, São Paulo, Brasil

Summary

Objectives: Evaluate the nutritional status and body composition of children with renal failure. Analyze if there are differences between gender concerning nutritional status and body composition. Verify if the disease stage correlates with nutritional status and body composition.

Methods: 21(42,8%) boys and 28 (57,1%) girls followed in a pediatric nephrology center were studied. The age of the patients varied between 5,3 to 19,5 years old, with an average of 11,7 years old. In order to group them in disease stage, they were distributed into three groups based on their creatinine clearance (ml/min/1,73m2): below 15 (21children) between 15 and 37 (9 children) and above 37 (19 children). Weight and height were obtained to calculate the following indexes: Weight/Age (W/A), Height/Age (H/A) and BMI/Age (B/A). Then Z-scores were obtained (NCHS/CDC-2000). Z-scores below -2,00 were considered under-nutrition. Body composition was measured by dual-energy x-ray absorptiometry (DXA - Hologic 4500A). Groups and genders were compared among each other.

Results: There were no differences between boys and girls, neither between groups for anthropometric data. 19 (38,8%) patients were diagnosed as/with short stature, and 22 (44,8%) as/with low-weight. Body fat percentage (%BF) ranged from 11,2 to 35,9, and lean body mass percentage (%LM) from 61,6 to 85,2. Among girls %BF and body fat mass were higher than among boys (p<0,001 and p=0,024). The %LM was greater among boys (p<0,001).

Conclusion: The studied sample presented a high prevalence of under-nutrition. The difference between genders' body composition was the same as that observed among normal subjects. Even considering the disease stage, there were no nutritional differences between the studied groups.

P0796

Title: Growth factors and growth in full-term infants fed either breast milk or formula, during the first 6 months of life (preliminary report)

Anna Challa 2, Antigone Tsirka 3, Agathi Ntourntoufi 1, Vasileios Cholevas 2, Styliani Andronikou 1

1) Neonatal Intensive Care Unit, University Hospital of Ioannina, Ioannina, Greece 2) Research Laboratory of Child Health Department, University of Ioannina, Ioannina, Greece 3) Pediatric’s Department, G. Hatzikosta General Hospital, Ioannina, Greece

Summary

Objective: To examine whether there is any effect of type of feeding on growth factors and growth in full-term infants in the first 6 months of life. Methods: One group of infants (N=16) was breast fed exclusively (G-1) and the other (N=12) was on milk formula (G-2). Their gestational ages and birth weights were respectively 39±0.8 and 38.4±1.3 weeks and 3285±359 and 3219±419 g. Insulin like growth factor-1 (IGF-1) and the binding protein 3 (IGFBP-3) were determined on the 1st and 6th month of life. In parallel 25OHD levels were also measured. Their body weight and crown heel length were recorded on the same times. All values are reported as means ± SD. Results: The IGF-1 levels did not differ significantly between the two groups at the times studied. Their mean values on the 1st and 6th month of life were 84±39.8 and 66.1 ng/ml for G-1 and 92.7±39.6 and 83.2±35 ng/ml for G-2. The IGFBP-3 concentrations were higher by the 6th month in the formula fed infants (p<0.05). Their values were 2.14±0.3 and 2.24±0.47 ig/ml for G-1 and 2.1±0.5 and 2.67±0.23 ig/ml for G-2. The 25OHD concentrations also differed between the two groups, being higher in the formula fed one at one and six months, p<0.0001. The respective values were 4.4±2.5 and 13.5±6.9 ng/ml for G-1 and 25.3±4.5 and 41.3±7.7 ng/ml for G-2. Body weights and lengths were comparable in both groups. Their values were 4196±482 and 7618±907g for G-1 and 4390±668 and 8047±925g for G-2 and 55.4±2 and 67.7±2.8 cm for G-1, 56.5±3.7 and 69.2±3.4 cm for G-2. Conclusion: Breast or formula milk feeding in full-term infants seems to have some effect on the insulin like growth factors in the first 6 months of life but it is not reflected in their body weight or length.

P0797

Title: First results of a randomized controlled double blind European multi-centre study with an infant formula supplemented with immunoactive prebiotics. Part I: Effect on frequency of febrile episodes in healthy infants in the first year of life.

Annemieke M. Eisses 1

1) on behalf of the Multi-centre Immuno-Programming Study (MIPS), Multi-centre, Europe
Summary:

Objective: Several studies suggest a lower incidence of infections in breastfed compared to formula fed infants. This effect might partly be attributed to the presence of oligosaccharides (OS) in human milk which have been shown in animal studies and clinical trials to stimulate the immune system, e.g., by modulating the intestinal flora. Recently, oligosaccharides have been introduced in infant milks. In the present study a new combination of specific neutral and pectin-derived acidic OS (ratio 85:15, 8 g/L formula) on the occurrence of febrile episodes during the first year of life was examined. Study population: In this randomised controlled double blind European multi-centre trial (7 centres in 5 countries) 1187 healthy term infants without family history of atopy were recruited receiving either a formula supplemented with the new prebiotic mixture, a standard formula (control) or breast milk (the latter not randomised). 186 infants (15.7%) dropped out (no group difference). 835 infants run through the study per protocol, i.e. were completers and followed the feeding scheme correctly: 292 in new prebiotic group, 300 in the control group, and 243 in the breastfed group. Methods: The rate of febrile episodes (peak rectal temperature ≥38.5°C) adjusted for length of observation period was tested between the groups using a one-sided Van-Elteren-test. Results: See table. Table 1A+B. Table 1A: Adjusted rate (mean) of febrile episodes ≥38.5°C per year. Table 1B: Adjusted rate (mean) of febrile episodes ≥38.5°C per year in symptomatic infants (at least one episode). Conclusions: 1. The incidence of febrile episodes in the first year of life is very low in infants of 5 different European countries. 2. In the first half year of life the mean adjusted rate of febrile episodes is significantly lower in the group receiving the new oligosaccharides. Whether this difference in the phase of highest exposure to the immunoactive prebiotics is of clinical relevance requires further investigation. 3. In this study, there was no evidence for a lower incidence of febrile episodes in infants receiving human milk.

P0798

Title: ENTERAL NUTRITION AND PEDIATRIC INTENSIVE CARE UNITY

Antonio F Ribeiro 1, Roberto J N Nogueira 1
1) UNICAMP, Campinas, Brazil

Summary: This study aimed to analyze the indications, medical prescriptions, causes of incorrect administration and evolution of the enteral nutrition of the patients 6 months old or younger at the Intensive Care Unity, HC/UNICAMP. It was a retrospective study. Data from medical reports were obtained with a registration chart. In 9 months, 110 patients were evaluated, with median stay in hospital of 7 days. The incorrect administration of the enteral nutrition was related to gastrointestinal tract problems, surgery and others. Only 4 patients (7.84%) have nonstop delivery of the enteral nutrition since its start, which shows an imperfect administration of the enteral nutrition. These data were confirmed by the analysis of 51 patients that received only 84.98% of the energy prescription (p < 0.0001). In concern to protein the difference was -4.41g/day (p < 0.0001). The energy and protein delivery was insufficient, which shows that the patients are in risk to malnutrition. There were 46 malnourished patients (41.8%) and this group showed a significant amount of previous diseases (p = 0.016), and an energy delivery significantly higher than the patients non-malnourished patients (p = 0.040). In relation to protein delivery the malnourished patients also received a significantly larger amount (p = 0.015). The continuous sedation time was longer among malnourished patients (p = 0.009). The average z score among malnourished children was -3.63 and the median -1.86, among non-malnourished children these values were -0.83 e -1.86 respectively. The variation range in malnourished children was -0.03 and for the non-malnourished children -0.01 and 0.00, respectively. Early enteral nutrition was possible in only 59 patients (53.6%), and was not made systematically. Then the nutritional delivery at this moment at Pediatric Intensive Care Unit of UNICAMP was not enough to change the nutritional status of the patients during the stay in this unit. Guidelines would be useful to make the nutritional delivery better.

P0799

Title: Results of the Performance of a Multidisciplinary Team in an Outpatient Service for Obese Children

Ary Cardoso 1, Rosana Tumas 1, Andreia Nascimento 1, Denize Lellis 1, Renata Barco 1, Eliana Cáceres 1
1) Instituto da Criança, São Paulo, Brasil

Summary: Introduction: Obesity causes damage to the health of children and adults due to its strict relation to the precocious occurrence of chronic diseases: type II diabetes, arterial hypertension and arteriosclerosis that contribute to the increase of morbidity and mortality. Objectives: To describe clinical, behavioral and laboratorial changes of obese children who completed 12 months of follow-up in a specialized outpatient service. Methods: We evaluated 20 patients (13 boys and 7 girls) with a median age of 7.3 years (variation from 3.5 to 9.25 years). Besides initial anamnesis and blood tests (fasting glycemia, total cholesterol, LDL-cholesterol, HDL-cholesterol and triglycerides), anthropometric measurements were performed – weight,
stature, body mass index (BMI) calculation at every appointment. Paired t-test was performed to compare means and standard deviations. Results:
There was a decrease on the incidence of compulsive habits from 53% (n=11) to 20% (n=4), “picky eater” habit from 70% (n=14) to 35% (n=7). The habit of consuming vegetables increased from 65% (n=15) to 95% (n=19), and consuming fruits increased from 80% (n=16) to 100% (n=20). The mean daily time spent with TV/computers was 6 hours at the beginning and 4.5 hours at the end. Eating in front of TV decreased from 60% (n=12) to 25% (n=5). Programmed physical activity increased from 10% (n=2) to 15% (n=3). There were no significant changes on the anthropometric parameters. Laboratorial parameters didn’t show any significant variations. Conclusions: The educational approach with frequent appointments showed efficacy in decreasing the weight gain velocity of these patients. At this age, family participation was efficient in changing some habits, although it was insufficient for the improvement of physical activity. Greater emphasis over this point becomes necessary to improve the achievement of better results.

P0800

Title:
Relationship Of Serum Fatty Acid Status To Type Of Dietary Fat Intake In Children With CF

Asim Maqbool, MD 1, Joan I Schall, PhD 1, J Felipe Garcia-Espana, PhD 1, Babette S. Zemel, PhD 1, Birgitta Strandvik, MD, PhD 2, Virginia A Stallings, MD 1
1) The Children’s Hospital of Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, USA 2) Institute of Clinical Sciences, Sahlgren’ska Academy, Göteborg University, Göteborg, Sweden

Summary:
Objective: Improvement in essential fatty acid (EFA) and fatty acid (FA) status has been reported with increased energy and linoleic acid (LA) intake in children with cystic fibrosis (CF) and pancreatic insufficiency (PI); However, the association of fat intake type (saturated [SFA], monounsaturated [MUFA], polyunsaturated fat [PUFA]) and serum FA has not been extensively studied. To determine associations of type of dietary fat intake (SFA, MUFA, PUFA), LA and α-linolenic acid (ALA) with serum LA, docosahexaenoic acid (DHA), and triene:tetraene (T:T, eicosatrienoic acid:arachidonic acid ratio) in children with CF & PI. Methods: Serum FA was assessed at the 12 and 24 month visits in preadolescent children with CF & PI enrolled in a longitudinal study of growth, nutritional & pulmonary status by capillary gas liquid chromatography (mol%). 7-day weighed food records, coefficient of fat absorption (%COA) from 3-day stool collection, total energy intake (% estimated energy requirement ;%EER) for active children, and fat intake types (SFA, MUFA, PUFA, LA and ALA) as %kcal, and LA & ALA intake as % Adequate Intake (%AI) were collected and calculated. Linear regression models (LME) adjusted for age, gender, %EER and %COA, intake with type of fat intake predicting serum LA, DHA, & T:T were performed. Results: Since the LME models for diet and serum PUFA status were not different for 12 and 24 months data, they were combined for 73 subjects, providing 63 observations at 12 months and 70 observations at 24 months. For the subjects (8.9 ± 1.1 years, n = 38 females) %COA was 85±12, %EER 115±22, total fat intake was 37±5, SFA 15±3, MUFA 13±2% and PUFA 6±2% total energy intake. LA and ALA intake were 5.6±1.5 and 0.5±0.1 %kcal, and 13±4 and 13±5 % AI, respectively. R2 values from multiple regression analyses are presented in Table 1. Conclusions: The type of fat intake influenced serum PUFA status. Increased dietary intake of MUFA & PUFA may improve serum FA status. In addition to CF recommendations for energy & total fat intake, recommendations for type of dietary fat intake may be indicated for children with CF & PI to optimize FA status. Supported by: NHLBI (R01HL57448), the Clinical Translational Research Center (M01-RR-00240) & Nutrition Center at CHOP, the CF Foundation, and the Sahlgren’ska Academy of Göteborg University

P0801

Title:
The skinny on tuna fat; pediatric dietary implications

Asim Maqbool 1, Birgitta Strandvik 2, Virginia A Stallings 1
1) The Children’s Hospital of Philadelphia, University of Pennsylvania School of Medicine, Philadelphia, USA 2) Institute of Clinical Sciences, Sahlgren’ska Academy, Göteborg University, Göteborg, Sweden

Summary:
Objective: Omega 3 and 6 polyunsaturated fatty acids (PUFA) have significant implications in health and disease, and include cystic fibrosis (CF), asthma, inflammatory bowel disease, and cardiovascular disease. Dietary fish intake influences serum FA status; many children are poor fish eaters. In North America, tuna is one of the more common fish consumed by children and adolescents. Little is known regarding the PUFA contents of the many tuna products available. The objective was to determine PUFA profiles of different commercially available tuna products. Methods: The fat and PUFA content of eight tuna products from two leading US suppliers were analyzed by lipid extraction and analysis of fatty acid methyl esters by capillary gas-liquid chromatography. Select PUFA profiles of clinical interest are reported and compared, specifically, linoleic (LA), alpha-linolenic (ALA), arachidonic (AA), eicosapentaenoic (EPA) and docosahexaenoic acids (DHA) as well as total omega 3 and omega 6 FA and AA: DHA ratio, expressed as both percent per serving and mg per gram. Results: The tuna products differed by: packaging (oil versus water), albacore versus “chunk light” tuna, as ready to eat tuna salad. Percent energy from fat varied from 3 to 31%. LA content varied from 3 to 56% fat energy (0.4 to 109 mg/g tuna);
DHA varied between 0.6 and 6.5 mg/g tuna, EPA between 0.1 and 1.5 mg/g, the omega 6: omega 3 ratio from 1:5 to 7:1, and the AA:DHA ratio from 1:5 to 1:12, depending on the type of product. Conclusions: The LA, ALA, EPA, DHA, omega 6: omega 3 and AA:DHA ratio, and content varied widely among products. Tuna is a common and important source of PUFA for children. PUFA content information is required in selecting which marketplace products may be more favorable for patients with inflammatory conditions, and specifically in CF, for the common risk of essential fatty acid deficiency. Supported by the NHLBI (R01HL67448), the General Clinical Research Center (RR00240), the Nutrition Center at the Children’s Hospital of Philadelphia, the Cystic Fibrosis Foundation, and Erica Lederhausen Foundation.

P0802

Title:
School children obesity in Tunisia: prevalence and risk factors

Nadia Siala 1, Imen Ayadi 1, Maryam Kallal-Sellami 2, Ali Sili 3, Ahmed Maherzi 1, Mongi Ben Hariz 1
1) 1. Research Unit. Pediatric Department. Mongi Slim’s Hospital, Tunis, Tunisia 2) 2. Immunology Department La Rabta Hospital, Tunis, Tunisia 3) 3. Department of School Medicine. Ministry of Public Health, Tunis, Tunisia

Summary:
Children obesity is a great sanitary problem in many countries. It begins to be also disquieting in developing countries. The aim of this transversal study led in a northern region of Tunisia (North Africa) was to evaluate the prevalence of obesity in school children and to determine familial and socioeconomic risk factors. Materials and Methods: This transversal study was led in a northern region of the country. It concerned 5334 primary school children. There were 2676 boys (50.2%) and 2658 girls (49.8%). Their ages were ranging from 6 to 14 years (median age 9.54 years). The weight and the height were measured for all children and the body mass index (BMI) was calculated. The BMI was compared to the French curves (C1), to the “International Obesity Task Force” curves (C2) and to the “Centers for Disease Control and Prevention” curves (C3). The age of the parents, their ages at the birth of the child, their instruction level, their income (according to their profession), the number of brothers and sisters, the rank of the child among his brothers and sisters and the social level of the district in which the school is situated were analyzed. Results: An abnormal BMI was observed in 11.8%, 12.4% and 12.9% according to respectively C1, C2 and C3 curves. Second degree Obesity was observed in 3.3% and 3.2% according to respectively C1 and C2 curves. According to C3 curves, 3% of the children had a BMI superior to the 97th centile. The degree of obesity was correlated neither to the age and the sex of the child, nor to the age of the parents at the time of the study and at the birth of their children. Nevertheless, we found that the prevalence of obesity was higher in children whose parents had a higher level of instruction (p<0.05). The frequency of obesity was also higher in children whose parents had higher incomes and the difference was significant concerning the father incomes (p<0.05). The prevalence of obesity was higher in children who had less sisters and brothers (p<0.05) and who were ranged among the oldest (p<0.05). The frequency of obesity was higher in schools located in high socioeconomic level districts (p<0.05). Conclusion: Children obesity is probably in progression in Tunisia. Its prevalence is about 12%. It is essentially observed in small families with high socioeconomic and educational level. Preventive measures considering these epidemiologic results should be held.

P0803

Title:
Evolution of essential fatty acids composition of French human milk from 1997 to 2007

Claude Billeaud 1, Leslie Couédello 2, Carole Vaysse 2, Nicole Combe 2, Philippe Guesnet 3, Guy Putet 4
1) CEDRE-Lactarium de Bordeaux, Bordeaux, France 2) ITERG, Bordeaux, France 3) INRA, Jouy-en-Josas, France 4) Association des lactarium de France, Lyon, France

Summary:
Objective : n-3 and n-6 long chain fatty acids (LCPUFA) are essential particularly to neurodevelopment of newborn infants. However, many variations in LCPUFA content of human milk are observed according to countries and dietary habits of the mother. Presently, LCPUFA content of European human milk has been taken as reference value by the Barcelona consensus conference in 2001 for optimal formula supplementation. The aim of the present study was to compare the LCPUFA content of human milk in France in 2007, using samples provided by various regional Human Milk Banks (HMB), to the Bordeaux one in 1997. Methods :The fatty acids composition of 142 samples of human milk representative of the whole France with 8 HMB (Bordeaux, Paris, Nantes, Tours, Dijon, Lyon, Montpellier, St Etienne) obtained in 2007, was analysed by Gas Chromatography with a BPX70 column. Qualitative oil consumption of mothers was assessed through dietary questionnaire. Statistical analysis was performed with Kruskall Wallis and Mann and Whitney U tests (p<0.05). Results: Fatty acid composition of human milk samples provided in 2007 by the eight French HMB did not differ significantly among HMB. The Fatty Acids (FA) contents (Mean, Min and Max) as % of total FA were the following: Linoleic acid (LA):0.82%,0.72-0.95 ; Linolenic acid (LNA):0.82%,0.72-0.95 ; Arachidonic Acid (ARA) : 0.39%,0.36-0.48 ; DHA : 0.24%,0.18-0.28; Saturated fatty acids (SFA) : 46.51%,42.35-48.70; Monounsaturated fatty acids (MUFA) : 36.97%,32.37-39.66; polyunsaturated fatty Acids (PUFA) : 13.17%,11.65-13.77; n-6 PUFA : 11.93%,10.50-12.45; n-3 PUFA : 1.24%, 1.11-1.36%; Trans fatty Acids (TFAs) : 1.27%,1.11-1.32. However, this 2007 profile differs significantly

1) CEDRE-Lactarium de Bordeaux, Bordeaux, France 2) ITERG, Bordeaux, France 3) INRA, Jouy-en-Josas, France 4) Association des lactarium de France, Lyon, France
from the 1997 one coming from Bordeaux. Particularly, n-3 precursor content is more elevated in 2007. Moreover, n-6 precursor content tends to decrease and the omega6/omega3 ratio value improves. This reflects probably a better consumption of omega 3 in accordance with the dietary recommendations. Conclusion: in spite of the increase of omega 3 precursor, LCPUFA (AA and DHA) levels did not change; they remain in accord with the consensus of Barcelona. The decreasing level of TFAs in 2007 is explained by an improvement in France on margarine composition with a very low level of TFAs.

P0804

Title:
The effect of goat milk formula on weight gain and wellness of Thai infants with poor weight gain

Boosna VIVATVAKIN 1, Nopaorn Phavichitr 2, Sukrawan Intrarakao 3, Colin Prosser 4, Dianne Lowry 4
1) Chulalongkorn University, Bangkok, Thailand 2) Pramongkutglao Hospital, Bangkok, Thailand 3) Thamasat University, Patumtani, Thailand 4) Diary Goat Co-Operative, Hamilton, New Zealand

Summary:
Objectives: To compare goat and cow milk follow-on formula on 1. rate of weight gain 2. acceptance of formula 3. blood cholesterol, triglyceride, folate and iron status 4. change in plasma ghrelin in infants with delayed growth. Methods: A multicenter, double-blinded randomised trial. Non-breast fed infants with weight gain less than 360 g per month at age 6-13 mo. or less than 240 g at 14-23 mo. were enrolled with parental informed consent at Pediatric GI Clinic of three University Medical Schools in Thailand. Initial basic data (birth weight, gestational age, birth rank, parental social status, amount and type of feeding, type of milk formula and developmental status) were recorded at recruitment. The infants were randomised to goat milk follow-on formula (GMF) or cow milk follow-on formula (CMF), both at 22 Cal/Oz, for 4 weeks. Symptoms of regurgitation, bowel motions, weight, length, head circumference and left mid arm circumference were recorded at 0, 2 and 4 weeks. Hemoglobin level, cholesterol, 2-hr postprandial triglyceride, HDL, creatinine level, ferritin, serum iron, TIBC, folic acid and plasma ghrelin were recorded at 0 and 4 weeks. Results: 61 infants were randomised, 35 to GMF and 26 to CMF. Weight gain did not differ significantly (p=0.43) between the two milk groups: Milk Treatment Mean (95% CI) Week GMF CMF 0 1.0 (0.8, 1.2) 1.2 (0.9, 1.4) 2 1.3 (0.8, 1.8) 0.9 (0.2, 1.5) 4 1.3 (0.8, 1.8) 0.8 (0.2, 1.5) Tolerance (as measured by bowel motion, stool consistency and straining), serum HDL, cholesterol and ghrelin were not significantly different between GMF or CMF. Results are shown in the table below.

Table: Differences in weight gain, blood parameters and tolerance between GMF and CMF

<table>
<thead>
<tr>
<th>Parameter</th>
<th>GMF</th>
<th>CMF</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight gain (g/mo)</td>
<td>1.3 (0.8, 1.8)</td>
<td>0.8 (0.2, 1.5)</td>
<td>0.43</td>
</tr>
<tr>
<td>Hemoglobin (g/dl)</td>
<td>11.0 (10.0, 12.0)</td>
<td>10.5 (9.5, 11.5)</td>
<td>0.24</td>
</tr>
<tr>
<td>Cholesterol (mg/dl)</td>
<td>170 (150, 190)</td>
<td>165 (155, 175)</td>
<td>0.36</td>
</tr>
<tr>
<td>Folate (ng/ml)</td>
<td>300 (280, 320)</td>
<td>290 (270, 310)</td>
<td>0.76</td>
</tr>
</tbody>
</table>

Conclusion: Artificial feeding modifies the evolution of intestinal permeability of IUGR neonates in a porcine model.

Gaelle Boudry 1, Anne Morise 1, Bernard Seve 1, Isabelle Le Huërou-Luron 1
1) INRA UMR1079, RENNES, FRANCE

Summary:
Objective: Intestinal development is compromised in intra-uterine growth retarded (IUGR) neonates. Artificial feeding versus breast-feeding also impacts intestinal post-natal development. Our study aimed at evaluating the effect of artificial feeding on intestinal permeability of low birth weight piglets used as a model of IUGR neonates. Methods: Low birth weight (LBW 0.9±0.04 kg) or normal birth weight (NBW 1.4±0.02 kg) piglets were either fed by their mother (MF) or artificially fed (AF) from 7 to 28 days of age. Intestinal segments from the proximal jejunum and distal ileum were mounted in Ussing chambers to measure permeability to FITC-dextran 4000 (FD4 flux with carbachol in NBW: MF 230±19% vs AF 174±17% and in NBW: MF 142±15% vs AF 181±19%); suggesting alterations of the cholinergic regulation of jejunal permeability. * p<0.05 Conclusion: Artificial feeding modulates the evolution of permeability naturally occurring in LBW piglets when fed by their mother. It accelerates the development of intestinal permeability of LBW animals which becomes closer to that of NBW animals at 28 days of age. However, such drastic variations in intestinal permeability in individuals whose immune system is still immature might have harmful effects on the health of newborns.
consequences.

P0806

Title: Effect of n-3 polyunsaturated fatty acid (PUFA) supplementation in maternal diet on the nervous regulation of intestinal barrier of newborn.

Francine de Quelen 1, Guillaume Chesneau 2, Isabelle Le Huerou-Luron 1, Pierre Weill 2, Jacques Mourot 1, Gaelle Boudry 1
1) INRA UMR1079, RENNES, FRANCE 2) Valorex, COMBOURTILLE, FRANCE

Summary: Objectives: At birth, the intestinal barrier represents the first line of the host against harmful substances. This function is regulated in part by the enteric nervous system (ENS). The main objective of our study was to evaluate the postnatal development of the nervous regulation of intestinal permeability and the effect of maternal n-3 PUFA supplementation through alpha-linolenic acid (ALA) supplementation on this development in piglets. Methods: Two groups of sows received either a lard-based diet (LAR, n-6/n-3 ratio = 8 with ALA = 4.5% of total fatty acid) or a linseed oil based-diet (LSO, n-6/n-3 ratio = 1.5 with ALA = 24% of total fatty acid) during gestation and lactation. Piglets were sacrificed at 0, 3, 7, 21 and 32 d of age. The jejunum was collected to study the paracellular permeability (using FITC-dextran 4000, FD4) and its nervous regulation using an antagonist of the ENS (tetrodotoxin, TTX) or various agonists (electrical field stimulation (EFS), carbachol (CCH) or vasoactive intestinal peptide (VIP)) in Ussing chambers. Fatty acid composition was evaluated in sow milk samples collected every week from farrowing and in piglet blood and jejunum samples collected at sacrifice. Results: The LSO diet had no consequences on gestational performance of sow nor on piglet growth. However, the fatty acid composition of milk, blood and intestine were modified, with a higher proportion of n-3 PUFA in the LSO group. The LSO diet changed the basal intestinal permeability of piglets only at 21 d of age (399±92 for LAR vs 756±148 ng/cm2/h for LSO, p<0.05). It induced a stimulating tonus of the ENS since permeability was decreased of 28% with TTX (p<0.05) as opposed to the LAR diet where TTX had no significant effect. At that age, EFS and CCH had no effect on the intestinal permeability of LSO group whereas VIP decreased it by 44% (p<0.05). On the contrary, EFS and CCH increased (+ 47% with EFS and + 97% with CCH) and VIP had no significant effect on intestinal permeability of the LAR group. Conclusion: In conclusion, the fatty acid composition of the maternal diet can influence the nervous regulation of intestinal barrier function. Enriched ALA diet seemed to accelerate the development of ENS. The specific action of n-3 PUFA on the ENS and the consequence of their effect on intestinal barrier for the newborn (induction of oral tolerance or inflammation) need to be more explore.

P0807

Title: High protein formula modifies intestinal microbiota and increases intestinal permeability of IUGR neonates in a porcine model

Livie Chatelais 1, Christèle Gras-Le Guen 2, Agnès Jamin 1, Isabelle Le Huerou-Luron 1, Gaelle Boudry 1
1) INRA UMR1079, RENNES, FRANCE 2) CHU, NANTES, FRANCE

Summary: Objective: Intra-uterine growth retarded (IUGR) neonates are often fed high protein formula to ensure a catch up growth. However the impact of such formulas on intestinal function is not known. The objective of this study was to evaluate the effect of high protein formula on the microbiota and intestinal permeability of IUGR piglets. Methods: IUGR piglets (birth weight between the 10th and 20th percentile) were bottle-fed from 2 days of age with normal protein formula (NP, equivalent to sow milk) or high protein formula (HP, +35% of protein) for 5 days. A third group of piglets received the HP formula plus amoxicillin (150 mg/kg/d). At sacrifice, digestive contents and mucosa were sampled from the proximal jejunum, distal ileum and proximal colon for bacteria count. Tissues were mounted in Ussing chambers to measure permeability (FITC-dextran 4000, FD4). Mesenteric lymph nodes from the upper and lower intestine were sampled to measure bacterial translocation. Results: Piglet growth was higher in HP compared to NP piglets (85 vs 61 g/d, p<0.05). The microbiota and permeability of the jejunum and colon were not influenced by the diet. In the ileum the number of bacteria was higher in digestive contents of HP vs NP piglets. The number of aerobes was lower in the mucosa of HP vs NP piglets (6.7±0.3 vs 7.6±0.4 logCFU/g, p<0.05) while anaerobes adherence was not significantly modified. In HP compared to NP piglets ileal permeability was increased (FD4: 293±74 vs 126±36 ng/cm².h⁻¹, p<0.05) and ZO-1 mRNA expression was significantly decreased (same tendency for cingulin). Increased translocation in the lower intestine was also observed (HP: 82% vs NP: 50% of piglets with positive bacterial count in the mesenteric lymph nodes of the lower intestine, p<0.10). When amoxicillin was administrated to the HP animals, the microbiota in the digesta was not modified but the number of adherent aerobes and anaerobes decreased compared to HP piglets. Moreover, permeability was restored (FD4: 141±34 ng/cm².h⁻¹, p<0.05 compared to HP but >0.05 compared to NP) as well as translocation (43%, p<0.10 compared to HP but >0.10 compared to NP). ZO-1 and cingulin mRNA tended to come back to NP values. Conclusion: High protein formula induces major alteration in the distal ileum of IUGR piglets with increased permeability and translocation probably due to decreased expression of tight junction proteins. The exact role of the microbiota in those
effects is still to be clearly defined.

**P0808**

**Title:** Modulation of allergy development after supplementation with a novel bovine milk fraction in an infant rat pup model of formula feeding

Irmeli Penttila 1, Branka Grubor-Bauk 1, Mark DeNichilo 1
1) TGR BioSciences Pty Ltd, Adelaide, Australia

**Summary:** In infants, the gastrointestinal tract is exposed to food (such as maternal milk or formula), antigens at a time when the gut mucosal immune system is still developing. Oral antigens are normally processed in a manner that results in a regulated immune response that does not injure the host, establishing tolerance. It is widely thought that a deviation from this process results in food-allergic diseases. Breast feeding has been associated in some studies with a protective effect against allergy development. It is however important to highlight that a large proportion of mothers in today’s society, whether by choice or need, formula feed their infants. Today, standard milk formulations for infants contain all the necessary nutritional requirements for growth. However, the processes required for formula manufacture results in denaturation of essential bioactives. The potential for an inappropriate immune response to oral antigen challenge is therefore particularly increased in infants who are formula fed or those with a genetic predisposition to allergy development. Here we report on the actions of novel milk bioactive, TGR-313 with immunomodulating properties. In vitro studies on purified human T cells showed that this bioactive suppresses T cell activation, proliferation and secretion of IL-2, IFN-α and IL-6. Furthermore, TGR-313 was shown to have no detrimental effect on intestinal barrier function. To further assess the properties of TGR-313 in a pre-clinical setting, animal studies using a model of artificial rearing rat pups were carried out. In this model, allergy predisposed Brown Norway pups were fed infant formula, and serum parameters assessed. Treatment groups consisted of naturally suckled rat pups challenged with α-lactoglobulin (BLG), formula fed rat pups, formula fed rat pups given a bolus dose of 0.1 ml of a 20% TGR-313 solution three times /day and rat pups fed formula containing at 1/8 dilution of a 20% solution of TGR-313. TGR-313 significantly reduced both IgE and α-lactoglobulin specific IgG1 (associated with allergy development and Th2 immune responses). Furthermore TGR-313 maintained mucosal barrier function and lowered mast cell activation as measured by rat mucosal mast cell protease (RMCPII) release. Normalisation of allergy associated responses shows that TGR-313 modulated the immune response after formula feeding when used as a supplement and has the potential to reduce allergy development.

**P0810**

**Title:** Anthropometric nutritional status of children with chronic liver disease

Ángela María García Cifuentes 1, Carlos Alberto Velasco Benítez 1
1) Grupo de Investigación GASTROHNUP Universidad del Valle, Cali, Colombia

**Summary:** Introduction: Chronic liver diseases (CLD) in children compromise their nutritional status causing major morbimortality. Objective: To describe the anthropometric nutritional status of 60 children with CLD in the Hospital Universitario del Valle Evársito Garcia (HUV) of Cali, Colombia. Materials and Methods: Descriptive study in 60 children of the HUV followed for 6 years with CLD’s diagnosis. Information took were weight, height, clinical finds (jaundice, acholia, hypocholia, ascites, hypocratism, melena, haematemesis, collateral circulation, loss of weight, epistaxis, hematochezia, hepatomegaly, enlarged spleen), and laboratory studies (hemoglobin, platelets, albumin, direct bilirubine, aminotransferases, coagulation tests). It was considered to be a global undernutrition (UNT) when the deficit of weight/age (W/A)>10%, chronic UNT when the deficit height/A (H/A)>5% and acute UNT when the deficit W/H>10%. Results: The age was between 1 month and 14 years, 38 girls, 38 with biliary atresia, 8 with metabolic diseases, 4 with anatomical cystic anomalies, 3 with portal hypertension and cirrhosis, respectively, 2 with chronic active hepatitis, and infectious diseases, respectively, and 1 with hepatic congenital fibrosis. The principal clinical findings were hepatomegaly in 56, jaundice in 51, ascites in 32, enlarged spleen in 30, acholia in 27, collateral circulation in 19, hypocholia in 13, melena in 7, loss of weight in 6, epistaxis in 5, hematochezia in 2, and haematemesis and hypocratism in 1, respectively. They presented global UNT 48/60, acute UNT 35/45, and chronic UNT 43/60; anemia 34/60, thrombocytopenia 11/53, hypoalbuminemia 46/60, alteration in coagulation test 28/59, direct hyperbilirubimemia 48/60, and alteration of amino-transferases 43/60. Conclusion: The children with CLD of the HUV presented some degree of UNT in more than 71.7%, accompanied of hypoalbuminemia in 76.7% and altered hepatic tests over 71.7%.

**P0812**

**Title:** Body Image and Nutritional Status in Brazilian High School Students.
Summary:
Body dissatisfaction and attempts to lose weight are increasingly common among adolescents. This work aimed at investigating nutritional status, body composition, sexual maturation and their relation with self-body image in Brazilian adolescents from private and public schools. This study surveyed one-hundred-and-forty-one high school students between the ages of 14 and 18 years, from two different schools in Osasco-Brazil (92 from private school and 89 from public school). Nutritional status was expressed by body mass index (BMI) and BMI z-scores. All students answered a self administered questionnaire at school (Body Shape Questionnaire - BSQ) and identified their sexual maturation from different Tanner images. Overweight and obesity were identified in 17.7% of the students, with no differences between the schools. However, only 51.4% of them presented no body image distortion by BSQ score. Girls revealed more body image distortion than boys, and moderate or severe body distortion was present in 22.1% of all adolescents. A correlation model between BMI z-scores and Body Distortion Score \[ BDS(\%) = a + b \text{BMIz} + c\text{BMIz}^2 + d\text{BMIz}^3; BDS(\%) = 24,326 + 18,007\text{BMIz} + 1,585\text{BMIz}^2 - 2,996\text{BMIz}^3 \] showed statistical non-linear correlation (Pérson’s correlation= 0.498; adjusted R² = 0.235). These findings suggest that body image distortion is frequent in these Brazilian high school students, especially in girls. A correlation was observed between this condition and BMI z-scores.

P0813
Title:
RCT of antibiotic prophylaxis to reduce infection rates at paediatric percutaneous endoscopic gastrostomy (PEG) tube insertion

Catherine E Paxton 1, Michelle I Wilson 2, David Hoole 1, Fraser D Munro 1, Peter M Gillett 1, David C Wilson 2
1) Royal Hospital for Sick Children, Edinburgh, United Kingdom 2) University of Edinburgh, Edinburgh, United Kingdom

Summary:
Objective: Infection is a common complication and cause of morbidity of gastrostomy tube insertion. Although meta-analysis has shown the value of antibiotic prophylaxis for adults having PEG tube insertion, there have been no controlled trials in children. We aimed to establish evidence by performing an RCT of antibiotic usage on peristomal infection rates at paediatric PEG tube insertion. Methods: A double blind, randomised placebo-controlled trial of a single intravenous injection of Ceftriaxone or of 0.9% saline at paediatric (<18 years) PEG tube insertion was performed in a regional paediatric teaching hospital. Children were excluded if they had received any antibiotics in the previous 14 days or required antibiotic prophylaxis for clinical reasons. Randomisation was performed by a pharmacist using consecutive numbered sealed opaque envelopes, previously devised by a uninvolved statistician using a computer random number generator. The antibiotic or placebo were packaged in brown opaque syringes, and administered to the subject by the anaesthetist at the induction of anaesthesia. Outcomes were measured by a research nurse, blinded to treatment assignment. Primary outcome, peristomal infection, was measured using the Jain et al (Ann Int Med 1987; 107: 824-8) score - presence and amount of erythema (score 0-4), induration (score 0-3) and exudate (score 0-4). A maximum combined score of 8 on the Jain infection score or the presence of pus (exudate score > 3) and positive microscopy swab was the clinical criterion for infection. The follow up period was 14 days per subject. A microscopy swab was routinely sent on all children at day 7 or at any assessment with a score of 8 on the Infection Score or at any presence of pus (exudate score > 3). Primary analysis was performed using intention to treat analysis. Results: Recruitment to the study was slow due to high prevalent community antibiotic usage, and stopped after 56 children had been enrolled. 7 had major violations (3 PEG tube insertion impossible, 3 study drug not prepared by pharmacy by time of procedure, 1 enrolled in error as already receiving prophylactic antibiotics for procedure) and were removed from the study. The 24 children in the intervention group had a significantly lower peristomal infection rate than the 25 children in the control group at 8% and 32% respectively (p=0.04). Conclusion: Antibiotic prophylaxis significantly reduces peristomal infection rates at PEG tube insertion in children.

P0814
Title:
EVALUATION OF THE NUTRITIONAL STATUS AMONG CHILDREN UNDER FIVE YEARS-OLD IN FORTALEZA – CE, BRAZIL

Maria C V Martins 1, Edmundo J M Rocha 1, Maria C A Jucá 1, Virna C Silva 1, Eveline A Oliveira 1, Laura M Feitosa 1
1) Hospital Infantil Albert Sabin, Fortaleza, Brazil

Summary:
Aim: To estimate the prevalence and association with malnutrition, overweight and obesity risk factors among children under five years old. Methods: A transversal study carried out with 1,941 male ad female children under five years old, except children with cerebral paralysis and congenital
malformation, assisted at health stations, during the national vaccination campaign on August 20, 2005. 10 stations were selected, representing the 6 regions of the municipality. The children were evaluated anthropometrically, by a medical team trained previously and through checked equipment, until reaching the sample size. The mother, or legal tutor, answered a questionnaire on clinical-epidemiological data. Results: 1.004 (51.7%) male children and 937 (48.3%) female children were evaluated, with an average age of 31.13 ± 17.3 months. All the social levels were included, two minimum wages being the average income. The malnutrition prevalence was 15.6%, with 2.7% in the moderate and serious forms; the overweight prevalence was 15.8% and obesity was 9.1%. After a multi-varied analysis, malnutrition is associated with low family income (p=0.000), low maternal educational level (p=0.000) and low weight at birth (p=0.000); the overweight and obesity are associated with the maternal age (p=0.003) and weight at birth (p=0.000). The exclusive breast-feeding was observed among 40.6% of the children, with average time of 4.4 (± 2.05) months. Conclusion: Most of the children in Fortaleza presented appropriate nutritional status, a larger overweight and obesity prevalence being observed in relation to malnutrition. Malnutrition is associated with less favorable socioeconomic factors and low weight at birth. The maternal age and weight at birth showed a direct relationship with overweight and obesity.

P0815

Title: Ferrochel iron and ferrous sulfate in the treatment of the iron deficiency anemia among children

Maria C.V. Martins 1, Mércia L.C. Lemos 1, Edmundo J.M. Rocha 1, Edna D.M. Rocha 1
1) Hospital Infantil Albert Sabin, Fortaleza, Brazil

Summary

Aim: To compare the effectiveness and tolerance of the ferrous sulfate and bis-glycinate iron in the treatment of the iron deficiency anemia among 6 to 36 month-old children, from a low-income community in the municipality of Fortaleza – CE, Brazil. Methodology: Randomized, double blind, controlled clinical experiment including 79 children with iron deficiency anemia, who were assisted in a Basic Health Unit from April/2006 to May/2007. The anemia diagnosis was obtained through the hemoglobin levels (< 11g/dl), hematocrit (< 33%) and serum ferritin (< 12µg/l) obtained via peripheral venous puncture, upon the agreement of the legal tutor. The children with moderate/serious malnutrition according to the P/I index (z score) were excluded. The children were split into two groups for treatment with ferrous sulfate (Group 1) and ferrochel iron (Group 2), in the 50mg/ml concentration of elemental iron, in the 5mg/kg/day oral dose, once a day, over 28 days. The children were clinically and anthropometrically reevaluated on the 14th and 28th days to check adverse effects, and they were submitted to laboratorial exams at the end of the study. Results: Out of the 79 children who met the inclusion criteria, 16 (20.2%) did not finish the study, remaining 63, being 31 from Group 1, and 32 from Group 2. The average age was 18.5 ± 8.4 months, being 34 (54%) males and 29 (46%) females, with 17 (27%) presenting light malnutrition. The maternal and socioeconomic characteristics were similar in both groups, with 36 (57.1%) of the children living in families classified as below the poverty baseline (< 0.3 minimum wages). The classification of how serious the anemia was did not present any difference between the groups (p=0.404). 61% of the children presented light anemia. Adverse effects were observed among 26 children (41.3%), diarrhea being the most frequent one. No serious adverse effect was noticed. Nausea was the only adverse effect that showed statistical difference between the groups, the ferrous sulfate being the most referred to. The therapeutic answer was positive in the two groups, however, the medians of the hemoglobin and ferritin increase were higher in Group 1, but without statistical significance. Conclusion: A difference in the therapeutic answer was not observed between the groups, and the 28-day treatment was not enough, because only 33 children (36.5%) normalized the hemoglobin levels.

P0816

Title: An international survey of enteral nutrition protocols used in children with Crohn’s Disease

Kylie E Whitten 1, Paula Rogers 2, Chee Y Ooi 2, Andrew S Day 3
1) Department of Nutrition & Dietetics, Sydney Children’s Hospital, Randwick, Sydney, Australia 2) Department of Gastroenterology, Sydney Children’s Hospital, Randwick, Sydney, Australia 3) Department of Gastroenterology, Sydney Children’s Hospital, Randwick and and The University of New South Wales, New South Wales, Australia

Summary:

Objective: Over the last two decades, Exclusive Enteral Nutrition (EEN) has been suggested as an appropriate therapy to induce remission for children with Crohn’s Disease (CD). Literature suggests varied protocols are followed at different centres around the world. The purpose of this study was to learn more about the protocols currently used to deliver EEN at different centres. Methods: Surveys were emailed to health professionals identified as working in the area of paediatric CD in Europe, North America and Asia-Pacific. Results: 89% of 35 respondents used EEN for initial therapy at diagnosis or secondary therapy in previously diagnosed children. In the preceding 12 months, the mean number of children diagnosed was 19.4 per centre (range 2-40), of these 62% were treated with EEN (range 5-100%). The standard duration of EEN was 6-8 weeks (81%). Dietitians were always involved in the provision of EEN in 93% of centres, with nurses always involved in 60% of centres. Ninety percent of centres used polymeric formulae but many also used semi elemental or elemental formulae. 23 different formulae were utilised across the surveyed centres, with Modulen IBID (Nestlé) and Elemental 028 (Nutricia) being most frequently used. 56% of EEN was delivered orally, 37% via nasogastric tube and 7% via gas-
Trostomy. 81% of centres allowed flavourings to be added to formula. Wide variations existed between centres with the prescription of allowed food and fluids whilst following the ‘exclusive’ protocol: 16% permitted nothing by mouth, 48% allowed boiled sweets, 52% clear fluids, 39% chewing gum and 39% tea or coffee. The introduction of food after the EEN period also varied greatly. The most common practises were initial low fibre diet (26%) and gradual introduction of food quantity as formula volume decreased (52%). The period of time over which food was re-introduced ranged from 1-12 weeks. Conclusions: EEN protocols for the induction of remission in children with CD vary widely around the world. Similarities include the use of polymeric formula, allowing flavour additions and duration of treatment. However, vast differences occur with other aspects, such as formula choice, permitted foods during EEN and protocols for the re-introduction of normal diet. It is unclear if these variations alter the efficacy of EEN: further efforts are now required to standardise and optimise EEN protocols.

P0818

Title:
High frequency of hypovitaminosis D in healthy Danish Caucasian girls

Christian Mølgaard 1, Christel Lamberg-Allardt 2, Jette Jakobsen 3, Kim Fleischer Michaelsen 1
1) University of Copenhagen, Frederiksberg, Denmark 2) University of Helsinki, Helsinki, Finland 3) Technical University of Denmark, Kgs. Lyngby, Denmark

Summary:
Hypovitaminosis D may be a risk factor for development of a number of diseases apart from bone diseases, as cancer, diabetes mellitus type 1 and other autoimmune diseases. The objective of this cross sectional study was to examine the prevalence of vitamin D insufficiency (s-25 hydroxy vitamin D (s-25OHD) < 25-50 nmol/l) or deficiency (s-25OHD < 25 nmol/l) in healthy Danish girls and to what extent s-25OHD was related to season. From the Danish Central Person Register 11-12 year old healthy Caucasian girls living in Copenhagen were selected. About 25 percentage corresponding to 225 healthy girls mean (SD) age 11.4 (0.2) y agreed to participate. The inclusions were evenly distributed over one year. Among other things the following were registered at baseline: Weight, height, s-25OHD and s-PTH. Vitamin D and calcium intake were recorded by food frequency questionnaire. Mean (SD) vitamin D and calcium intake were 2.6 (1.4) microg/d and 1029 (617) mg/d, respectively. Mean (SD) height and weight were 150.5 cm (7.0) and 41.6 kg (8.7), respectively. S-25OHD (nmol/l) was strongly related to season (ANOVA <0.001) with median (5 perc; 95 perc) s-25OHD 31 (11; 57) [Jan-Mar], 38 (16; 61) [Apr-Jun], 62 (46; 90) [Jul-Sep] and 45 (23; 67) [Oct-Dec]. Overall 16% had s-25OHD < 25 nmol/l and 64% <50 nmol/l. During winter the figures were 30% and 91%, respectively. S-PTH was inversely related to s-25OHD (r=-0.30, p<0.001), and there was a tendency to a relation to season (ANOVA, p=0.07) with highest values during winter-time. In conclusion, hypovitaminosis D defined from current accepted cut of levels is very frequent in normal Danish girls, especial during wintertime. Whether hypovitaminosis D during childhood increase the risk of some serious diseases later in life has to be evaluated further. Financed by the European Commission's Framework V Programme. OPTIFORD (QLK1-CT-2000-00623).
Title: Double blind clinical trial of a fermented infant formula in cow’s milk allergy (CMA) prevention

Martine Morisset 1, Pascale Soulaine 2, Cécile Aubert-Jacquin 3, Denise A Moneret-Vautrin 1, Christophe Dupont 2
1) Internal medicine, clinical immunology and allergy, university hospital, Nancy, France 2) Department of pediatrics, hospital st vincent de paul, Paris, France 3) Bledina, Villefranche sur saone, France

Summary:
Objective: Intestinal microbiota is often mentioned in the genesis of food allergy (FA), which development may be affected by formula known to have an effect on the infant microbiota. A fermented infant formula (FIF) based on cow’s milk proteins (CMP), processed through bacterial lactic fermentation (with Bifidobacterium breve C50 and Streptococcus thermophilus 065), has such flora modulating properties, and was therefore studied in a cow milk allergy (CMA) prevention study. Methods. A prospective double-blind randomized trial was conducted with 2 groups of infants from families with ≥ 2 members (mother, father, child) with an atopic disease. They were randomly assigned to either a FIF or a standard infant formula (SIF) from birth - or weaning- until 12 months. During breastfeeding, mothers ingested the same formula than their child. Every clinical manifestation suggesting FA, (cutaneous, digestive or respiratory symptoms) was retained during the follow-up. At 4th and 12th month, clinical exams and systematic prick-tests (PT) to CM were performed. In case of CMA suspicion (any cutaneous, digestive or respiratory clinical symptom already described as potentially related to CMA), complementary tests were performed, (atopy patch tests and IgE to CM), and a CMP free diet started. After 2 month of CMP avoidance, oral challenges were performed and, when positive, the child labeled as CMA. Results: 115/129 infants were followed until age 12 months, 59 with FIF and 56 with SIF. The percentage of digestive and respiratory manifestations was significantly lower in the FIF group. A significantly lower sensitization to CM (positive PT) was observed in the FIF group: 1.7% versus 12.5%, (p = 0.03). A persistent CMA was observed in respectively 10.2% with FIF and 16.1% with SIF. Conclusions: In these infants at high risk of atopy, the CMA prevalence did significantly differ between groups. Nevertheless, FIF, even though not based on hydrolyzed proteins, reduced the rate of sensitization to CM as well as the global number of digestive and respiratory manifestations. FIF could reduce the incidence of minor CMA, a process that needs further confirmation.

Title: Place of cow’s milk allergy in city paediatric consultation: results of an observational descriptive study.

PH Benhamou 1, O. Bouzid-Tanjaoui 2, N Kalach 1, C Dupont 1
1) Saint Vincent de Paul Hospital, PARIS, FRANCE 2) Menarini Laboratories, RUNGIS, FRANCE

Summary:
Cow’s milk allergy (CMA) is frequently come across during ambulatory paediatric consultations. The aim of this study is to describe the paediatric practice in this domain in France. Methods: during the first semester of 2006, 379 paediatricians provided in a register an account of 6415 newborns of less than 6 months old exhibiting clinical symptoms that could be attributed to CMA. Results: 69.3% of the infants exhibited digestive manifestations and 49.1% cutaneous manifestations. Only 4.3% exhibited systemic manifestations that are characteristic of CMA. 63.3% were found to have a family history of allergy. When evocative symptoms of CMA were observed by pediatricians, 67.7% benefited from an immediate diet modification, 55% of which to an amino acid based formula. Tests have been prescribed in 2723 infants: ready to use Atopy Patch Test (APT, Diallertest®) was positive in 41.5% of infants (n=2236) whereas cow’s milk specific IgE was positive in 39.3% (n=1094). With reference to avoidance / provocation tests, the sensitivity and specificity were respectively: APT, 77% and 79%, specific IgE, 56% and 68%. On the clinical level, APT correlated more closely to clinical and cutaneous manifestations while specific IgE to generalized manifestations of the allergy. Abdominal pain was the symptom most frequently associated with a positive APT (p<0.001). Conclusions: 1. CMA was the most common diagnosis by paediatricians when presented with digestive and/or cutaneous manifestations. 2. When presented with the relevant symptoms, more than two third of the infants were immediately put on a special diet. MARTINE M. 3. APT was proved to be more sensitive and specific than specific IgE in newborns less than 6 months of age, particularly in cases of digestive and/or cutaneous manifestations.

Title: Ready to use Atopy Patch Test for cow’s milk allergy in Pediatric Practice

PH Benhamou 1, N Kalach 1, N Donne 2, A Olivier 2, P Soulaine 1, C Dupont 1
Summary:
Introduction: skin or digestive symptoms evoking a delayed form of cow’s milk allergy (CMA) are frequent in the daily medical practice in infants and children. Among the tests of diagnosis, ready-to-use Atopy Patch Test (Diallertest®) is a new tool specially designed for the ambulatory pediatric practice. The aim of this study was to evaluate its accuracy in young children with suspected CMA. Methods: 58 children from 4 to 134 months (medium: 31.14) with digestive (29.3%) or cutaneous (20.6%) symptoms or both (50.1%) evoking a delayed form of CMA as previously described by Sampson have been included in prospective multi-center study in France. After inclusion, Diallertest® (DBV Technologies, France), skin prick test (SPT, Stallergenes, France) and specific IgE measurement (Cap system®, Phadia, Sweden) were performed. Regardless of the results of the tests, a one-month diet without any cow’s milk protein was instituted before performing a challenge test. Results: 38 children have completed the protocol. Among them, Diallertest®, SPT and sIgE were positive in 36.8%, 10.5%, and 5.2% respectively. Compared to the challenge and results of the eviction diet, the sensitivity of the tests was 68.4%, 18.8%, 13.3% respectively, specificity 94.7%, 94.4%, 100%, VPP 92.9%, 75%, 100%, VPN 75%, 56.7%, 53.6%. Clinical symptoms did not influence the results. Diallertest® exhibited a better accuracy than other tests: 81.5% vs. 58.8% and 56.6% (p<0.005) and the reliability of Diallertest® was better in children before 2 years old (sensitivity, 77.8%, specificity, 100%). Conclusion: 1- In delayed forms of CMA in infants and children, Diallertest® is more accurate than other tests for diagnosis of CMA. 2- It is also more reliable in children less than two years.

P0822
Title: Use of extensively hydrolyzed formula in neonatal units - Results of a national survey
Alexandre Lapillonne 1, Arian Genot 3, Elsa Kermorvant-Duchemin 2, Christophe Dupont 1
1) Saint-Vincent de Paul Hospital, Paris, France 2) Paris Descartes University, Paris, France 3) Medical center, Parly 2, France

Summary:
Recommendations for the use of formulas containing extensively hydrolyzed proteins (EHFs) have been issued in France. They are limited to treatment of cow’s milk protein allergy, intestinal malabsorption/maldigestion, serious and/or prolonged diarrhea, and intestinal resections. The use of EHF in neonatal intensive care units (NICUs) is common but data on incidence of use and indications of EHF are lacking. Objectives: To evaluate the frequency of the use of EHF in NICUs and to describe their common indications. Methods: We performed a French national survey using a questionnaire sent to all 296 French NICUs. Each center was requested to determine, among the hospitalized infants, the number of infants receiving an EHF the very day of reception of the questionnaire, and to specify, for each, the main reason for such prescription. Results: One hundred seventy four (58.8%) units returned the questionnaire. Among the 1 969 hospitalized infants, 21 were fed an EHF (11.2%). There was a significant difference in frequency of use among neonatal care levels (level III = 8,5% vs. level II = 13.4%; p = 0.007). The main indications for EHF were prevention of gastrointestinal problems of low birth weight infants (38.9%), complementary feeding of breastfeeding (21.8%), treatment of non specific gastrointestinal problems of preterm infants (15.7%), and refeeding after necrotizing enterocolitis (13.4%). The use of EHF for the prevention of atopic disease was very rare (0.9%). Finally, 51%, 21% and 27% of NICUs declared that the composition of EHF was, respectively, “not adapted”, “adapted”, or “do not know if adapted” to the nutritional needs of the premature infants. Conclusions: NICUs largely use EHF. In ~2/3 of the cases, indications do not correspond to the recent national recommendations. Because an inadequate formulation fails covering the nutritional needs of premature infants, nutritional should get a better diffusion.

P0823
Title: Intrahospital determinants of Postnatal Growth Retardation in Very Low Birth Weight Infants
Cláudia R S Maia 1, Railson A S Brandão 1, Ângelo G Roncalli 1, Hécio S Maranhão 1
1) Federal University of Rio Grande do Norte, Natal, Brazil

Summary:
Introduction: very low birth weight infants (VLBW) present with postnatal growth retardation (PGR) as result of clinical complications and nutritional deficit suffered in the first weeks of life. Aim: assess PGR during the intrahospital period in VLBW and identify the correlated maternal and neonatal factors. Methodology: a total of 119 VLBW (<1500g) were followed from birth to hospital discharge from the Januário Cicco Maternity School/UFRN, between July 2005 and August 2006. The Kangaroo Method was adopted as well as the exclusive use of breast milk according to UNICEF Baby-Friendly Hospital Initiative recommendations. The W/A Z score was used based on the Population-Based Canadian Reference for Birth Weight for Gestational Age. PGR was assessed over two time periods: from birth to discharge from the neonatal ICU (PGRICU = W/A Z score at ICU discharge - W/A Z score at birth) and from birth to hospital discharge (PGRHD = W/A Z score at hospital discharge - W/A Z score at birth). Pearson’s test was
Objective: Gastrostomy feeding (GSF) is used in children needing prolonged enteral nutrition. Gastric metaplasia granulation (GMG) is tissue proliferation around the site of gastrostomy that could alter quality of GSF. Data on risk factors of GMG in children are scarce in the literature. The aims of this study were to evaluate prevalence and risk factors of GMG, as well as changes in nutritional status of patients on GSF.

Methods: We reviewed reports of 34 children (20F/14G) who were referred to our unit for a gastrostomy insertion between March 1996 and August 2006. Data obtained included indication for gastrostomy, patient’s age, sex, growth for age, weight for height and nutritional status at the time of gastrostomy. Nutritional status was evaluated with the ANZ classification. GMG was defined as tissue proliferation around the gastrostomy site that presented clinically or radiologically. Risk factors were the type of indication, type of gastrostomy, age and sex of the patient, the presence of congenital malformations, hyperinsulinemia, cystic fibrosis, the type of enteral formula, age and nutritional status at the time of gastrostomy, the presence of any drug used to prevent GMG and the presence of complications.

Results: Indications for gastrostomy were neurological conditions (51%), congenital malformations (36%), hyperinsulinemia (6.5%) or cystic fibrosis (6.5%). Mean AGP was 27±6 months, using endoscopic (31%) or surgical method (69%). GMG appeared in 72% of patients, 2±0.3 months post gastrostomy. Nutritional status, DOD, AGP and MOI were not significantly correlated with GMG (table 1). At 50±7 months post gastrostomy, nutritional status of patients with denutrition before GSF improved significantly (n=13; weight for height: 84±2 vs 92±4, p≤0.04; height for age: 6±2 vs 16±7th percentile, p≤0.02). Nutritional status of the others did not change significantly (n=19; weight for height: 84±2 vs 92±4, p≤0.04; height for age: 6±2 vs 16±7th percentile, p≤0.02). There was no association with the following factors: gestational age, sex, proper weight/gestational age, weight at ICU discharge to Kangaroo lodging, weight at hospital discharge, duration of fasting, duration of enteral nutrition, of oral intake, need for ventilation in the delivery room, Apagar in the 5th minute of life, and transfontanellar abnormalities. Conclusion: we underscore the intrahospital neonatal complications as determinants of weaning in VLBW, serving as an alert to the multiprofessional team, especially in the neonatal ICU phase. The low birth weight and longer recovery time signal postnatal nutritional compromise which could be aggravated by the early weaning of these infants.
P0826

Title: Exclusive breastfeeding at one month: a pilot study

Mihaela Gheonea 1, Elena Coleta 1, Mirela Siminel 1, Ligia Stanescu 1, Cristian Gheonea 1
1) University of Medicine and Pharmacy of Craiova, Craiova, Romania

Summary:
Objective: To evaluate the rate of exclusive breastfeeding in a Romanian Regional tertiary maternity and to investigate changes in infant-feeding practices during the first month after hospital discharge. Methods: Pilot study to validate the feasibility of a populational study in Oltenia Region. Data were collected from mothers of children attending a Paediatric department. Logistic regression was used to evaluate healthcare system, demographic, economic, psychosocial, and environmental factors. Results: Two-hundred-ten mothers were questioned one month postpartum. Any breastfeeding and full breastfeeding initiation rates were 81% and 74%, respectively. One month postpartum, the corresponding rates of any and exclusive breastfeeding were 76% and 64%, respectively. Exclusive breastfeeding at one month is more likely if mothers presented previous experience of breastfeeding (O.R. 1.57; 95% CI 1.19-2.14) and rooming-in in maternity ward (O.R. 1.39; 95% CI 1.11-1.62). Conclusions: Data collected suggest that mothers can adopt exclusive breastfeeding at home, although formula supplementation was introduced in maternity. Larger study to evaluate the impact of various factors on breastfeeding in this population can provide significant data for families and caregivers and the healthcare system.

P0827

Title: Plasma leptin and ghrelin in children and adolescents with cirrhosis: preliminary analysis

Cristina T. L. Dornelles 2, Maria Inês A. Wilasco 2, Rafael L. Maurer 1, Carlos O. Kieling 2, Helena A. S. Goldani 2, Themis R. Silveira 2
1) Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil 2) Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

Summary:
Objective: Anorexia and hypermetabolism are common disorders in children with cirrhosis. Plasma levels of both leptin and ghrelin are altered in patients with starvation and chronic diseases associated with anorexia. We tested the hypothesis that leptin levels may be increased and ghrelin levels altered in cirrhotic children and adolescents. Methods: Nineteen children with cirrhosis aged 6 to 180 months (58% due to biliary atresia) and 19 healthy children matched for sex and age, taken as controls, were evaluated and 58% were female. Blood samples were collected at least after 3 hours fasting period. Leptin and acylated ghrelin levels were assessed by ELISA commercial kit (Linco Research, St Charles-MI, USA). Body composition including body mass index (BMI) and body fat mass were determined and classified according to WHO 2007 standard reference. All the controls are eutrophic as well as, 63% of cirrhotic patients, 32% undernourished and 5% obese. Results: Plasma leptin levels of children with cirrhosis were significantly lower than healthy controls (2.50 ±2.29 vs 3.71 ±4.02 ng/mL, p=<0.001) but ghrelin levels were not (187.30±136.52 vs 320.87±220.79 ng/mL, p=0.94). Ghrelin and leptin in both groups did not correlate with sex and nutritional status. Leptin showed a positive correlation with age of cirrhotic patients (r=0.642;p=<0.001) and controls (r=0.58;p=0.009) and BMI of cirrhotic (r=0.59;p=0.012) and controls (r=0.714;p=0.001) respectively. There was a negative correlation between age and ghrelin levels in healthy controls (r=-0.511;p=0.025) but in cirrhosis there was no correlations with age and BMI. Conclusions: Plasma leptin levels are significantly lower in children with cirrhosis and are correlated with age and BMI. Circulating ghrelin levels do not present any correlation in cirrhotic patients.

P0829

Title: Isolation, Identification and Characterization of Seven Small Bioactive Peptides from Lactobacillus GG Conditional Media that Exert both anti Gram-Negative and Gram-Positive Bactericidal Activity

Ruiliang Lu 1, Nandakumar Madayiputhiya 2, Alessio Fasano 1
1) Mucosal Biology Research Center, University of Maryland, School of Maryland, Baltimore, USA 2) Proteomic Core Facility, University of Maryland, School of Maryland, Baltimore, USA

Summary:
Objective: Diarrheal diseases remain a major human plague that still claim millions of lives every year. Probiotics are known to have a beneficial incidence of GMG.
effect on diarrheal diseases but their mechanism of action has not yet been completely established. It was previously reported that Lactobacillus GG produced small molecular weight substances in their culture media which inhibit a wide range of bacterial species. Aim of this study was to fully characterize the small molecular weight substances elaborated by LGG that exert anti-bacterial effects. Methods: LGG conditional media was subjected to size fractionation, followed by high throughput screening for antibacterial activity. The positive fraction (<1000 D) was subjected to Liquid chromatography/Mass spectrometry. The identified peptides were synthesized by Symphony peptide synthesizer (PTI Instruments, Boston, MA) and purified by HPLC using Dynamax reverse-phase C18 column. Both A600 measurement and bacteria agar plats culture were used to test for antibacterial activity. Results: The following seven small peptides were identified from <1000 D fraction of LGG conditional MRS medium: VHTAPK, GKLSNK, YTRGLPM, NPSRQERR, MLNERVK, LSQKSVK and PDENK. To check for their anti-bacterial activities, the effect of LGG (19.7 X 10 12 CFU/ml) conditional media on E. coli growth was used as positive control and set as 100% inhibition. The anti-bacterial activity for the seven tested peptides was: NPSRQERR (2.3mM) 85.7%; VHTAPK (3.2mM), 31.6%; MLNERVK (2.36mM), 11.9%; YTRGLPM (1.17mM), 11.7%; LSQKSVK (2.19mM), 8.49%; GKLSNK (2.16mM), 8.88% and PDENK (3.33mM), 72.3%. For E. coli concentration of 3.09x1013 CFU/ml, the IC50 for NPSRQERR is 4.2mM; VHTAPK, 3mM; PDENK, 6mM. Peptide NPSRQERR was also tested on Staphylococcus aureus and Salmonella growth, showing anti-bacterial effects comparable to those detected on E. coli. Conclusions: LGG elaborates small peptides showing various degrees of anti-bacterial activity. NPSRQERR showed the most potent anti-bacterial effect that was detected both on Gram-negative and Gram-positive microorganisms.

P0830

Title: Repeatability of the 13C-labeled mixed triglyceride breath test in children: partial improvement by dietary changes

Denise Herzog 1, Edgard Delvin 2, Caroline Albert 2, Jacques Edouard Marcotte 1, Ernest Seidman 3
1) University of Montreal, Department of Pediatrics, Montreal, Canada 2) University of Montreal, Department of Clinical Biochemistry, Montreal, Canada 3) University of McGill, Department of Pediatrics, Montreal, Canada

Summary: 13C-MTGB-BT estimates the hydrolysis of triacylglycerols by pancreatic lipase and could be a useful tool to monitor dose requirements of pancreatic enzyme supplements in cystic fibrosis patients with exocrine pancreatic insufficiency. However, problems with the repeatability of the test have hampered its use. AIM: To assess the repeatability of the 13C-MTGBT using an improved test protocol. METHOD: After a special diet the day before and an overnight fast a standardized test emulsion containing 5mg/kg 13C-2octanoyl-1,3-distearin was taken. Before and during the 6h after the test meal, end-expiratory breath samples were collected in duplicates, at intervals of 30 minutes. The BT was carried out twice at 2 weeks interval. Bland and Altman plots were done to determine coefficients of repeatability (CR) RESULTS: Ten healthy individuals, mean age 10.9 years (8.6-12.8), 7 girls and 3 boys underwent the test twice at 2 weeks interval. DOB = delta over baseline, SD = standard deviation, *paired t-test The CR of each of the 10 individual test pairs are 0.9 (10%), 1.9 (21%), 0.5 (7.5%), 1.1 (13.5%), 1.4 (13.5%), 1.8 (28%), 0.6 (7.7%), 1.3 (14.2%), 1.4 (15.5%), and 1.8 (24.5%), respectively. CONCLUSION: Even though mean baseline, cumulative and maximal 13C-enrichments, and time to reach maximal 13C-enrichment were comparable for tests 1 and 2, there was poor agreement between the two tests, as expressed by the CR. The test protocol has to be further improved to be useful for the follow-up of patients with cystic fibrosis requiring pancreatic enzyme supplements.

P0831

Title: The 13Carbon Mixed Triglyceride Breath Test (13C-MTGBT) discriminates between CF patients with exocrine pancreatic insufficiency and healthy controls

Denise Herzog 1, Edgard Delvin 1, Caroline Albert 2, Jacques Edouard Marcotte 1, Ernest Seidman 3
1) University of Montreal, Department of Pediatrics, Montreal, Canada 2) University of Montreal, Department of Clinical Biochemistry, Montreal, Montreal, Canada
Summary:
The 13C-MTGBT estimates the hydrolysis of triacylglycerols by pancreatic lipase and can be used to assess exocrine pancreatic function. Doubts on its repeatability have hampered its introduction as a simple and non-invasive indirect test for exocrine pancreatic function in children. AIM: to test for the accuracy of the 13C-MTGBT to discriminate between CF patients with exocrine pancreatic insufficiency and pancreatic enzyme supplements and healthy controls. METHODS: After an overnight fast, 9 CF patients (3 girls & 6 boys, mean age: 11.9 years) with the deltaF508 mutation with FEV1 > 80% and exocrine pancreatic insufficiency (fecal elastase < 100 mcg/g wet stool), and 10 healthy individuals (7 girls & 3 boys, mean age 10.9 years) took a standardized test emulsion containing 5 mg/kg 13C-2octanoyl-1,3-distearin. CF patients received pancreatic enzyme supplements. Before and during 6h after the test meal, end-expiratory breath samples were collected in duplicates, at intervals of 30 minutes. The BT was carried out twice at 2 to 4 weeks interval. In CF patients, a 72h stool collection for fecal fat analysis, including a 72h food diary was begun immediately after the first BT. RESULTS: The table below summarizes the tests results. DOB = delta over baseline, SD = standard deviation, p* Mann-Whitney U Mean coefficients of repeatability, representing the mean delta‰ disagreement between test 1 and 2, were 15.8% (7.5-24.5) for the control group and 36.7% (18-57) for the CF-group. Conclusion: Even though the agreement between tests 1 and 2 was insufficient, discrimination between CF patients taking pancreatic enzyme supplements and healthy controls is highly significant. The 13C-MTGBT is therefore useful to discriminate normal exocrine pancreatic function from severe exocrine pancreatic insufficiency.

Title:
An extensively hydrolyzed formula with and without a probiotic is hypoallergenic in children with milk hypersensitivity: a double blind controlled trial

A Muraro 1, M Hoekstra 2, Y Meijer 2, C Lifschütz 3
1) Dep Ped. Univ degli Studi di Padova e Regione Veneto, Padova, Italy 2) Wilhelmina Child. Hosp, UMCL, Utrecht, The Netherlands 3) Mead Johnson Nutritional, Evansville, USA

Summary:
Introduction: Preventive and therapeutic properties of the probiotic Lactobacillus GG (LGG) related to atopic disease in infants with CMA have been described. Lactobacillus GG has been added to Nutramigen®, an extensively hydrolyzed protein formula. Objective: To compare the hypoallergenic properties of an extensively hydrolyzed formula with Lactobacillus GG (Nutramigen® LGG) to those of Nutramigen®, a randomized, controlled, prospective trial was conducted from January 2003 through November 2004 in 33 children 14 years old or younger, with documented cow’s milk (CM) hypersensitivity. Methods: The trial included children with a positive Double Blind Placebo Controlled Food Challenge (DBPCFC) to CM within 3 months of study enrollment, IgE-mediated CM hypersensitivity by positive CAP RAST to milk ≥5 kUA/L in ≤1 year and ≥15 kUA/L in >1 year), or physician-documented anaphylaxis to milk within 3 months plus a positive CAP RAST for milk. After an allergen elimination period, participants were challenged with both formulas following a DBPCFC protocol and observed for adverse reactions. In the absence of reactions, an open challenge and a 7 day feeding period of Nutramigen® LGG was performed. Calculated sample size required that 29 participants be classified as negative in the DBPCFC to confirm the hypoallergenicity of Nutramigen® LGG. Results: Thirty-three completed the DBPCFC, but two did not meet all of the allergenicity enrollment requirements. None of the patients demonstrated any reactions during the DBPCFC protocol and all 31 evaluable participants were classified as negative during the blinded portion of the study. No reactions occurred during the open label portion of the study. Conclusion: This study provides 95% confidence that at least 90% of milk-allergic children ingesting Nutramigen® LGG will have no reactions and, therefore, meets the classification of hypoallergenic as defined by the American Academy of Pediatrics.

Title:
Impact of early nutrition on resistance to common respiratory infections and allergic illnesses in the first 3 years of life

Eileen E Birch 1, Jane C Khoury 2, Susan Hazels Mitmesser 3, Cheryl L Harris 3, Carol L Berseth 3, Deolinda M Scalabrin 3
1) Retina Foundation of the Southwest, Dallas, USA 2) Center for Epidemiology and Biostatistics, Cincinnati Children’s Hospital Medical Center, Cincinnati, USA 3) Mead Johnson Nutritional, Evansville, USA

Summary:
Objective: To assess the effect of docosahexaenoic acid (DHA) + arachidonic acid (ARA) supple-
mentation in early infancy on the incidence of respiratory infections and allergic illnesses in the first 3 years of life. Methods: Two cohorts of infants who had completed randomized, double-blind studies of DHA + ARA-supplemented (marketed as 0.32%/0.64%, respectively) or non-supplemented formulas, fed from < 5 days through 12 months of age, were eligible for this study. A study nurse reviewed the infants’ medical charts for first diagnosis and recurrence of illnesses [upper respiratory infections (URI), wheezing, asthma, bronchiolitis, bronchitis, allergic rhinitis, allergic conjunctivitis, otitis media, sinusitis, atopic dermatitis and urticaria] according to predefined criteria. Multiple logistic regression was used for analysis, with gender, family history of atopy and smoking in the home included as covariates. Results: Parents of 89/176 (51%) children from the original cohorts consented for participation in this study; 38/89 (43%) of the children had been fed DHA + ARA-supplemented formula. On average the infants started formula at 4 days of life (range 0 to 14 days). Lower incidence of URI and wheezing/asthma/atopic dermatitis in the first 3 years of life was observed in the supplemented versus unsupplemented groups (45% vs. 76%, P=0.002, and 26% vs. 55%, P=0.007, respectively) (see Figure). The associated odds ratio (OR) for URI was 0.25 with 95% confidence interval (CI) 0.10 to 0.62, P=0.003 and for wheezing/asthma/atopic dermatitis was 0.29 with 95% CI 0.12 to 0.73, P=0.008. After adjustment for the covariates, the OR for URI was 0.22 with 95% CI 0.08 to 0.58 (P=0.002) and for wheezing/asthma/atopic dermatitis was 0.25 with 95% CI 0.09 to 0.67 (P=0.006). No statistically significant differences were detected between groups for bronchiolitis, bronchitis, allergic rhinitis, allergic conjunctivitis, otitis media, sinusitis and urticaria. Conclusion: Early nutrition with DHA + ARA supplementation was associated with reduced incidence of upper respiratory infections and common allergic illnesses in the first 3 years of life.

**P0834**

**Title:** Status of long-chain polyunsaturated fatty acids in infants receiving partially and extensively hydrolyzed formulas supplemented with Lactobacillus rhamnosus GG

**Deolinda M Scalabrín 1, Dennis Hoffman 2, Cheryl L Harris 1, Brian Kineman 1, Jon A Vanderhoof 1, Deborah A Diersen-Schade 1**

1) Mead Johnson Nutritionals, Evansville, USA 2) Retina Foundation of the Southwest, Dallas, USA

**Summary:**

Objective: To evaluate if supplementation of hydrolyzed formulas with Lactobacillus rhamnosus GG (LGG) alters long-chain polyunsaturated fatty acid (LCPUFA) status. Methods: A subset of 80 healthy infants from a larger multi-center, double-blind, parallel-designed, randomized, prospective study, received one of the following formulas from 14 to 150 days of age: extensively hydrolyzed casein formula with 0.32% fatty acids from docosahexaenoic acid (DHA) and 0.64% from arachidonic acid (ARA) (Control; n=27), the same formula with LGG (1 x 10^8 CFU/g powder; EH-LGG; n=23), or partially hydrolyzed whey/casein formula with the same DHA, ARA, and LGG levels (PH-LGG; n=30). Blood drawn at 150 days of age was analyzed for LCPUFA levels (% total fatty acids) and amounts (µg/mL) in plasma, red blood cells (RBC), plasma phospholipid, RBC phosphatidylcholine (PC) and RBC phosphatidylethanolamine (PE) by capillary column gas chromatography. Data were analyzed by analysis of variance. Results: No significant differences in levels or amounts of linoleic (18:2n-6), α-linolenic (18:3n-3), or DHA (22:6n-3) among groups and no differences in ARA (20:4n-6) between Control and EL-LGG were observed. PH-LGG had lower (p<0.05) amounts of ARA than Control and EH-LGG in total plasma (Mean ± SE=147.7±4.7, 174.4±4.9 and 169.0±5.3 µg/mL, respectively) and plasma phospholipid (122.1±7.1, 142.4±7.5 and 148.8±8.1 µg/mL, respectively), and lower levels of ARA in total plasma than Control and EH-LGG (10.2±0.2, 11.1±0.2 and 11.2±0.3%, respectively). ARA in RBC fractions were similar. Four LCPUFA (22:4n-6, 22:5n-6, 20:5n-3, 22:5n-3) in different blood lipid fractions were significantly lower for PH-LGG than Control and/or EH-LGG. Control and EH-LGG differed only in level of docosapentaenoic acid (22:5n-3) in RBC-PC (0.17±0.01 vs. 0.20±0.01%, respectively; p<0.05). Conclusion: The addition of LGG to the extensively and partially hydrolyzed formulas did not result in clinically relevant changes in blood fatty acid levels, suggesting that LGG had no impact on absorption and/or utilization of LCPUFA.
Title: Diarrhea, Feeding and Nutrition of the Child: About an inquiry achieved in five regions of Senegal

SALIOU DIOUF 1, ISSA WONE 1, IBRAHIMA DIAGNE 1, AMADOU DIALLO 2, MAMADOU DIAGNE 2, MAMADOU SARR 2

1) Institut Pediatrie Sociale, DAKAR, SENEGAL 2) PSSCUUSAID, DAKAR, SENEGAL

Greeks. In addition, Pomacs consumed less dietary cholesterol (216 vs. 308mg/d) and more fiber (17.4 vs. 13.1g/d) compared to Greeks (all p<0.05). No differences were found in calcium, phosphorus, magnesium and iron intake. However, Pomacs had higher intakes of vitA (818 vs 688ìg/d) and lower intakes of vitD (14 vs 18.1ìg/d) and vitC (90 vs 108mg/d) compared to Greeks. Pomacs consumed less milk (250 vs 334ml/d), more yoghurt (4.2 vs. 2.2servings/d) and more processed fruit juices (171 vs. 33ml/d) whereas they also consumed more junk food (4.2 vs. 1.2servings/d) with 98% of them being daily consumers (all p<0.05). Pomacs watched 1hour/d of TV but had engaged in moderate-to-vigorous activity (MVPA) 10h/wk; only 7% had <3hrs of MVPA. High engagement to MVPA was reflected in lower overweight and obesity rates of Pomacs (2.5% vs. 6% and 0% vs. 6.5%, respectively) Conclusion:Children in Greece (both Pomacs and Greeks) have no risk of macro- or micronutrient intakes below the recommendations. Pomacs followed a more westernized dietary pattern consuming more red meat, processed fruit juices and more junk food compared to Greeks. However, despite their higher energy intake, their high MVPA levels could explain the lower overweight and obesity rates observed in Pomacs. Intervention programs should focus on modifying the dietary habits of Pomac children by increasing their fruit or vegetable consumption and decreasing their junk food consumption.

P0836

Title: NUTRIENT INTAKE, FOOD HABITS AND SERUM LIPIDS OF GREEK-ROM SCHOOLCHILDREN

Objective: To evaluate the rate of exclusive breastfeeding in a Romanian Regional tertiary maternity and to investigate changes in infant-feeding practices during the first month after hospital discharge. Methods: Pilot study to validate the feasibility of a populational study in Oltenia Region. Data were collected from mothers of children attending a Paediatric department. Logistic regression was used to evaluate healthcare system, demographic, economic, psychosocial, and environmental factors. Results: Two-hundred-ten mothers were questioned one month postpartum. Any breastfeeding and full breastfeeding initiation rates were 81% and 74%, respectively. One month postpartum, the corresponding rates of any and exclusive breastfeeding were 76% and 64%, respectively. Exclusive breastfeeding at one month is more likely if mothers presented previous experience of breastfeeding (O.R. 1.57; 95% CI 1.19-2.14) and rooming-in in maternity ward (O.R. 1.39; 95% CI 1.11-1.62). Conclusions: Data collected suggest that mothers can adopt exclusive breastfeeding at home, although formula supplementation was introduced in maternity. Larger study to evaluate the impact of various factors on breastfeeding in this population can provide significant data for families and caregivers and the healthcare system.

Summary:

Aim: To study nutrient intake, food habits and biochemical profile of Greek-Rom children. Methods: Data were obtained by diet-history from a random stratified sample of schoolchildren aged 6-12 yrs (293 Greek-Rom, 1193 General Greek population). Fasting blood samples were obtained and serum lipids were determined in the Greek-Rom. Children were classified as obese according to BMI and waist circumference IOTF cutoff points. MANOVA, Mann-Whitney and Kruskal-Wallis tests were performed. Results: Greek-Rom had higher energy intake (2555 vs 1847Kcal/day), lower protein (9% vs 15%) and higher carbohydrate (50% vs 44%) intakes as a percentage of energy compared to Greeks. Greek-Rom children had higher intakes for saturated (15% vs 14%), monounsaturated (18% vs 14%) and polyunsaturated (8% vs 5%) fatty acids as well as dietary fiber (15.4 vs 13.1g/d). They also had lower intake of calcium (777 vs 844mg/d), vitC (55 vs 108mg/d) and vitD (14 vs 18ìg/d) but higher intake for phosphorus (1553 vs 1299mg/d) and iron (14 vs 9mg/d) (all p<0.05). Greek-Rom consumed less milk (57 vs 334ml/d), cheese (2.4 vs 4.2servings/d), veal (0.9 vs 1.7servings/d), chicken (0.4 vs 0.7servings/d), lamb/pork (0.2 vs 0.8servings/d), eggs (1.4 vs 3.6items/wk), salad (2.9 vs 5.7servings/wk) or other vegetables (0.1 vs 1.4servings/d) and fresh fruit (4.4 vs 9.8servings/wk) or juice (8 vs 97ml/d). Greek- Rom showed a higher preference compared to Greeks for low nutritional quality food items such as refined bread (22.4 vs 8.8g/d), fried potatoes (4.2 vs 2.4servings/wk), processed fruit juice (102 vs 33ml/d), soft drinks (454 vs 54ml/d) and junk food (5.2 vs 1.2 servings/d) with 98% of them being daily consumers (all p<0.05). The rates of overweight and obesity in Greek-Rom children are 6.1% (vs 6% in Greeks, NS) and 17.5% (vs 6.5% in Greeks, p<0.05), respectively. In the same time 5% of these children are mildly malnourished. Greek-Rom children’s imbalanced food habits have resulted in unfavourable lipidemic profiles; 16% of these children have total TC>200mg/dl, 7% have TG>150mg/dl, 5% have HDL<35mg/dl and 18% have LDL >130mg/dl. Conclusion: Greek-Rom schoolchildren have high consumptions of junk food and soft drinks while they consume insufficient amounts of meat, vegetables, fruits, fish and dairy food. Compared to the general population they have higher incidence of obesity and malnutrition in the same time and noteworthy rates of dyslipidemia. Dietary intervention is urgently needed.

P0837

Title: NUTRIENT INTAKE, FOOD HABITS AND SERUM LIPIDS OF GREEK-ROM SCHOOLCHILDREN

Objective: To evaluate the rate of exclusive breastfeeding in a Romanian Regional tertiary maternity and to investigate changes in infant-feeding practices during the first month after hospital discharge. Methods: Pilot study to validate the feasibility of a populational study in Oltenia Region. Data were collected from mothers of children attending a Paediatric department. Logistic regression was used to evaluate healthcare system, demographic, economic, psychosocial, and environmental factors. Results: Two-hundred-ten mothers were questioned one month postpartum. Any breastfeeding and full breastfeeding initiation rates were 81% and 74%, respectively. One month postpartum, the corresponding rates of any and exclusive breastfeeding were 76% and 64%, respectively. Exclusive breastfeeding at one month is more likely if mothers presented previous experience of breastfeeding (O.R. 1.57; 95% CI 1.19-2.14) and rooming-in in maternity ward (O.R. 1.39; 95% CI 1.11-1.62). Conclusions: Data collected suggest that mothers can adopt exclusive breastfeeding at home, although formula supplementation was introduced in maternity. Larger study to evaluate the impact of various factors on breastfeeding in this population can provide significant data for families and caregivers and the healthcare system.

Summary:

Aim: To study nutrient intake, food habits and biochemical profile of Greek-Rom children. Methods: Data were obtained by diet-history from a random stratified sample of schoolchildren aged 6-12 yrs (293 Greek-Rom, 1193 General Greek population). Fasting blood samples were obtained and serum lipids were determined in the Greek-Rom. Children were classified as obese according to BMI and waist circumference IOTF cutoff points. MANOVA, Mann-Whitney and Kruskal-Wallis tests were performed. Results: Greek-Rom had higher energy intake (2555 vs 1847Kcal/day), lower protein (9% vs 15%) and higher carbohydrate (50% vs 44%) intakes as a percentage of energy compared to Greeks. Greek-Rom children had higher intakes for saturated (15% vs 14%), monounsaturated (18% vs 14%) and polyunsaturated (8% vs 5%) fatty acids as well as dietary fiber (15.4 vs 13.1g/d). They also had lower intake of calcium (777 vs 844mg/d), vitC (55 vs 108mg/d) and vitD (14 vs 18ìg/d) but higher intake for phosphorus (1553 vs 1299mg/d) and iron (14 vs 9mg/d) (all p<0.05). Greek-Rom consumed less milk (57 vs 334ml/d), cheese (2.4 vs 4.2servings/d), veal (0.9 vs 1.7servings/d), chicken (0.4 vs 0.7servings/d), lamb/pork (0.2 vs 0.8servings/d), eggs (1.4 vs 3.6items/wk), salad (2.9 vs 5.7servings/wk) or other vegetables (0.1 vs 1.4servings/d) and fresh fruit (4.4 vs 9.8servings/wk) or juice (8 vs 97ml/d). Greek- Rom showed a higher preference compared to Greeks for low nutritional quality food items such as refined bread (22.4 vs 8.8g/d), fried potatoes (4.2 vs 2.4servings/wk), processed fruit juice (102 vs 33ml/d), soft drinks (454 vs 54ml/d) and junk food (5.2 vs 1.2 servings/d) with 98% of them being daily consumers (all p<0.05). The rates of overweight and obesity in Greek-Rom children are 6.1% (vs 6% in Greeks, NS) and 17.5% (vs 6.5% in Greeks, p<0.05), respectively. In the same time 5% of these children are mildly malnourished. Greek-Rom children’s imbalanced food habits have resulted in unfavourable lipidemic profiles; 16% of these children have total TC>200mg/dl, 7% have TG>150mg/dl, 5% have HDL<35mg/dl and 18% have LDL >130mg/dl. Conclusion: Greek-Rom schoolchildren have high consumptions of junk food and soft drinks while they consume insufficient amounts of meat, vegetables, fruits, fish and dairy food. Compared to the general population they have higher incidence of obesity and malnutrition in the same time and noteworthy rates of dyslipidemia. Dietary intervention is urgently needed.
Summary
The promotion of nutritional and feeding good practices associated with a struggle against the most frequent diseases such as Diarrhea, allow to reduce considerably deaths of children living in developing countries. A cluster sampling of two (2) degrees inquiry according to the WHO’s method has been achieved in February 2007 in five (5) out of the eleven (11) regions of Senegal. It aimed to study the knowledge, practices and coverage concerning Diarrhea, feeding as well as nutrition of children. The target was composed of three thousands one hundred and four (3 104) children aged from 0 to 23 months old. The questionnaire was given to women aged from 15 to 49 years old, mothers or caretakers of these children. During the 15 last days preceding the inquiry, Diarrhea was the 3rd disease the most frequent (36.6%) behind acute respiratory infections (39.2%) and Malaria (34.8%). In case of Diarrhea, oral rehydration sachets are still poorly used (19.9%) as well as Salt Sugar Solution (8.6%). Only 22.1% of the children drink water more than usually in case of Diarrhea. Half (50.9%) of the mothers breastfeed their children in the 1st hour following delivery. The exclusive breastfeeding rate is average and estimated to 42.6%. Between 7 and 12 months, 21.8% of the children do not receive any additional food, which contributes to the occurring of Malnutrition. The regular growth follow-up is low for, during the 3 last months, only 47.3% of the children have been weighed. Another strategy promoting growth is constituted by regular medicine against worms which rate is 52.9%. Children from six (6) to twenty three (23) months who have received supplies in vitamin A on the six last months represented 75.6% of the cases. In total, in these regions of Senegal, Diarrhea is a too frequent disease and the indicators related to children’s feeding and nutrition make up average rates, explaining largely the strong under five year mortality rate.

P0839

Title:
Associated factors to primary and secondary malnutrition of hospitalized children in the Civil Hospital of Guadalajara

Claudia Granados-Manzo 1, Alejandra Granados-Manzo 1, Edgar Vasquez-Garibay 1, Elisa Garcia-Morales 1, Enrique Romero-Velarde 2, Olga Ramirez-Magaña 1
1) Universidad de Guadalajara, Guadalajara, Mexico 2) Hospital Civil Dr. Juan I. Menchaca, Guadalajara, Mexico

Summary:
Objective: To demonstrate that associated factors to mild and moderate primary malnutrition differs from those associated to secondary malnutrition in hospitalized children of 6 to 60 months of age. Methods: In a cross sectional design, 166 children males and females from different clinical wards of the hospital were included. Z score of indices weight/age, height/age and weight/height as dependent variables was obtained. Also, socio-demographic, economical and housing characteristics, pathological and feeding background of children; family composition, number of children and civil status of parents were included. ANOVA, Student t test, chi square and Odd Ratio (95% CI) were also obtained. Results. The frequency
Objective. Severe malnutrition in the child with cerebral palsy (CP) requires intensive nutritional support. The purpose was to demonstrate that a five-week-period of continuous enteral feeding is enough to produce an efficient nutritional recovery in children with CP. Methods. With retrospective information of a clinical assay 31 severely malnourished children with CP were firstly included; 78% had spastic cuadriplejia. All subjects were fed a cow’s milk infant (with or without lactose) or soy protein isolated soy formula with a continuous infusion pump through enteral feeding during the first year of life and inadequate housing conditions were important risk factors of primary malnutrition. It is necessary to identify the determinant and/or coadjuvant and confusing degree of variables that were found significantly associated to primary malnutrition.

P0840

Title: Effect of intensive nutritional support in genetically identical triplets of nine months old with primary and severe malnutrition on growth and body composition

Edgar Vásquez Garibay 1, Gabriela Padilla Márquez 2, María Isabel Ibarra Gutiérrez 2, Olga Ramírez Magaña 1, Enrique Romero Velarde 1, Román Corona Rivera 2

1) Universidad de Guadalajara, Guadalajara, Mexico 2) Hospital Civil Dr. Juan I. Menchaca, Guadalajara, Mexico

Summary: Objective. To characterize the velocity of growth and body composition of nine months old, genetically identical triplet infants with severe and primary protein energy malnutrition after a six weeks-period of intensive nutritional support. Subjects. Background: mother of 18 years old, second pregnancy, 28 weeks of gestational age and father of 20 years old. First Triplet: Apgar 7-9, birth weight 890g with respiratory distress. Second triplet: Apgar 8-9, multiple congenital abnormalities in thoracic members that were diagnosed as arthrogryposis, birth weight 1100g. Third triplet: Apgar 3-8 with respiratory distress. They were genetically identical. First and second triplets received milk infant formula lactose free, and the third triplet soy formula. At two, four and six weeks they received liquids (mL/kg/d) (189, 236 and 256), energy kcal/kg/d (141, 189, and 205), and proteins g/kg/d (3.2, 4.1 and 4.4) respectively with minimum differences among them. Results. Initial weight at admission: first triplet 3540g, second 3320g, third 3935g. The average cost of weight gain (g) was 4.3, 3.7 and 4.3 kcal/kg/d of energy, and, 0.10, 0.08 and 0.10 g/kg/d of proteins respectively with small differences among triplets. Changes in anthropometric indicators are in table 1.

Table 1. Six weeks of nutritional support on the velocity of growth (delta) of nine months old infant triplets. Final – basal determinations

† arm muscular area; + Arm fat area

Conclusion. The weight increase among triplets was remarkably identical in those six weeks-period. The velocity of increase of arm circumference, arm muscular area and arm fat area seemed to be significantly lower in the second triplet probably related to her arthrogryposis.

P0841

Title: Effect of intensive nutritional support in the recovery of severely malnourished children with cerebral palsy

Edgar Vásquez Garibay; María Isabel Ibarra Gutiérrez; Enrique Romero Velarde; Olga Magaña Ramírez; Rogelio Troyo Sanromán; Universidad de Guadalajara; Hospital Civil Dr. Juan I. Menchaca;

Summary: Objective. Severe malnutrition in the child with cerebral palsy (CP) requires intensive nutritional support. The purpose was to demonstrate that a five-week-period of continuous enteral feeding is enough to produce an efficient nutritional recovery in children with CP. Methods. With retrospective information of a clinical assay 31 severely malnourished children with CP were firstly included; 78% had spastic cuadriplejia. All subjects were fed a cow’s milk infant (with or with no lactose) or soy protein isolated soy formula with a continuous infusion pump through enteral feeding either by naso-gastric or gastrostomy via. The whole group was stratified into three subgroups: Group 1 < 5 kg; Group 2 > 5 to ≤ 10 kg and group 3 > 10 kg of weight. A paired student t test for the comparison basal vs. final means was used. Results. 58% of cases were females, five subjects under 15, eight from 12 to 71, eight from 72 to 120 months and ten > 120 months of age. 21 subjects had the complete information. The total amount of liquids (mL) was significantly higher, final vs. initial mean in groups 1 and 2 (686 vs. 1034, 1222 vs. 1755 respectively) (p < 0.02). There were not differences in the protein and energy intake final vs. basal in any group, however, at final, groups 1, 2 and 3 were receiving 153, 130, 84 kcal/kg/d and proteins 3.6, 2.8, 1.7 g/kg/d respectively. Direct indicators as weight, height, tricipital and sub scapular skin folds and indirect indicators as BMI, total, muscular and fat arm areas were significant higher in the final vs. basal measurements (p < 0.01), but height in group 3 and arm muscular area in group 2. Conclusion. Five weeks of intensive nutritional support with an infant formula were sufficient for attaining a significantly nutritional and body composition recovery in severely malnourished children with CP independently of age. Adequate liquid, energy and protein intake were more evident when these children were stratified by weight instead of age.
Title: Risk factors associated to dyslipidemia in full term newborn infants attending to a General Hospital of the Mexican Institute of Social Security

Jorge L Segovia Reyes; Alma R. Del Ángel-Meza; Edgar Vásquez Garibay; Mercedes González-Hlta; Rogelio Troyo-Sanromán; Ramón Cervantes-Munguía;
Universidad de Guadalajara; Hospital General No. 89, IMSS;

Summary:
Objective. To identify risk factors associated to dyslipidemia in full term newborn infants attending to a General Hospital of Guadalajara, Mexico.
Methods. In a cross sectional study design 383 dyads mother-infant were included. A specific survey was applied to mothers for obtaining information about nutritional status, gynecologic and obstetrics background, and food frequency consumption during pregnancy and also a mother’s serum lipid profile was obtained. Birth weight, anthropometric measurements and umbilicus blood sample for lipid profile were obtained from each newborn. ANOVA, student t test, Mann Whitney U test, chi square test, Pearson correlation were estimated for statistical analysis. Results. In mothers, 97.9% cases showed high serum concentration of triglycerides, 46.5% hypercholesterolemia and 1.3% a low concentration of HDL-C. In newborn infants, 8.9% had abnormally high concentration of triglycerides, and 26.6% low concentration of HDL-C. Higher fat mother intake [OR 2.9 (1.1, 7.6), p = 0.026], urgent cesarean [OR 5.1 (1.4, 18), p = 0.007], newborn asymmetry [OR 2.4 (1.1, 5.9), p = 0.24], forceps application [OR 4.7 (1.2, 19.2), p = 0.05], major triglyceride mother concentration (p = 0.015), higher VLDL mother concentration (p = 0.016), and higher blood concentration of cholesterol, triglycerides and VLDL were associated to dyslipemic newborn infants (p < 0.001). Conclusion. From these results we can conclude that it is important to recognize that higher consumption of fat during pregnancy and disorders of mother’s lipid profile may influence the lipid profile of newborn infants and also it might increase the risk of morbidity and mortality of the dyad mother-infant during the neonatal period.

Title: PREVALENCE OF PROTEIN-ENERGY MALNUTRITION IN A COMMUNITY OF THE NORTHEAST OF BRAZIL

Suzy Santana Cavalcante 1, Emilia Nunes de Melo 1, Maria Clotildes Nunes de Melo 1, Milena Cerqueira de Santana 1, Carolina Candeias da Silva 1, Fernanda Grimaldi Braga 1
1) Federal University of Bahia – Professor Edgard Santos Hospital, SALVADOR, BRAZIL

Summary:
Protein-energy malnutrition (PEM) remains one of the most common causes of morbidity and mortality among children. Considered the most important isolated risk factor for sickness, malnutrition, the end result of chronic nutritional deprivation, magnifies the effect of every disease and is associated to 50.0% of death in children under 5 years in developing countries. Earlier weaning, low mother’s schooling level and low familiar income are frequently associated with increased rates of malnutrition. Objective: To identify the prevalence of PEM among children and adolescents in a community of the northeast of Brazil; to describe associated factors and characterize clinic and epidemiologic profiles of the population in the study. Methods: Cross sectional observational study initiated on August 2007 in a community of the state of Bahia, Brazil, and is still in progress. Children less than 15 years old were recruited after the adults responsible for them signed a statement giving their free and informed consent for participation. Systematic domicile visits for filling out the protocols and active observation were used as strategy to get information. Results: Results presented refer to the initial stage of the study. The incoming of the researchers in the community followed the foreseen steps to adaptation, reception and establishment of a trustworthy relationship with success. None of the visited residences have sewerage system; there was not a local health care or public illumination or regular garbage collection. One hundred and forty four children less than 15 years old were identified in 73 houses: 50.0% (72) male and 26.4% (38) less than 5 years. The prevalence of any degree of malnutrition was 46.7 per 100 individuals. Some important malnutrition associated factors were the presence of intestinal parasitosis (PR=1.49; CI95%=0.95-2.33), familiar income less than a minimum salary (1.31; 0.72-2.37), and low mother’s schooling level (1.07; 0.59-1.96); the difference between the groups, however, were not statistically significant (P>0.005). Conclusion: The presented results identify high prevalence of PEM in the studied group and confirmed the need to continue the study for recognition and better understanding of the local factors associated to malnutrition. KEYWORDS: Education; Health; Community

Title: Familiar dysfunction associated with obesity in children attending a Unit of Family Medicine in Guadalajara, Mexico
**Title:** Nutritional status and energy intake in children and adolescents with cancer in Guadalajara, Mexico

Claudia F. Martínez 1, Enrique Romero-Velarde 1, Edgar M. Vásquez-Garibay 1, Katja Stein 2, Fernando Sánchez-Zubieta 2, Rogelio Troyo-Sanromán 1

1) Institute of Human Nutrition, University of Guadalajara, Guadalajara, Mexico 2) Hospital Civil de Guadalajara “Dr. Juan I. Menchaca”, Guadalajara, Mexico

**Summary:**
Objective. Food consumption in patients with cancer should promote energy and nutrient intake according to the higher requirements, as well as to promote growth and to maintain a good nutritional status. The objective was to evaluate the nutritional status, food habits and energy intake in pediatric patients attending the Hospital Civil de Guadalajara “Dr. Juan I. Menchaca”. Methods. A cross sectional study was carried out in 92 children and adolescents 2-18 years old with cancer (time to diagnosis 4-24 months). A general questionnaire regarding food habits, a 24-hours dietary recall and a food frequency questionnaire were obtained. Weight and height measures were used to estimate indices height/age (H/A), weight/age (W/A), weight/height (W/H) and body mass index (BMI). The association of socioeconomic variables and time of evolution were explored in children with deficit of these anthropometric indicators with a chi square test; Student t test was also used for comparing non paired means. Results. 45 boys and 47 girls with mean age of 7.0 ± 4.1 years; 68.5% had acute lymphocytic leukemia. The proportion of children with deficit (< –2 SD) of indices was: H/A 10.8%, W/A 4.3%, and W/H 2.2%; some patients were overweight (> +2 SD), 10.9% with W/H index and 16.3% with BMI. Mother schooling, family income or time of evolution of disease were not associated with deficit on anthropometric indicators; however, time of evolution of disease was positively and almost significantly correlated with BMI (r= 0.16; p = 0.06). There were not differences in BMI means between those with vs. without a history of steroid treatment. Consumption of fruits, vegetables and meat were poor, while cereals and milk were adequate; 32.6% consumed sodas every day and 45.6% candies. 57.6% accustomed the consumption of foods outside home; and, the street-food stands were the most visited places (26.1%). Energy intake was adequate as well as the energy distribution among macronutrients. Conclusion. Percentage of those with vs. without a history of steroid treatment. Consumption of fruits, vegetables and meat were poor, while cereals and milk were adequate; 32.6% consumed sodas every day and 45.6% candies. 57.6% accustomed the consumption of foods outside home; and, the street-food stands were the most visited places (26.1%). Energy intake was adequate as well as the energy distribution among macronutrients. Conclusion. Percentage of those with vs. without a history of steroid treatment. Consumption of fruits, vegetables and meat were poor, while cereals and milk were adequate; 32.6% consumed sodas every day and 45.6% candies. 57.6% accustomed the consumption of foods outside home; and, the street-food stands were the most visited places (26.1%). Energy intake was adequate as well as the energy distribution among macronutrients. Conclusion. Percentage of those with vs. without a history of steroid treatment. Consumption of fruits, vegetables and meat were poor, while cereals and milk were adequate; 32.6% consumed sodas every day and 45.6% candies. 57.6% accustomed the consumption of foods outside home; and, the street-food stands were the most visited places (26.1%). Energy intake was adequate as well as the energy distribution among macronutrients. Conclusion. Percentage of those with vs. without a history of steroid treatment. Consumption of fruits, vegetables and meat were poor, while cereals and milk were adequate; 32.6% consumed sodas every day and 45.6% candies. 57.6% accustomed the consumption of foods outside home; and, the street-food stands were the most visited places (26.1%). Energy intake was adequate as well as the energy distribution among macronutrients. Conclusion. Percentage of those with vs. without a history of steroid treatment. Consumption of fruits, vegetables and meat were poor, while cereals and milk were adequate; 32.6% consumed sodas every day and 45.6% candies. 57.6% accustomed the consumption of foods outside home; and, the street-food stands were the most visited places (26.1%). Energy intake was adequate as well as the energy distribution among macronutrients. Conclusion. Percentage of those with vs. without a history of steroid treatment. Consumption of fruits, vegetables and meat were poor, while cereals and milk were adequate; 32.6% consumed sodas every day and 45.6% candies. 57.6% accustomed the consumption of foods outside home; and, the street-food stands were the most visited places (26.1%). Energy intake was adequate as well as the energy distribution among macronutrients. Conclusion. Percentage of
Summary:
Objective: Conventional soybean oil-based emulsions are high in n-6 PUFA and containing only low amounts of α-tocopherol and n-3 long chain (LC)-PUFA. A novel lipid emulsion (SMOFlipid 20%) was developed consisting of soybean oil, medium-chain triglycerides, olive oil and fish oil to provide a balanced fatty acid and energy supply to premature infants requiring parenteral nutrition (PN). Methods: In a double-blind, randomised, controlled study, 60 premature neonates (gestational age <34 weeks, birth weights 1000-2500 g) received PN with either SMOFlipid 20% (SMO group) or a soybean oil lipid emulsion (Intralipid 20%, control group) for a mean duration of 11±3.8 and 10±3.6 days. Safety, efficacy and FA profile in red blood cells (RBC) were assessed on days 0, 8 and final. Results: 51 infants in the 2nd Dept. of Paediatrics, Semmelweis Univ. completed the study according to protocol (PP population). Evaluation of adverse events, serum triglycerides and other laboratory safety parameters showed good safety and tolerability of both treatment groups. In parallel, increase from baseline to final CRP levels was lower in the SMOF group than in the control group (1.1±0.8 vs. 1.9±0.2, P=0.025, PP) reflecting improved liver tolerability. In contrast, plasma MDA, an indicator of lipid peroxidation, decreased slightly in both groups (-0.7±0.1 vs. -0.9±0.1 µmol/L, ns). Conclusion: In premature infants, PN with SMOFlipid was safe and well tolerated and showed beneficial effects on liver tolerability, α-tocopherol status and lipid peroxidation indicating a fortified antioxidant capacity to counteract oxidative stress. The more balanced FA profile and n-3/n-6 FA ratio may contribute to improve the availability of n-3 LC-PUFA which have been considered essential for the development of neonatal brain and visual function.

P0847

Title:
ZINC THERPY TO CASES OF SEVER PROTIN – ENERGY MALNUTRITION(PEM)

ESSAM M AL-HADY 1
1) 1-ZGAZIG UNIVERSITY,PEDI.DEPT. 2-PRIVATE CLINIC,NOURA BUILDING., 1-ZGAZIG. 2-JEDDAH., 1-EGYPT. 2-SAUDI ARABIA.

Summary:
Objective: During studying cases of sever PEM specially sever Kwashiorkor KWO and Marasmic KWO in our Pediatric Department, Zagazig University, Egypt we diagnosed more than 20 cases of Acrodermatitis Enteropathica AEP which found to be very similar clinically to sever KWO. This stimulated us to assess the Zinc status to all the above diseases by: Method : 1-Estimation of Zinc level in the serum and urine of all the above cases and a control group, using Atomic absorption spectrophotometry. 2.Estimation of Alkaline phosphates (a zinc-dependant Enzyme). 3.Observing the clinical cure and growth velocity and zinc level response to oral zinc therapy to AEP and oral Zinc supplementation to the cases of severe PEM. Results : As regards cases of AEP: The mean serum zinc level before treatment was very low (46.1 µg / 100 cc). It raised significantly after treatment and flow up for 2 years to (69.7 µg / 100 cc) (P < 0.05). But the level was still below the control group (89.5 µg/100 cc.). There was also marked clinical improvement and the life was saved. The proper dose of the used zinc sulphate was found to be 150 mg/day orally divided on 3 doses after meal for at least 2 months with a maintenance dose up to 2 years (the duration of our work). No significant side effects had been reported. As regards severe PEM (34 cases) especially sever KWO: Studied for 2 years also: Group I without zinc supplementation and Group II received zinc supplementation by the same dose-based on the results of AEP-besides the routine management of severe PEM. Results: As regards cases of AEP: The mean serum zinc level before treatment was very low (46.1 µg / 100 cc). It raised significantly after treatment and flow up for 2 years to (69.7 µg / 100 cc) (P < 0.05). But the level was still below the control group (89.5 µg/100 cc.). There was also marked clinical improvement and the life was saved. The proper dose of the used zinc sulphate was found to be 150 mg/day orally divided on 3 doses after meal for at least 2 months with a maintenance dose up to 2 years (the duration of our work). No significant side effects had been reported. As regards severe PEM (34 cases) especially sever KWO: Studied for 2 years also: Group I without zinc supplementation and Group II received zinc supplementation by the same dose-based on the results of AEP-besides the routine management of severe PEM. Before Treatment: The mean serum zinc level was markedly decreased (54.6 µg/100 cc). The mean alkaline phosphates level was markedly lower than that of the control group. After treatment and follow up: The cure rate, growth velocity as well as the serum zinc level were significantly better in the group who received oral zinc supplementation (79.8 µg Versus 69.1 µg/100 cc respectively). The percentage of deaths was 47% in group I of sever KWO without zinc supplementation, while it was only 23% in the group with zinc supplementation. Conclusion : 1-We recommend oral zinc supplementation, as a line of therapy, to cases of sever PEM in a dose of 150 mg zinc sulphate orally/day, besides the routine management. 2- The zinc amount should be increased in the milk formulae which send to the underdeveloped areas.

P0848

Title:
Systematic review of fatty acid composition of plasma lipids in expecting women
Eva Szabo 1, Eszter Gyorei 1, Tamas Decsi 1
1) Department of Paediatrics, University of Pecs, Pecs, Hungary

**Summary:**

Aim: To systematically review available data on fatty acid composition of plasma lipids in expecting women. Methods: Electronic literature search was performed in English (PubMed, Embase, Google Scholar) and in German (Springerlink) databases. The search expressions were as follows: pregnan* with (docosahexaenoic or arachidonic) limits: clinical trial and human. Results: We found 20 relevant articles. Most of the studies published fatty acid composition of total plasma or total erythrocyte membrane lipids, or plasma phospholipids. Data were divided into three groups: 2nd and 3rd trimester and delivery. Values of n-3 and n-6 polyunsaturated fatty acids changed in a narrower range in plasma phospholipids than in total plasma lipids (table). The data found in the literature indicate that the values of arachidonic acid and docosahexaenoic acid do not change extensively during pregnancy. Table: Fatty acid composition of total plasma lipids (TP) and plasma phospholipids (PL) in expecting women. Data are means (95% confidence intervals) (n = number of studies included) Conclusions: 1. Fatty acid composition of plasma phospholipids may better reflect the fatty acid status of the expecting women than that of total plasma lipids. 2. The results of this systematic review may be used as reference values in fatty acid supplementation studies in expecting mothers.

Title: Oxidative Stress, Brachial Endothelial Function and Carotid Intima-Media Thickness in Children With High Plasmatic Homocysteine Levels

Fabiola I Souza 1, Roseli O Sarni 2, Vania Almeida 2, Fernando L Fonseca 1, Sonia Hix 1, Robson Miranda 1
1) FMABC, Santo Andre, Brazil 2) Unifesp, Sao Paulo, Brazil

**Summary:**

Objective: To evaluate endothelium dependent brachial artery flow (FMD), carotid intima media thickening (IMT) and oxidative stress in children with high plasmatic homocysteine (Hcy) levels. Methods: Cross-sectional and controlled study was performed with 64 children (median age 8.9 years). A group of 33 children with high-Hcy-levels (> 7.5 µmol/L) was compared with other of 31 children with low-Hcy-levels (< 4.0 µmol/L). We evaluated: nutritional status (z-score body mass index - ZBMI); lipid profile (LDL-c, HDL-c and triglycerides); vitamin B6; vitamin B12; acid folic; reduced (GSH) and oxidized (GSSG) glutathione (HPLC electrochemical detection); brachial FMD (induced by inflation of a pneumatic tourniquet placed around the forearm to a pressure of 250 mm Hg for 5 minutes, the measurements was obtained in 30, 60 and 90 seconds) and carotid left IMT (average of 3 measurements) by ultrasound. Results: No statistically significant differences between the groups (high and low Hcy) was found for lipid profile, GSH, GSSG, GSH/GSSH relation, brachial FMD (30 and 60 seconds) and carotid left IMT (average of 3 measurements) by ultrasound. Results: No statistically significant differences between the groups (high and low Hcy) was found for lipid profile, GSH, GSSG, GSH/GSSH relation, brachial FMD (30 and 60 seconds) and carotid left IMT. There was statistically significant differences between groups high-Hcy and low-Hcy for ZBMI (ZBMI 0,72 kg/m²vs -0,06 kg/m²; p = 0.002) and the brachial FMD in 90 seconds (0,03 mm vs 0,02 mm; p=0.013) Conclusions: There was no association between high plasmatic Hcy levels with endothelium dependent brachial artery flow, except in 90 seconds; carotid intima media thickening and oxidative stress; however, an association was observed with ZIMC. The absence of association might be due to the age of the children. Follow up studies may show in future if young children with higher Hcy will be a higher cardiovascular risk.

<table>
<thead>
<tr>
<th>Days of life</th>
<th>Systolic velocity peak pr prandial</th>
<th>Systolic velocity peak post prandial</th>
<th>End diastolic velocity pr prandial</th>
<th>End diastolic velocity post prandial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>60,51 +/- 22,24 59.6 +/ -24,14</td>
<td>18.85 +/- 6,09 20,63 +/ -6.89</td>
<td>14th</td>
<td>95.33 +/- 18,11 121,95 +/- 24,18 22,02 +/- 8,50 29,02 +/- 10,05</td>
</tr>
<tr>
<td>14th</td>
<td>96,96 +/- 12,18 126,07 +/- 18,17 22,24 +/- 8,02 32,02 +/- 8,45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28th</td>
<td>58,12 +/- 9,78 96,12 +/- 8,98 12,05 +/- 5,12 21,15 +/- 3,43</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Title: Oxidative Stress, Brachial Endothelial Function and Carotid Intima-Media Thickness in Children With High Plasmatic Homocysteine Levels

Fabiola I Souza 1, Roseli O Sarni 2, Vania Almeida 2, Fernando L Fonseca 1, Sonia Hix 1, Robson Miranda 1
1) FMABC, Santo Andre, Brazil 2) Unifesp, Sao Paulo, Brazil

**Summary:**

Objective: To evaluate endothelium dependent brachial artery flow (FMD), carotid intima media thickening (IMT) and oxidative stress in children with high plasmatic homocysteine (Hcy) levels. Methods: Cross-sectional and controlled study was performed with 64 children (median age 8.9 years). A group of 33 children with high-Hcy-levels (> 7.5 µmol/L) was compared with other of 31 children with low-Hcy-levels (< 4.0 µmol/L). We evaluated: nutritional status (z-score body mass index - ZBMI); lipid profile (LDL-c, HDL-c and triglycerides); vitamin B6; vitamin B12; acid folic; reduced (GSH) and oxidized (GSSG) glutathione (HPLC electrochemical detection); brachial FMD (induced by inflation of a pneumatic tourniquet placed around the forearm to a pressure of 250 mm Hg for 5 minutes, the measurements was obtained in 30, 60 and 90 seconds) and carotid left IMT (average of 3 measurements) by ultrasound. Results: No statistically significant differences between the groups (high and low Hcy) was found for lipid profile, GSH, GSSG, GSH/GSSH relation, brachial FMD (30 and 60 seconds) and carotid left IMT. There was statistically significant differences between groups high-Hcy and low-Hcy for ZBMI (ZBMI 0,72 kg/m²vs -0,06 kg/m²; p = 0.002) and the brachial FMD in 90 seconds (0,03 mm vs 0,02 mm; p=0.013) Conclusions: There was no association between high plasmatic Hcy levels with endothelium dependent brachial artery flow, except in 90 seconds; carotid intima media thickening and oxidative stress; however, an association was observed with ZIMC. The absence of association might be due to the age of the children. Follow up studies may show in future if young children with higher Hcy will be a higher cardiovascular risk.
Title: EVALUATION AND FOLLOW-UP OF THE NUTRITIONAL STATUS OF CHILDREN HOSPITALIZED IN A GENERAL PEDIATRIC UNIT ON THE OUTSKIRTS OF THE CITY OF SÃO PAULO

Maria Teresa Bechere Fernandes 1, Alexandre Archanjo Ferraro 2, Ramiro Anthero de Azevedo 1, Ulysses Fagundes Neto 1
1) UNIFESP, São Paulo, Brasil 2) USP, São Paulo, Brasil

Summary:
Introduction: Hospital-acquired malnutrition is a common problem in pediatric patients, and is related to the prior nutritional status of the child and the severity of the disease. Early nutritional intervention by a multi-professional nutritional therapy team is recommended. Objectives: To evaluate the nutritional status of hospitalized children upon admittance and throughout their stay in a general pediatric unit. Methodology: Data were collected on pediatric hospitalization (n= 67) from March and April of 2006. The variables chosen for nutritional evaluation were as follows: date of birth, date of admittance, sex, diagnosis, weight upon admittance, weight upon discharge and nutritional risk score (applied by a nurse in the first 48 hours of hospitalization). The diagnosis of malnutrition was determined using Gomez criteria for children under three years of age. Results: Some degree of malnutrition was detected in 43% of children under three upon admittance. Of all the children evaluated, 46% were under 2 years of age, 61% were male and 80.6% remained up to 14 days in the hospital. The most frequent diagnosis was pneumonia (34%) followed by diarrhea (11%). During hospitalization 51% of the children gained up to 1 kg. This was observed in both children at low nutritional risk as well as those considered at high risk for hospital-acquired malnutrition. Linear regression analysis showed an association between longer hospital stay and no weight gain, r²= 0.11 (p= 0.005); in the same analysis weight gain during hospitalization showed no association with the child's weight upon admittance, r²= 0.01 (p= 0.3). Conclusions: Most of the children hospitalized in the Pediatric Unit were infants, male, and diagnosed with malnutrition upon admittance. The most frequent diagnosis was pneumonia and resolution of cases required up to 14 days of hospitalization for 80.6% of patients, showing the severity of the cases. Weight gain during hospitalization was found in 51% of the cases and this weight gain was not related to the initial nutritional status, revealing that early nutritional intervention together with improved treatment are decisive factors for reducing hospital-acquired malnutrition.

Title: EFFECT OF ANIMAL PROTEINS ON HEME-IRON BIOAVAILABILITY

Pizarro F 1, Olivares M 1, Weinborn V 1, Arredondo M 1, Hertrampf E 1
1) INTA-Universidad de Chile, Santiago, Chile

Summary:
Iron deficiency is the most common single nutrient disorder in the world and infants are at particular risk due to their rapid growth and limited dietary sources of iron. It has been demonstrated that the bioavailability of dietary iron is much more important to iron nutrition than the amount of iron ingested and the composition of meals. One example is the notable difference between the absorption of heme-iron and non–heme iron. Heme-iron is principally found in meat as hemoglobin (Hb) or myoglobin. This form of iron is easily absorbed because it is not influenced by the many ligands present in the diet; furthermore, it is directly taken up into enterocytes by an absorption pathway different from that of non–heme iron. On the other hand, given that heme alone is less absorbed than hemoglobin globins appear to be crucial for heme iron absorption. The role of other proteins in heme-iron absorption is not fully understood. The aim of this work was to establish the role of collagen, casein, albumin and cow, chicken and fish meat on heme-iron bioavailability. Subjects and methods: Thirty healthy women (28-50 y old) were selected to participate in two iron absorption studies. Informed consent was obtained from all the volunteers prior to the absorption studies. In protocol A subjects received 0.5 mg of iron as heme intrinsically labeled with either 3 uCi 55Fe or 1 uCi 59Fe plus either 1.7 g of collagen, casein or albumin. In protocol B subjects received the same heme compounds plus either 150 g of cow, chicken or fish meat. Informed consent was obtained from all the volunteers prior to the absorption studies. In protocol A subjects received 0.5 mg of iron as heme intrinsically labeled with either 3 uCi 55Fe or 1 uCi 59Fe plus either 1.7 g of collagen, casein or albumin. In protocol B subjects received the same heme compounds plus either 150 g of cow, chicken or fish meat. Results: In study A heme-iron bioavailability for heme alone, heme plus collagen, heme plus casein and heme plus albumin was 9.8, 11.8, 12.9 and 11.1%, respectively (One way ANOVA for repeated measures, p<0.8, NS). In study B heme-iron bioavailability was significantly decreased when chicken meat or fish was added (One way ANOVA for repeated measures, post hoc Scheffé p<0.004), but no effect was found for the cow meat. Conclusion: Heme-iron bioavailability is not modified by some animal proteins or by cow meat. Nevertheless in presence of chicken meat or fish heme-iron bioavailability diminishes significantly. These results may have practical implications for dietary recommendations. Support: Fondecyt Grant 1061060

Title: EFFECT OF VEGETABLE PROTEINS ON HEME-IRON BIOAVAILABILITY

Weinborn V 1, Olvares M 1, Arredondo M 1, Hertrampf E 1, Pizarro F 1
1) INTA-Universidad de Chile, Santiago, Chile

**Summary:**
One of the most important problems in human nutrition are single-nutrient deficiencies and among these iron is the most relevant. Infants are at particular risk due to their rapid growth and limited dietary sources of iron. During the first years of life, this nutritional deficiency affects a child's cognitive development and in adults reduces productive ability. In pregnant women, iron deficiency has been associated with a greater risk of neonatal low birth weight, thus inducing the development of nutrition associated chronic diseases. Purpose: The aim of this work was to establish the role of zein (maize protein), gliadin (wheat protein), glutelin (rice protein) and soy, pea and lentil protein isolate on heme-iron bioavailability. Subjects and methods: Thirty healthy women (35-55 years old) were selected to participate in two iron absorption studies. An informed consent was obtained from all the volunteers prior to the absorption studies. In protocol A, subjects received 0.5 mg of iron as heme intrinsically labeled with either 3 uCi 55Fe or 1 uCi 59Fe plus either 1.7 g of zein, gliadin or glutelin. In protocol B subjects received the same heme compounds plus soy, pea or lentil isolate (equivalent to 1.7 g protein). Results: In study A heme-iron bioavailability for heme alone, heme plus zein, heme plus gliadin and heme plus glutelin was 6.2, 7.2, 7.5, and 5.9%, respectively. No significant differences were found between heme given alone and heme given with either of the vegetable proteins. In study B heme-iron bioavailability for heme alone, heme plus soy, heme plus pea and heme plus lentil was 11.0, 7.3, 8.1, and 9.1%, respectively (One way ANOVA for repeated measures, p<0.008, Sheffé post-hoc test: heme alone vs heme plus soy, p<0.02). Conclusion: Heme-iron bioavailability is not enhanced by some vegetal proteins or vegetal protein isolates. On the other hand, in presence of soy protein isolate, heme-iron bioavailability diminishes significantly. These results may have practical implications for dietary recommendations. Support: Fondecyt Grant 1061060

**Title:**
Iron absorption from fortified fresh cheese with ferrous gluconate stabilized with glycine (SFG)

Ricardo Weill 1, Fernando Pizzaro 2, José Bocci 3, Jean Michel Antoine 4, Marine Frerreux 4, Florence Noirt 4
1) Danone Argentine, Buenos Aires, Argentine 2) INTA-University of Chili, Santiago, Chili 3) University of Bueno Aires, Bueno Aires, Argentine 4) Danone Research Centre Daniel Carasso, Palaiseau, France

**Summary:**
Background: Iron deficiency in children leads to impaired physical work performance, irreversible developmental delays and cognitive impairment. The WHO estimated that up to half of the children in developing countries are estimated to be iron deficient. Food is a good way to increase iron intake and dairy products are part of the children diet. Thus, in order to reduce risk of children's iron deficiencies, new fresh cheese fortified with iron has been developed. Some experimental studies have demonstrated that calcium salts and dairy products could inhibit iron absorption. Iron was provided as (2,3mg Fe/90gr, as ferrous gluconate stabilized with glycine (SFG)), containing also calcium 240mg, zinc gluconate 2,3mg and vitamin D, 1,25µg per 90gr. There is a need to assess bioavailability of such compound in humans. Objective: The purpose of this study is to assess the iron bioavailability of an iron-fortified fresh cheese. Previous studies in animal showed promising results, mean iron incorporated into hemoglobin was 36.6±6.2% for SFG, whereas a value of 35.4±8.0% was obtained for ferrous sulfate. Therefore we studied the bioavailability of this novel iron fortification compound called SFG by means of the classical double-isotopic method using two different tracers: 55Fe and 59Fe. Method: Fifteen healthy adult men (21 to 45 years old) were selected to participate in this iron bioavailability study. All of them had normal iron stores (hemoglobin level >130g/L; free erythrocyte protophorphyrin <70ug/dl RBC, serum ferritin >15ug/L). ). Informed consent was obtained from all volunteers before this study began. The fresh cheese product was fortified with SFG intrinsically labeled with radioiron 55Fe and 59Fe. A ferrous ascorbate solution was used as reference dose. Iron bioavailability was determined in blood samples 14 days after administration of labelled test products following the method by Eakins and Brown. Results: Iron absorption from fortified fresh cheese with ferrous gluconate stabilized with glycine (SFG) was 15.5% after adjustment of the data to a level of 40% absorption from a reference dose of ferrous ascorbate. This compare favourably to the average bioavailability of iron SF171 in milk; 9,2%. Conclusion: The results of the present studies show that the new fresh cheese fortified with ferrous gluconate stabilized with glycine (SFG) is a good source of iron and can be include in the diet of iron deficient children. Key Words: Iron, cheese, Kids

**Title:**
Stimulation of intestinal growth and function by prebiotic feeding of suckling rats

Frida fåk 1, Elin Johansson 1, Siv Ahné 2, Göran Molin 2, Björn Weström 1
1) Department of Cell and Organsim Biology, Lund, Sweden 2) Department of Food Technology, Engineering and Nutrition, Lund, Sweden

**Summary:**
Objective. Postnatal development of the gastrointestinal (GI) tract in mammals is temporally regulated by the genetic program, but is influenced by
exogenous factors, such as the diet and gut microflora. The aim of the current study was to clarify the role of a selected dietary fibre on postnatal GI development, by studying the effects of a prebiotic oligofructose-enriched inulin preparation, Synergy1, on GI growth and function in a suckling rat model. Methods. Between 10 and 17 days of age, using the split-litter experimental design, suckling rat pups were daily gavaged with Synergy1 (2.0 mg/g b. wt), or the probiotic bacterium Lactobacillus plantarum 299v (Lp299v, 5.0 x 10⁶ CFU/g b. wt) together with Synergy1, while control pups only received tap water. Results. The prebiotic-treated pups showed a higher number of cecal lactobacilli and an increased growth of the small intestine, along with increased mucosal lactase activity as compared to the controls. Furthermore, prebiotic-treated pups had an increased proportion of adult-type (non-vacuolated) enterocytes in the distal small intestine as compared to the control pups. In the symbiotic group, the addition of Lp299v did not appear to enhance the effect of Synergy1. Conclusion. The prebiotic preparation modulated the composition and activities of the endogenous bacterial flora and had a stimulatory effect on the intestinal growth and function in young developing rats with no apparent side effects. Thus, prebiotics might be an easy and safe alternative to live, probiotic bacteria when microbial manipulations or stimulation of GI growth could be beneficial in young animals and humans.

**P0855**

**Title:**
“Non-alcoholic Fatty Liver Disease and Its Relationship with the Nutritional Status of Vitamin A in Individuals with Class III obesity”

Gabriela V Chaves 1, Silvia E Pereira 1, Carlos J Saboya 1, Carine Cardinelli 1, Daiane S de Souza 1, Andréa Ramalho 1
1) Micronutrients Research Group - Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

**Summary:**
Objective: To investigate vitamin A nutritional status in individuals with morbid obesity through a biochemical indicator, correlating these findings with NAFLD presence and its risk factors. Methods: The studied population was composed of 145 patients with morbid obesity (BMI ≥ 40 Kg/m²), with median age of 36.5 ± 11.7 years. Liver biopsy was performed in a subsample (n=40). Retinol, β-carotene serum levels and retinol liver store were assessed by HPLC. The cutoff values for serum retinol and β-carotene inadequacy were <1.05µmol/L and ≤ 40 µg/dL, respectively. Liver retinol levels were considered inadequate when ≤ 20mg/g. Insulin resistance (IR) was assessed through HOMA method. Biochemical parameters of liver enzymes, lipid profile and glycemia were analyzed. Anthropometric measurements were conducted. NAFLD diagnosis was performed through Magnetic Resonance. Results: NAFLD prevalence in the group was 71% considering the diagnosis for any of the two methods of image used. It was found an inadequacy of 11.3% and 41.7% of retinol and β-carotene serum levels, respectively, when NAFLD was present. A significant correlation of serum retinol with albumin liver and total bilirubin was found. As regards β-carotene, a positive correlation for HDL-c variable and a negative correlation for the HOMA-IR, weight and BMI variables were observed. There was a significant association between IR presence and retinol and β-carotene inadequacy. In the subsample that performed liver biopsy for NAFLD histological assessment, 100% had the disease diagnosis and only 20% presented retinol adequate levels. A significant relation was found between disease severity and retinol liver store inadequacy. Conclusion: It was observed a high inadequacy of retinol and basal β-carotene nutritional status in the sample, with a higher inadequacy in those with NAFLD, thus suggesting an increase in the utilization of vitamin A in this group related to the fight against the oxidative stress to what they are exposed to. The significant association between retinol and β-carotene with IR supports the hypothesis that vitamin A may have a protector effect on IR pathogenesis. The high prevalence of retinol liver store inadequacy in individuals with NAFLD and the increase of inadequacy prevalence with the aggravation of the disease stages confirm the relationship between the degree of fibrosis and decrease of retinol liver store in NAFLD.

**P0856**

**Title:**
ERYTROPOIETIN AND THE RECUPERATION OF THE VERY LOW BIRTHWEIGHT INFANTS

Gabriela Zaharie 1, Florin Stamatiian 1, Toader Zaharie 2, Nadia Schmidt 1, Gabriela Panga 1, Dan Ona 1
1) Neonatology Department, University of Medecine and Pharmacy Iuliu Hatieganu, Cluj-Napoca, Romania 2) Clinical County Hospital Octavian Fodor, Cluj-Napoca, Romania

**Summary:**
Objectives: The goal of our study is to evaluate the effect of exogenous EPO administration on growth in low birth weight infants during first 2 month of life. Material and method: Group of study is represented by 60 newborns from our Neonatology Department, of Clinical County Hospital of Cluj-Napoca, age of gestation under 30 weeks and/or weight under 1200 grams; also those with intrauterine growth restriction and gestational age 30-32 weeks. Newborns were divided in 2 groups, first group, newborns that benefited of erythropoietin treatment, and control group that benefited only of iron prophylactic treatment. EPO was administrated as NeoRecomon, doses of 750 UI/kg/week. EPO was administrated 6 weeks or up to a postconceptional age of 37 weeks. We associated iron doses of 5mg/kg/day; folic acid 2.5mg/day and vitamin E. Control group started iron treatment at 3 weeks postnatal age 6 mg/kg/day in association with folic acid and vitamin E. Children were weighted and measured at birth,
once a month, at 2 months and at 37 weeks postconceptional. As statistic program we used EPI6 and we consider significant p<0.05. Results: Weight gain referred to birth weight for EPO treatment group was 342.75 g first month; 682.77 g up to 2 months and 955.83 g up to 37 weeks postconceptional. Weight at 37 weeks was greater in EPO group 2085g±351.78 in comparison to control group 1896.00g±307.37, significant statistic p=0.05. Length in EPO group presented 2.13 cm increase first month and 4.84 cm by 37 weeks. In control group increase was of 1.38 cm first month and 4.61 cm by 37 weeks. The significant difference of length was verified by Mann-Whitney test, value obtained p=0.03. Rise of cranial perimeter in EPO group was 5.52 cm by 2 months and 6.01 cm by 37 weeks and for control group 5.28 cm by 2 months, 5.53 cm by 37 weeks. We haven't found any significant difference regard of cranial perimeter using nonparametric tests. Proteinemia determined at 1 month, 2 months and 37 weeks haven't revealed any significantly statistic difference. Conclusion: Weight and length of very low birth weight newborn are influence by EPO administration at 37 weeks postconceptional. Exogenous erythropoietin has no influence on cranial perimeter of very low birth weight newborn. Proteinemia is not a parameter in evaluation of exogenous erythropoietin action.

P0857

Title:
Nutritional status in children at admission an the intensive care unit: a mortality risk factor

Georgina Toussaint 1, Marcela Amarante 1, Hector Carrillo 1, Ursula Crabtree 1, Alberto Jarillo 1, Adela Libreros 1
1) Hosp Inf Mexico FG, Mexico, Mexico

Summary:
Introduction: Nutritional status at admission to intensive care units (ICU) has been identified as an important risk factor for morbidity. Objective: evaluate nutritional status of children admitted to the ICU and its relationship with mortality. Methodology: Retrospective study which included all patients admitted to the ICU between November 2002 and December 2005. Information of age, sex, condition at discharge (dead or alive), edema, length of stay (LS) and anthropometric assessment during the first 48hrs of admission was obtained from hospital files. Weight/stature index, stature/age index, %fat mass and %fat-free mass were obtained by standardized personal and equipment. Data were calculated using NCHS tables an interpreted by Waterlow and Obesity scale to assess nutritional status. Results: Information for 2116 patients was collected, 177 were eliminated for lack of data because patients clinical condition and 326 for missing data. 1613 patients ages of 0-20, were included in logistic analysis regression, (43.4% female). The significant variables obtained from the logistic analysis were: age (infants and adolescents p<0.056*), low %fat mass (p<0.037*), longer length of stay (p<0.001*), with edema (p< 0.002* OR 3.47) and obesity (p< 0.034* OR 3.33). Conclusion: obesity, edema and depletion of fat mass are associated with an increased risk of mortality at admission to pediatric ICU.

P0858

Title:
Supplementation for 3 months with Omega-3 Fatty Acids in Hipertrigliceridemic pediatric patients with overweight and obesity

Georgina Toussaint M 1, Sonia Mondragon S 1, Ana Gomez Pinal 1, Blanca E del Rio N 1, Isela Nuñez B 1, Eliseo Ruiz B 1
1) Hosp Inf Mexico FG, Mexico, Mexico

Summary:
Introduction: Secondary cardiovascular complications to dyslipidemias in overweight and obesity in children develop early. Objective: To assess the effect of supplementation for 3 consecutive months with eicosapentaenoic (EPA) and docosahexaenoic acid (DHA) on: Triglycerides (TGL), cholesterol (COL), high (HAD), low (LDL), and very low lipoproteins density (LVLD) in hypertriglyceridemic pediatric patients with overweight or obesity. Methodology: Clinical trial, randomized, double-blind, placebo-controlled, with inclusion criteria: 8-16 years old, overweight or obese and hypertriglyceridemia without another chronic disease, without weight control and consent: the experimental group (EG) received as a supplement daily for 3 months 918 mg of EPA and DHA 2024 mg (3.0 grams), placebo group (PG) received 3 grams daily for 3 months of soybean oil as placebo and control group (GG) received only Nutrition Therapy 3 months like the other two groups. In base line and third month was taken determination of lipids. Monthly took anthropometry and was given treatment by trained personnel and Nutrition standardized, surrendered capsules with a daily monitoring at home to evaluate side effects and adherence, as well as recommended exercise. The recommended energy was for age, height and sex least 20-25% (FAO / WHO, water doubly checked). Results: 50 patients were captured, of whom were lost 4 of the CG, 1 PG and 2 of EG in monitoring, completing 43 children: CG n=16, n=11 EG and n=16 PG; besides hypertriglyceridemia, total group presents 30.2% of hypercholesterolemia and 39.5% of hipoalphalipoproteynemia; 18.6% and 81.4% of overweight and obesity; without significant difference between the 3 groups. After 3 months, EG decreased significantly TGL 24.7%, p=0.001*, LVLD 20.8% p=0.05* and COL 5.9% p=0.018*, compared GC which decreased TGL 25.4% p=0.007*, no significant change in LVLD and COL, and PG which decreased TGL 11.7% p=ns, and no difference in LVLD and COL decreased 6.9% p=0.034*. Observed the 43 patients obtained 7% normal weight, 18.6% continued with overweight and 74.4% with obesity, without difference among the 3 groups. The applied was 95%, without side effects. Conclusion: children with hypertriglyceridemia, overweight and obesity, monitoring
applied to diet and supplementation for 3 months with EPA-DHA decrease plasma triglyceride in 25% and LVLD 20.8%. *The project is financed by federal grants (HIM/2006/025 Ssa 681) and Conacyt (SALUD-2006-C01-44397).

P0859

Title:
Clinical Features associated to Anaphylaxis in Cow’s Milk Allergic Pediatric Patients

Germana P Stefani 1, Flavia RR Kibrit 1, Juliana M Tanno 1, Ana Claudia Brandão 1, Ana Paula BM Castro 1, Cristina MA Jacob 1
1) Unidade de Alergia e Imunologia · Instituto da Criança – Hospital das Clínicas - Universidade de São Paulo, São Paulo, Brazil

Summary:
Objective: To describe the clinical features of anaphylaxis triggered by cow’s milk protein in allergic patients followed at a tertiary pediatric reference center. Methods: Retrospective review of 170 medical records of Cow’s Milk Allergy (CMA) patients regarding clinical manifestations related to anaphylaxis episodes, reported at the child’s admission. Anaphylaxis was considered the occurrence of reaction involving two or more organ systems simultaneously in patients with the diagnosis of CMA. The severity of the episodes was classified as proposed in 2007 by the EAACI position paper. Results: From 170 patients with CMA, 100 (58.8%) fulfilled criteria for anaphylaxis. Initial symptoms occurred in a mean of 119 days of life (median 120d, 1-600 days). 28/100 patients had mild anaphylaxis, 49/100 moderate reactions and 23/100 severe anaphylaxis. Skin was involved in 92% of cases: 24% in mild reactions, 46% in moderate and 22% in severe reactions; urticaria (60/92) and angioedema (51/92) more frequently. Nausea/emesis (55/78), mild lip swelling (29/78) and diarrhea (17/78) were the most frequent symptoms presented by the 78% patients with gastrointestinal tract commitment (27% in mild reactions, 38% in moderate and 13% in severe anaphylaxis). The respiratory tract was involved in 65% of patients (7% in mild reactions, 35% in moderate and 23% in severe cases). The central nervous system was affected in 14% of patients (8% of moderate and 6% in severe reactions) and only one patient had clearly described cardiovascular involvement. Conclusion: Considering the new proposed classification of anaphylaxis’ severity, this study demonstrates a high prevalence of this potentially life-threatening complication in cow’s milk allergic patients. Regarding the involvement of GI tract, this specific population presented more than twice the prevalence classically refereed in literature. Concerning the precocity of disease’s onset, physicians involved in the management of CMA patients should always be in alert for the occurrence of anaphylaxis, particularly with GI commitment.

P0860

Title:
Gastric emptying in anorexic adolescent girls measured with 13C-octanoic acid breath test.

M. KF Docx 1, S.Staelens 1, K.Verbeke 3, A.Simons 2, G.Veereman-Wauters 3
1) Department of Chronic Pediatric Diseases & Paediatric Gastroenterology and Nutrition Queen Paola Children Hospital, Antwerp, Belgium 2) Department of Children Psychiatry Queen Paola Children Hospital and University, Antwerp, Belgium 3) Laboratory for Digestion and Absorption University Hospital, Leuven, Belgium

Summary:
Patients with anorexia nervosa (AN) frequently complain of upper gastrointestinal symptoms including gastric fullness, bloating, belching, nausea and vomiting. Altered gastric emptying (GE), has been demonstrated with Technetium-99mTETA in 26 patients with AN ranging from 13-49 year (1). Aim: To examine the gastric emptying of a solid meal with a non-invasive technique 13C octanoic acid breath test. Patients and Methods: nine anorexic girls (age:14,25-16,29 year) (BMI:mean:15.45 kg/m²) who fulfilled the DSM-IV criteria for AN were evaluated at admission. The breath test was performed as prescribed previously (2):50µL 13C octanoic acid was mixed with 17 gr flour, 7 gr sugar, 1 egg white, 1 frozen egg yolk and 40 ml half-skimmed milk to prepare a pancake, baked with 5 gr. Margerine. Sugar (5gr.) was added for consumption. This testmeal accounted for 230 cal. and was ingested after a 6hr fast. Breath samples were collected in vacutainers: 2 basal breath samples prior to the testmeal and one sample were, every 15 minutes during 4 hrs. Thereafter breath analysis was performed using Isotope Rate Mass Spectrometry (IRMS). Gastric emptying time (T1/2) was calculated (min) and GE curves were generated (3). Results: Results were compared to previously obtained values for GE of the similar solid test meal in age matched healthy adolescent girls (2). Six patients had a T1/2 exceeding P95 and were classified as having a strongly delayed gastric emptying, in one patient, T1/2 exceeded P75 which was classified as delayed whereas two patients have a normal gastric emptying. Discussion: 13C octanoic acid GE studies with a solid test meal demonstrate delayed gastric emptying in AN adolescent girls. References: 1.Domstad PA, Shih WJ, Humphries L, DeLand FH, Degenis GA, Radionuclide gastric emptying studies in patients with anorexia nervosa. J Nucl Med. 1987 May;28(5):816-9. 2. M. Van Den Driesche. Study of Gastro-Intestinal Motility in Infants and Children Using 13C Breath Tests. 2001, Leuven University Press 3. Maes BD, Mys G, Geypens BJ, Evenepoel P, Goosens YF, Rutgeerts P. Gastric emptying flow curves separated from carbon-labeled octanoic acid breath test results. Am J Physiol. 1998 Jul;275(1 Pt 1):G169-75.

P0861
Title: SAFETY, TOLERANCE AND BIFIDOGENIC EFFECT OF PREBIOTIC SUPPLEMENTS IN INFANT FORMULA.

G. Veereman-Wauters 1, P. Assam 6, H. Van de Broek 2, K. Plaskie 4, F. Wesling 3, A. McCartney 5
1) Depts of Pediatric Gastroenterology & Nutrition, Queen Paola Hospital ZNA, Antwerp, Belgium 2) Neonatology, Middelheim Hospital ZNA, Antwerp, Belgium 3) Obstetrics, Middelheim Hospital ZNA, Antwerp, Belgium 4) Neonatology, University Hospital, Antwerp, Belgium 5) School of Food and Biosciences, University of Reading, Reading, UK 6) Center for Statistics, Hasselt University, Hasselt, Belgium

Summary
Prebiotics are selective substrates for beneficial colonic bacteria: galacto-oligosaccharides (GOS) and inulin-type fructans: oligofructose (DP2-9) & long-chain inulin (DP10-60) (FOS). We performed a prospective RDB 2-center study on tolerance and bifidogenic effect of prebiotic supplements in infant formula. Orafti® Synergy1 (SYN1) is a 50:50 combination of oligofructose and long-chain inulin. The study lasted 28 days and involved 81 healthy neonates enrolled before D5. IRB approval and informed consents were obtained. Subjects received either Orafti® Synergy1 0.4g/dl (SYN10.4g/dl), Orafti® Synergy1 0.8g/dl (SYN10.8g/dl), GOS:FOS 0.8g/dl (GOS:FOS) or a standard formula (Control). A breast feed group was reference. Following variables were recorded: weight (g); height (cm); food intake (ml/d); scores for stool frequency and consistency; crying, regurgitation & vomiting; adverse events. Stool samples for bacterial FISH analysis were obtained at D3/D14/D28. Non-parametric tests were used for statistical analysis. Weight, height & food intake increased significantly from D0 to D28 with no difference between groups. Stool frequency decreased significantly and similarly from wk1 to wk4 for all supplemented groups as opposed to the breastfed group. Stools remained soft for all supplemented groups. Control group had significantly harder stools at wk2 and wk4 compared to wk1 (p<0.001 & p=0.0279). Breastfed babies had more watery stools. Crying increased from wk1 to wk4 for all groups similarly but remained low. Regurgitation and vomiting scores were low and similar for all groups. FISH analysis: total number of bacteria increased over time for all supplemented groups (9.82, 9.73, 9.91 to 10.34, 10.38, 10.37 log10 cells/g; p=0.2298) but remained unchanged in the control group (9.86 to 10.16 log10 cells/g). There were no significant differences in numbers of lactobacilli, bacteroides and clostridia both within groups over time and between groups by days. Bifidobacteria increased significantly at D14 & D28 in the faeces from babies receiving formula supplemented with SYN1 0.8g/dl (D3:8.32/D14:9.49/D28:9.74 log10 cells/g; p=0.0134 & p=0.0043) and GOS:FOS (D3:8.45/D14:9.36/D28:9.88 log10 cells/g; p=0.0399 & p=0.0046). Thus, supplementation of infant formula with the studied prebiotics is well tolerated & safe as infants feed & thrive normally. Prebiotics soften stools. Orafti® Synergy1 0.8g/dl & GOS:FOS 0.8g/dl significantly increased faecal bifidobacteria after 2 wks.

P0862

Title: Efficacy and safety of an olive oil compared with soybean oil based lipid emulsion in very preterm (<28 weeks) infants- a randomised controlled trial

Girish Deshpande 1, Karen Simmer 2, Trevor Mori 3, Kevin Croft 3
1) King Edward Memorial Hospital for Women, Perth, Australia 2) University of Western Australia (UWA), Perth, Australia 3) School of Medicine and Pharmacology, UWA, Perth, Australia

Summary
Background: Soybean oil based lipid emulsions (SL) are rich (60%) in polyunsaturated fatty acids (PUFAs) which are associated with lipid peroxidation. The potential benefits of olive oil based (OL) lipid emulsions (olive and soybean oil 4:1) include a low (20%) content of PUFAs and a high concentration of antioxidant alpha-tocopherol.

Objective: Compare efficacy and safety of OL versus SL emulsion in preterm infants.

Methods: Preterm infants (23 to <28 weeks) were randomly allocated to one of the two study emulsions for 5 days with a standardised dose protocol. Investigators and outcome assessors were blinded to the treatments. Plasma F2-Isoprostanes, plasma and RBC fatty acids were measured at baseline and after 5 days. Safety was monitored by liver function tests. Isoprostanes were used as a marker of in vivo lipid peroxidation.

Results: 44/50 infants (OL: 23, SL: 21) completed study. Both emulsions were well tolerated with no significant adverse events. There was no significant difference in F2-isoprostane levels before and at the end of the study. Plasma and RBC showed significantly increased levels of C18:1n-9 and C18:2n-6 in the OL and SL groups, respectively, at the end of study. Arachidonic and docosahexaenoic acid levels were comparable between two groups despite the lower PUFA content of OL. OL group had significantly higher levels of PUFA intermediates C22:5n-6 and C18:4n-3, suggesting delta-6-desaturase enzyme inhibition in SL group. Fatty acid profile in OL group was more comparable to that reported in breast milk fed preterm infants.

Conclusion: OL emulsion is safe and well tolerated by preterm infants under 28 weeks’ gestation. Large trials are needed to evaluate potential benefits of OL emulsions in extremely preterm at risk for oxidative stress.

P0863

Title: Clinical manifestations of cow’s milk allergy in pediatric patients in the first month of life
Summary:
Objective: To describe early clinical manifestations from patients with cow’s milk allergy (CMA). Methods: descriptive study using retrospective data from patients followed at a pediatric reference center for food allergy. It was selected CMA patients that fulfilled the following criteria: clinical manifestations associated with cow’s milk (CM) ingestion, laboratory data confirming CMA (specific IgE for CM), and intestinal biopsy showing eosinophils infiltrations at intestinal mucosa (> 20 eosinophils by HPF) in patients with non IgE mediated symptoms. For diagnosis, besides all laboratory data, when possible a open challenge test was done to established the CMA diagnosis Results: twenty-one patients fulfilled the clinical and laboratory criteria for CMA and only one patient presented non IgE-mediated symptoms. Atopy parents antecedent was present in 11 patients (52%). Gastrointestinal manifestations were the most prevalent findings (85%), mainly emesis and diarrhea. Proctitis was detected in one patient that developed blood stools and the rectal biopsy revealed eosinophilic infiltration > than 20 eosinophils per HPF at lamina propria. Among the patients, 47% presented cutaneous symptoms including urticaria, angioedema and eritema. Only one patient presented anaphylaxis as an early symptom. Three patients presented wheezing after CM ingestion. Seven patients developed symptoms at nursery and all of them had received CM formula without hydrolysis process during this period. Conclusion: the authors point out the importance of adequate feeding orientation for patients with parental history of atopy, promoting breastfeeding with maternal CM restricted diet. In patients without breastfeeding availability, the choice of extensively hydrolyzed formula must be considered.

Title: GLUTEN-FREE DIET: FOOD SERVICE STAFF TRAINING AT A TERTIARY PAEDIATRIC HOSPITAL

Christiane Mileib Vasconcelos 1, Viviane Rodrigues Guerra 1, Adriana Servilha Gandolfo 1, Paola Dolce Cueva 1, Glaucio Hiromi Yonamine 1
1) Instituto da Criança do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (ICr-HCFMUSP), São Paulo, Brazil

Summary:
Objective: To train food service staff of the division of nutrition (DN) of ICr-HCFMUSP, on the preparation, assembly and distribution of gluten-free diets. Methods: An one-hour activity was prepared for training professionals (kitchen and attendants), divided into 2 phases: theoretical and group dynamics. At the theoretical phase, slides were designed with information about definitions and symptoms of the celiac disease, carefulness involved in the provision of specialized diets (label reading) and pictures of foods permitted and prohibited among those in the normal diet of the hospital, divided by meals (breakfast, snacks, lunch and dinner). In the group dynamics, the professionals mounted sample menus of gluten-free diets for breakfast and lunch with pictures. At the end of the training, participants received an illustrated folder to retain the information discussed. The evaluation of the training was conducted through a questionnaire. Results: Nineteen professionals of the DN participated of the training. It was noticed that knowledge of the professionals about the foods permitted and prohibited for the gluten-free diet is not based on technical information. During the assembly of menus, 100% of the participants of the training properly mounted them. The questionnaire demonstrated that 52% of the professionals rated the training as very good, 32% as good and 16% did not respond. No professional rated the training as regular, bad or very bad. Thirty-one percent reported having enjoyed most the explanation of the disease, 11% the slides of the presentation, 11% the group dynamics, 26% liked everything (presentation / explanation / group dynamics) and the remaining 21% liked to acquire new knowledge. No one affirmed not having liked the training. When questioned about acquiring new knowledge with the training, 94.7% answered affirmative and the other 5.3% reported that it was only a revision of previous knowledge. Conclusion: The training of food service staff was important to increase their knowledge regarding celiac disease and to emphasize their importance in the provision of a safe diet to the celiac patient.

Title: A seven-years cohort study of 188 home parenteral nutrition pediatric patients from a single center.

Virginie Colomb-Jung 1, Julie Salomon 1, Cécile Talbotec 1, Odile Corriol 1, Catherine Poisson 1, Olivier Goulet 1
1) University of Paris-Descartes; Hôpital Necker;Pediatric Gastroenterology, Hepatology and Nutrition; Reference Center for Rare digestive Diseases, Paris, France

Summary:
The aim of this study was to analyse the follow up and outcome of a large group of pediatric patients referred to our institution with intestinal failure (IF) requiring home parenteral nutrition (HPN). Population and Methods: the cohort includes 188 children (108 boys) 2-204 months old (mean
46 ± 60 months) at inclusion in the HPN programme between 01/01/2001 and 01/01/2008. The 188 children entered the programme 200 times, 12 having been enrolled two times. Underlying conditions causing IF included: short bowel syndrome (SBS; n=105; 53%), chronic intestinal pseudoobstruction syndrome (CIPOS; n=34; 17%), congenital enteropathy (CE; n=17; 9%), inflammatory bowel disease (IBD; n=11; 5%), immune deficiency (ID; n=12; 6%), others (n=21; 10%). PN was delivered 2 to 7 days per week over 10 to 18 hours per day. Results: HPN prevalence was of 64.2 ± 5.1 children per year with an annual incidence of 20.0 ± 9.3 new children. The mean percentage of time the children were readmitted (emergency or scheduled admission) was only 6.48 ± 0.98 of the total duration of HPN period. The main cause of hospital admission was hyperthermia (43%). The other cause were digestive symptoms or IF and/or PN reassessment. Hyperthermia was related to documented catheter related sepsis (CRS) in 47% of the cases. The mean annual incidence of CRS during the five years cohort follow up was 1.4 ± 0.25 CRS for pour 1000 HPN-days (ranges: 1.2 – 1.8). Cause of CRS were: staphylococcal (62%), staphylococcus aureus (19%), enterobacteria (15%), fungal (2%), other (2%). An increased incidence of CRS due to staphylococcus aureus and enterobacteria was observed between 2004 and 2006, but it fell in 2007. The mean duration of HPN and the outcome depend on the cause of IF. (table *: p<0.001; #: p<0.05) Conclusion: This cohort shows a great stability in the following parameters: patients turn over, number and causes of readmission, and CRS incidence. The changes in the bacteriological profile of CRS require further investigations for determining the related factors. Outcome of IF depends on the underlying diseases with ID having the worst prognosis. Intestinal transplantation remains limited due to a large number of SBS who are weaned from PN and a well tolerated HPN for most patients.

P0866

Title: FACTORS ASSOCIATED INITIATION OF BREASTFEEDING IN THE FIRST HOUR OF LIFE

TATIANA DE OLIVEIRA VIEIRA 1, CARLOS MAURICIO CARDEAL MENDES 1, GRACIETE OLIVEIRA VIEIRA 2, LUCIANA RODRIGUES SILVA 1
1) Federal University of Bahia , Salvador, Brazil 2) Feira de Santana State University, Feira de Santana, Brazil

Summary

Objective: To describe the characteristics of the sample according to the presence or absence of breastfeeding in the first hour of life, in Feira de Santana, Bahia. Methods: Cross sectional study was conducted linked to birth cohort of the 1315 mothers and children, based on data obtained after informed consent through interviews. The variables studied were breastfed in the first hour, child sex, birth weight, maternal age, parity, type of delivery, education and previous experience with breastfeeding. It was regarded as significant values <=5%. In the analysis used in the statistical package SPSS 9.0. The research had support from FAPESB (73/04) and was approved by the Research Ethics Committee of the UEFS, registered by the number 012/2003.

Results: 1315 women were interviewed. All children breastfed on the first day of life, 96.9% (1274), 45.6% (600) started breastfeeding in the first hour of life. In the analysis of the characteristics of the population, according to the presence or absence of breastfeeding in the first hour of life there was greater occurrence of this practice in women younger than 20 years (RR 1.23, p 0.00), vaginal deliveries ( RR 2.28, p 0.00) and less level education (RR 1.18, p 0.00). Parity, previous experience with breastfeeding, birth weight and sex were not association with initiation of breastfeeding in the first hour of life.

Conclusion: The breastfeeding in the first hour of life is still an insufficient practice in Feira de Santana. The results signal the need for actions to promote early initiation of breastfeeding as part of an integrated strategy to protect, promote and support breastfeeding.

P0867

Title: FACTORS ASSOCIATED TO THE LINEAR GROWTH IN CHILDREN UP TO 4 YEARS OF AGE IN FEIRA DE SANTANA, BAHIA, BRAZIL

Gilmar M Jesus 1, Mauricio C Mendes 2, Graciete O Vieira 1
1) Feira de Santana State University, Feira de Santana, Brazil 2) Federal University of Bahia, Salvador, Brazil

Summary

Objective: To describe the factors associated with linear growth in children under 4 years of age in Feira de Santana, Bahia, Brazil. Methodology: A cross-sectional study was conducted linked to birth cohort of infants (n = 790). The independent variables were related to the children’s characteristics, social and demographic factors, maternal reproductions aspects and the food intake by children younger than 4 months. The dependent variable was the nutritional status assessed by height-for-age (H/A), compared to the standard of Multicentre Growth Reference Study and obtained with the use of the Software ANTHRO. Normal cut points were established between -2 and +2-z score, relating to the population median reference. The height of the children was measured three times, with an anthropometer. The study was approved in the Committee of Ethics in Research/UEFS, registered by the number 096/2006. Results: 51.6% was male. The age of the children ranged from 22.9 to 45.8 months. The results showed prevalence of linear growth deficit of 4.9%. The premature birth (RR= 3.0, 95% CI:1.14 - 7.88), low birth weight (RR= 3.82, 95% CI:2.06 - 7.09), multipregnancy (RR = 1.9, 95% CI :1.00-3.6), the maternal age under twenty years old (RR= 2.79, 95% CI:1.49 - 5.23), inadequate prenatal (RR= 2.27, 95% CI:1.23 - 4.21) and mother work outside home (RR = 8.26, 95% CI:1.14 - 59. 63) were factors associated with lack linear growth in children under 4 years of age. Conclusion: The premature birth, low birth weight, multipregnancy, the maternal age under twenty years old, inadequate prenatal and
work outside were identified by the risk factors to lack linear growth in children under 4 years of age in Feira de Santana, Bahia, Brazil. In spite of malnutrition prevalence in young children was lower than in other studies of Bahia.

**P0869**

**Title:** LINEAR GROWTH IN CHILDREN UNDER TO 4 YEARS OLD OF FEIRA DE SANTANA, BAHIA AS TWO STANDARDS OF REFERENCE FOR GROWTH

Graciete O Vieira 1, Elízia S Castelão 1, Camilla C Martins 1, Tatiana O Vieira 2, Gilmar M Jesus 1, Maurício C Mendes 2

1) Feira de Santana State University , Feira de Santana, Brazil 2) Federal University of Bahia, Salvador, Brazil

**Summary:**
Objective: To evaluate the prevalence of linear growth in children under to 4 years old of Feira de Santana according to the standards of National Center for Health Statistics (NCHS) and the Multicentre Growth Reference Study (MGRS) /World Health Organization (WHO). Methodology: A cross-sectional study was conducted linked to birth cohort of 790 children in Feira de Santana, Bahia, Brazil. Nutritional status was evaluated by height-for-age (H/A), all calculations were done with ANTHRO Software and was compared to the standards of NCHS and MGRS/WHO. Normal cut points were established between -2 and +2-z score, relating to the population median reference. The height of the children was measured three times, with an anthropometer. The study was approved in the Committee of Ethics in Research /UEFS, registered by the number 096/2006. Results: The prevalence of failure linear growth was 2.8% according to the curve of NCHS and 4.9% at MGRS/WHO. Conclusions: Children nutrition condition showed more prevalence of failure linear growth when using the new WHO standards compared to the previous international reference. This result was according with WHO statements which the prevalence of lack of height in all age groups increase using the new reference of MGRS/WHO standards.

**P0870**

**Title:** OVERWEIGHT IN CHILDREN UNDER TO 4 YEARS OLD OF FEIRA DE SANTANA, BAHIA AS TWO STANDARDS OF REFERENCE FOR GROWTH

Graciete O Vieira 1, Camilla C Martins 1, Tatiana O Vieira 2, Gilmar M Jesus 1, Maurício C Mendes 2

1) Feira de Santana State University , Feira de Santana, Brazil 2) Federal University of Bahia, Salvador, Brazil

**Summary:**
Objective: To evaluate the prevalence of overweight in children under to 4 years old of Feira de Santana according to the standards of National Center for Health Statistics (NCHS) and the Multicentre Growth Reference Study (MGRS) /World Health Organization (WHO/2006). Methodology: A cross-sectional study was conducted nested in a cohort of infants of 790 children in Feira de Santana, Bahia, Brazil. The independent variables were related to the children`s characteristics, social and demographic factors, mothers reproductions aspects and the food intake by children younger than 4 months. The dependent variable was the nutritional status assessed by weight-for-age (W/A), compared to the standard of Multicentre Growth Reference Study and obtained with the use of the Software ANTHRO. Normal cut points were established between -2 and +2-z score, relating to the population median reference. The height of the children was measured with an anthropometer and weight with the digital scale. All measurements were performed three times. The study was approved in the Committee of Ethics in Research / UEFS, registered by the number 096/2006. Results: The prevalence of overweight was 6.7% with the use of NCHS and 11.8% with use of MGRS/WHO standards. Conclusion: the prevalence of overweight as measured by new standards growth reference increased among children in the study. The result found, therefore, is consistent with predictions of WHO (2006), regarding the trend of increase in the prevalence of overweight in the evaluation of growth and nutritional status of children breastfed, using the new reference of MGRS.

**P0871**

**Title:** Hyponatremia in fibrocystic infants diagnosed by neonatal screening

Graziela C M Schettino 1, Elizabet V Guimarães 2, Paulo A M Camargos 3, Kelly C L R Buzatti 4, Luis S M Barbosa 4

1) Mestranda pela Faculdade de Medicina da UFMG, Belo Horizonte, Brasil 2) Professora Adjunta do Departamento de Pediatria da Faculdade de Medicina da UFMG; Pesquisadora Associada ao NUPAD UFMG, Belo Horizonte, Brasil 3) Professor Titular do Departamento de Pediatria da Faculdade de Medicina da UFMG, Belo Horizonte, Brasil 4) Acadêmicos de Medicina da Faculdade de Medicina da UFMG, Belo Horizonte, Brasil

**Summary**
Objectives: to describe a patients population with cystic fibrosis (CF) diagnosed by neonatal screening in the state of Minas Gerais (Brasil) related
Objective: The aim of this study is to determine nutritional status of college students in Bursa city and its relations with socioeconomical level and educational status of the parents and nutritional preferences of the children.

Methods: A total of 210 children aged from 7 to 11 years from the rural community of Americaninhas, Minas Gerais, were randomly enrolled. Written informed consent was obtained individually. Parents were asked to fill out a questionnaire form including socioeconomical and educational status of the parents and nutritional preferences of the children. Date of birth, gender, weight, height, upper arm circumference and triceps skin fold measurements of each student were recorded. Measurements were done with an anthropometric measurement kit. Haemoglobin levels were measured by a hematocrit analyser. Children were classified according to the severity of their parasitic infection and nutritional status.

Results: Stool examination revealed a high prevalence of hookworm parasitism; 72.5%, with the majority of individuals harbouring low intensity infections (< 1,000 epg). High prevalence of Ascaris lumbricoides (71.4%) was also observed, mostly characterized by moderate to high intensity of infection (> 5000 epg). Linear regression analysis showed that, after controlling for age, gender and socio-economic status, moderate-to-high intensity of A. lumbricoides infection was significantly associated with stunting (p= 0.011), whereas low intensity of hookworm infection was significantly associated with low body mass (p= 0.046). Anemia was more prevalent on moderate-to-high hookworm-infected group (p= 0.02), but no differences were seen between mean haemoglobin levels in children infected by A. lumbricoides and hookworm. Conclusion: STHs are associated with malnutrition in endemic populations, with important differences between the effects of hookworm and A. lumbricoides infection on nutritional parameters. These associations may result in adverse consequences for children in terms of mortality, morbidity, growth and cognitive performance that eventually translate into reduced physical and work capacities in adulthood.
standardized equipment by experienced physicians. Gomez classification was used for the assessment of nutritional status of children. The statistical analysis of data was performed with SPSS® 13.0 for Windows. Results: The study included 700 students between 7-17 years old (60% boys, 40% girls). The overall incidence of malnutrition was 12.2% and 2.5% of the students were obese without a difference in genders. According to Gomez classification, the ratios of severe, moderate and mild malnutrition were 5.9%, 29.7%, and 50%, respectively. Mid arm muscle area and mid arm fat area were significantly different between obese and malnourished children. The assessment of questionnaire forms revealed the importance of high maternal education, diet rich in vegetables and breastfeeding more than 4 months on the children’s nutritional status. Conclusion: The results of our study revealed that the incidence of malnutrition has been decreasing when compared to similar studies done during the 1970s and the majority of malnourished children are mildly affected so this can be the reason of insignificance between the upper arm fat and muscle area measurements of malnourished and healthy children. Obesity, a major health problem of developed countries affecting 16% of children, was determined in only 2.5% of children in Bursa, not a current health problem but is thought to be during the next decades. Both obesity and malnutrition are seen commonly in low socioeconomical level and this may be related to the insufficient maternal education. Therefore, besides socioeconomic status, maternal education, which provides consciousness of health and nutrition, is the major factor affecting the children’s nutritional status.

P0874

Title:
First results of a randomised controlled double blind European multi-centre study with an infant formula supplemented with immunoactive prebiotics. Part II: Effect on atopic dermatitis in healthy infants in the first year of life

Günther Boehm 1
1) on behalf of European Immuno Programming Study Group, Multi-Centre, Europe

Summary:
Objective: The intestinal microbiota provides an important stimulus for the postnatal development of the immune system. Data in infants at risk for development of atopy demonstrate that neutral prebiotic oligosaccharides (OS) (short chain galacto-OS (scGOS) and long chain fructo-OS (lcFOS), ratio 9:1, IMMUNOFORTIS®) mimicking functionally the OS in breast milk, beneficially influence the incidence of atopic dermatitis (AD) when added to a formula based on hydrolysed cow’s milk protein (1). Recently, specific pectin-derived acidic OS (galacturonic acid) became available aiming to mimic the function of acidic OS in breast milk. In the present study a combination of the neutral and pectin-derived acidic OS (ratio 85:15, 8 g/L formula) added to an formula based on intact cow’s milk protein has been tested on the occurrence of AD during the first year of life in a population at low risk for developing atopy. Study population: In this randomised controlled double blind European multi-centre trial (7 centres in 5 countries), 1187 healthy term infants without family history of atopy were recruited (including a breastfed reference group). 1130 infants remained in the full analysis set for the intention-to-treat analysis (new prebiotic group: 414; control: 416, breastfeeding reference: 300). Methods: AD was diagnosed according to the criteria recommended by the European Task Force on Atopic Dermatitis. The statistical analysis included the Fisher exact test (two-sided) for comparison of cumulative incidences and the two-sided Mantel-Haenszel logrank test for analysis of first occurrence of AD. Results: The cumulative incidence of AD at 52 weeks was significantly lower in the new prebiotic group compared to the control group (23 = 5.6 % vs. 39 = 9.4 %; p = 0.0469) while in the range of breast fed infants (21 = 7.0 %). There was a significantly earlier occurrence of AD in the control group compared to the prebiotic group (p = 0.0411). Conclusion: The present study in infants with low risk confirms the previous findings in infants at risk for development of allergy (1). The data indicate an immune modulatory effect of the tested prebiotic mixture added to a formula with intact protein which suggests the opportunity for allergy prevention by specific prebiotics. This cohort will be followed to investigate the course of AD and the trends in development of other allergic manifestations after the first year of life. 1. Moro G; et al. Arch Dis Child 2006;91:F814-819

P0875

Title:
Nutritional status of hospitalized children

Andrea Horvath 1, Piotr Dziechciarz 1, Anna Chmielewska 1, Irena Kossak 1, Bernadeta Patro 1, Marek Ruszczyński 1, Monika Wenke 1
1) The Medical University of Warsaw, Warsaw, Warsaw, Poland

Summary:
Objective: Hospital malnutrition is a risk factor for an unfavorable outcome, prolonged hospital stay, increased costs, and delayed recovery. There is still limited data on the prevalence of malnutrition in pediatric hospital patients in a different countries. Aim: This study was performed to assess the prevalence of malnutrition in a series of unselected children admitted to a Polish pediatric teaching hospital and to evaluate the nutritional intake of these patients. Patients and methods: Nutritional status was evaluated on the basis of anthropometric indices (weight, height and midarm circumference) that were recorded in all of the hospitalized patients on one given day. Malnutrition was defined in three different ways: as BMI <3rd percentile for age, BMI z-score <-2, and midarm circumference <-5th percentile for age. In addition, each patient was asked to document her/his nutritional intake during one day. Results: The nutritional status was assessed in 96 patients. Sixteen percent of the patients were considered mal-
nourished based on a BMI <3rd percentile for age; 14% based on BMI z-score <-2 and 19% based on midarm circumference <5th percentile for age. Most of these patients had evidence of malnutrition on all three indices. Poor nutritional intake was shown in the majority of patients hospitalized due to severe pneumonia, or gastroenterocolitis as well as in postoperative patients. Conclusion: According to our findings, there is still a considerable proportion of hospitalized patients who are undernourished. A strategy for systematic screening of malnutrition in hospitalized patients should be developed and put into operation.

P0876

Title: THICKENED FOOD IN THE MANAGEMENT IF INFANTS WITH GASTROESOPHAGEAL REFLUX: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Piotr Dziechciarz 1, Andrea Horvath 1, Hania Szajewska 1
1) The Medical University of Warsaw, Warsaw, Poland

Summary:
BACKGROUND: In many countries, thickened foods are available for infants who spit up frequently. However, due to limited data on their clinical effectiveness, the ESPGHAN Committee on Nutrition in its 2002 commentary does not advice the use of thickening agents and infant diets containing thickening agents in healthy, thriving infants who spit up. AIM: To review and update the evidence for the effectiveness of thickened infant food in the management of gastroesophageal reflux (GER) in normally developed infants aged 1 mo to 1 year. METHODS: The MEDLINE, Cochrane Library, and reference lists of reviewed articles were systematically searched up to February 2008 for parallel and cross-over randomized controlled trials (RCT) on the use of thickened food in the management of GER. Cross-over trials were accepted if infants were exposed in random order to both treatment and control formula. RESULTS: 14 RCTs (728 participants) met the inclusion criteria. Compared with controls, higher proportion of infants fed thickened formula had no episodes of regurgitation (3 RCTs, 267 infants, relative risk, RR 1.2, 95% confidence interval, CI 1.0 to 1.4). The use of thickened formula was associated with a significant reduction in regurgitation episodes per day (6 RCTs, 467 infants, weighted mean difference, WMD -0.46, 95% CI -0.5 to -0.4), as well as with a significant reduction of the reflux index as measured by esophageal pH monitoring (3 RCTs, 196 infants, WMD -3.2% 95% CI -5 to -1.4). Infants fed thickened formula showed better weight gain than infants fed standard formula (3 RCTs, 209 infants, WMD 9 g/day 95%, CI 7 to 10). CONCLUSION: Our meta-analysis on efficacy of thickened food in the management of infants with GER revealed benefits that are statistically significant, but may be of questionable clinical significance.

P877

Title: Hospital-Based Malnutrition: Main Characteristics in the Juan Manuel Marquez Pediatric University Hospital, Havana, Cuba

Rafael Jimenez 1, Roberto A. Fumero 1, Rafael Dominguez 1, Sergio Santana 1
1) Juan Manuel Marquez Pediatric University Hospital, Havana, Cuba

Summary
The incidence of malnutrition in children admitted at Pediatric hospitals in third world countries remains high and some nutritional parameters such as weight gain, vitamin A levels, and iron sufficiency may be altered in approximately 79% of children at the time of admission to hospital. The aim of this study was to determine the nutritional status of the 162 children admitted in a tertiary level national pediatric hospital.

Methods: All children admitted during a two week period to the Juan Manuel Márquez Pediatric University Hospital were evaluated for nutritional status, as well as nutritional risk.

Results: At the time of admission, 28 (17.28%) of patients assessed had severe malnutrition (less than 3rd percentile weight to height; National Growth Charts); 27 (16.6%) were obese. Less than 15% had a nutritional assessment in the emergency room and fewer than 50% had a nutrition assessment during the first 48 hours following admission. More than 30% were at high nutritional risk as assessed by the amount of weight lost, quantitated intake with respect to expected intake (less than 50%) and the severity of the current disease.

Conclusion: Although the nutritional risk of children at the time of admission is high, the data suggest that there are not major differences from some pediatric centers in developed countries. Assessment of malnutrition in hospitalized children is an important factor in determining outcome and response to therapy. Better assessment, especially in the emergency room, may improve clinical outcomes by identifying children at risk for complications of malnutrition.

P0878

Title: SERUM LEVELS OF VITAMIN A AND ITS RELATIONSHIP TO ACUTE AND PERSISTENT DIARRHEA
Summary:
Aim: To determine if Vitamin A deficiency acts as a risk factor for persistent diarrhea and to correlate the serum level of Vitamin A with the duration, cause of diarrhea as well as other risk factors for persistent diarrhea. Materials and methods: 72 patients, less than one year old, were admitted to a tertiary care pediatric hospital. Patients were divided into 3 groups: Group I-- 25 controls; Group II--25 patients with acute diarrhea; and Group III--25 patients with persistent diarrhea. Determination of Vitamin A concentration in plasma was performed by the Carl-Price method. The serological status of Vitamin A was classified as normal, mild-moderate deficiency and severe deficiency. Results: Vitamin A deficiency is an important risk factor for persistent diarrhea. Conclusion: Children with chronic diarrhea may be deficient in Vitamin A. Effective interventions that prevent and control persistent diarrhea including fortification of food with Vitamin A and supplementation of Vitamin A to children with persistent diarrhea in Third World countries is recommended

P0879
Title: The prevalence of excess weight in children of public and private schools in Natal, Brazil
Hélcio S Maranhão 1, Anna Christina N G Barreto 1, Lana M P Brasil 1, Mauro Fisberg 2
1) Federal University of Rio Grande do Norte , Natal, Brazil 2) Federal University of São Paulo, São Paulo, Brazil

Summary
Aim: determine the prevalence of excess weight in preschoolers and schoolchildren in Natal, Brazil and analyze the variables involved, such as: sex, age, type of school (public or private) and city district. Methods: a cross-sectional study conducted in 25 public schools and day care centers and in 27 private schools in Natal, Brazil in 2003 and 2004. A total of 5648 children were analyzed, 3721 preschoolers (2 to 5 years old) and 1927 schoolchildren (6 to 10 years old). All children with BMI ≥ 85 percentile were considered having excess weight and those with BMI ≥ 95 percentile were considered having obesity. Results: the total prevalence of excess weight found was 28.9%, 13.0% of overweight and 15.1% obesity. The schoolchildren had higher percentages of excess weight (33.6%) (p < 0.01, RR = 1.27, CI 95% = 1.17-1.38) and of obesity (22.6%) (p < 0.01, RR = 1.82, CI 95% = 1.61-2.05) than those of preschoolers (26.5% and 12.4%, respectively). A higher prevalence of obesity was observed for boys (17.0%) than for girls (14.7%) (p = 0.02, RR = 1.15, CI 95% = 1.02-1.30). Excess weight was found in 18.2% of the public school students and in 39.3% of the private school students (p < 0.01, RR = 2.16, CI 95% = 1.97-2.37). The obesity percentages were 6.4% and 25.0%, respectively (p < 0.01, RR = 3.94, CI 95% = 3.37-4.60). The east+south districts, areas with the highest quality of life indexes, had higher percentages of excess weight (p < 0.01) and obesity (p ≤ 0.01). Conclusion: the prevalence of excess weight and obesity in preschoolers and schoolchildren in Natal is high, mainly in the private schools, showing the need for prevention and intervention programs in preschools/ elementary schools.

P0880
Title: Nutrition screening in children – the validation of a new tool
Helen McCarthy 1, Helene McNulty 1, Moira Dixon 2, Jill Eaton-Evans 1
1) University of Ulster, Coleraine, Northern Ireland 2) Central Manchester and Manchester Children’s University Hopsitals NHS Trust, Manchester, England

Summary
Objective: To demonstrate the validity of a new nutrition screening tool for use with children
Method: Full ethical approval was obtained from the Salford and Trafford Research Ethics Committee prior to undertaking this study. All children (aged 2–17 years) admitted to the study wards (two medical, two surgical) of a large paediatric centre in Manchester, UK, over a four week period were screened using a newly developed, nurse administered paediatric nutrition screening tool (NST). The NST consisted of three elements – clinical diagnosis, nutritional intake and anthropometric measures. Each element was scored and children with an overall score of 4 or more were considered at nutritional risk. Of those screened, a random sample (n=110) were further assessed for full nutritional status by a registered dietitian. The full nutritional assessment consisted of a face-to-face interview obtaining dietary and social information, anthropometric measurements and retrieval of medical information from case notes. Data were analysed using chi-square tests to compare groups within the sample and kappa statistics to compare agreement between the full nutritional assessment and NST.
Results: The majority of 110 participants were surgical admissions (57%), male (58%) and the mean age was 8.9 years (SD 4.5 years). Nutritional risk was identified in 24.5% of the sample using the NST, and in 27% of the sample by full nutritional assessment. Compared to the latter, the NST demonstrated 70% sensitivity and 92.5% specificity. Kappa was calculated as 0.645 (CI 0.481, 0.809).The incidence of nutritional risk was not significantly different between males and females (by either method), but was statistically higher (by both methods) in medical compared with surgical admission (X²=14.117, p<0.001; X²=12.721, p=0.008 respectively).
Conclusion: The results of this small validation suggest that this new nutrition risk screening tool is valid and reliable for the identification of children requiring further nutritional assessment and appropriate intervention. It demonstrates moderate to substantial agreement with a full nutritional assessment. Further investigation will focus on the malnutrition risk by different clinical conditions and clinical settings.

Financial disclosure: This work was supported, in part, by an unrestricted educational grant from Abbott Nutrition Ltd. UK.

Title: Infant’s iron deficiency risk profile: the male gender
Henedina Antunes 1
1) Gastroenterology, Hepatology and Nutrition Unit, Pediatric Department, S. Marcos Hospital, Braga, Portugal

Summary
Background: The results of previous studies on infants’ Iron Deficiency Anemia (IDA) revealed that most of those who suffered from Iron Deficiency (ID) were boys. The reason for this gender difference is unknown. Previous studies addressing this question are scarce. Objective: To uncover the answer for the following question: Why is ID more predominant in boys rather than in girls in the first year of life? Methods: In 201 infants at 9 months the weight at birth, at 9 months, months of breastfeeding were registered and blood count, iron, transferrin, and ferritin were determined. IDA’s definition: hemoglobin<110 g/l, ferritin<12 ng/ml and response to iron therapy. A multivariate analysis was performed with ferritin < 12 ng/ml as dependent variable and independently variables: months of breastfeeding, weight gain from birth to 9 months, and gender. The Ethical Committee of S. Marcos Hospital approved this study. Results: IDA (39, 19.4%), 24 (61.5%) were male and of the 162 infants without IDA, 50% were male (p=0.195). The medium (minimum-maximum) measurement of ferritin in male infants at 9 months was of 9.8 ng/ml (0.5-67.0 ng/ml) and in females infants 16.5 ng/ml (0.45-74.5 ng/ml) (p<0.001). The average (standard deviation) weight gain from birth to 9 months was of 5 863.3 g (855.4 g) in male infants and 5 556.9 g (1 054.3 g) in female infants (p=0.027). In multivariate analysis (odds ratio (OR); confidence intervals of 95%[CI]; p): male (OR: 3.3; CI [1.7;6.3]; p=0.001); more weight increase (OR: 1.6; CI [1.1;2.2]; p=0.016) and more number of months of breastfeeding (OR: 1.1; CI [0.98;1.2]; p=0.099) are independently and positively associated to ID. Conclusions: ID was significantly more frequent in male infants, but this difference was regardless of the weight. The male gender presented a higher risk factor, despite rapid growth and months of breastfeeding. In this study males have 3.3 times more risk of developing ID than girls, which implies that iron requirements in first year of life should be differentiated by gender. Clinical healthy infants’ ID risk profile included male gender, rapid growth, and more months of breastfeeding. This study received a scholarship from the Foment Commission for Investigation in Health Care, from the Health Ministry P.I. n° 87/07.

Title: Relation of waist-to-height ratio and BMI to cardiovascular disease risk factors in overweight children and adolescents
Henedina Antunes 1, Cristina Santos 2, Ana Ribeiro 1
1) Gastroenterology, Hepatology and Nutrition Unit, Pediatric Department, S. Marcos Hospital, Braga, Portugal 2) Biostatistics and Medical Informatics Dept, Faculty of Medicine, Porto University, Porto, Portugal

Summary
Background: Studies concluded that the waist-to-height ratio (W/H) is more strongly associated with cardiovascular disease risk factors (CVRF) than is the Body Mass Index (BMI) in adults and children. Objective: Assess the relationship between BMI and W/H with CVRF. Methods: Children and adolescents aged 1-17 years, with excess weight or obese were evaluated. We considered CVRF the triglycerides > 110mg/dl, the LDL cholesterol >110mg/dl, the HDL cholesterol - male <40 mg/dl, female <50 mg/dl, the fasting insulin >33 uUI/mL and the systolic and diastolic blood pressure (BP)>P95. We used the charts of Centers of Disease Control and Prevention for BP and BMI. A multivariate logistic regression was performed with ferritin < 12 ng/ml as dependent variable and independently variables: months of breastfeeding, weight gain from birth to 9 months, and gender. The Ethical Committee of S. Marcos Hospital approved this study. Results: At the first appointing, the population consisted of 667 patients (female: 53.7%) with obesity 91.5%, the mean (standard deviation) of age, BMI and W/H was 9.4 years (3.4 years), BMI, 26.4 (4.3) and 0.61 (0.06). The only CVRF associated significantly with W/H was systolic BP. There were 16 times greater risk (OR=16; p<0.001) have high systolic BP for each 0.01 cm increase in W/H. The increase in W/H is associated with high levels of triglycerides (p=0.029), fasting insulin (p=0.002) and low levels of LDL (p=0.004) and systolic BP (p<0.001). A univariate analysis showed that the increase in the waist circumference is a significant risk for high systolic BP (OR=1.022; p=0.004), high triglycerides (OR=1.022; p=0.018) and high fasting insulin (OR =1.055; p= 0.004) Conclusions: The increase in W/H is significantly associated with increased risk of high systolic BP. Comparison BMI with the W/H ratio showed no benefits from this index, since not clinical CVRF are associated with BMI but not with the W/P in this population. Keep up the interest of determining the waist circumference. W/H ratio is not the solution to the lack of tables of waist circumference in pediatrics.
P0883
Title: AMBULATORY FOLLOW UP OF SEVERE MALNOURISHED INFANTS AFTER HOSPITAL DISCHARGE
Ângela Mattos 1, Sandra Valois 1, Débora Ribeiro Melo 1, Fernanda Orrico 1, Roberto Rodrigues 1, Hugo da Costa-Ribeiro, Jr 1
1) Fima Lifshitz Research Center at Federal University of Bahia, Salvador, Bahia, Brazil

Summary
Objective: To evaluate the outpatient follow-up of severe malnourished children after hospital discharge. Methods: Cohort study conducted in infants aged 0 to 24 months assisted at the nutrition therapy outpatient clinical of the Fima Lifshitz Research Center, of the Edgard Santos University Hospital, at the Federal university of Bahia, Salvador, Bahia, Brasil, during January of 2005 until December of 2007. All children were admitted for severe malnutrition treatment and after discharge were sent for ambulatory follow-up. The follow-up protocol consisted in one visit per month during the first 6 months, one visit every other month during the following 6 months and a one visit every three months during the second follow-up year. Ambulatory discharge was considered when the infant achieved eutrophic status. Results: Out of a total of 68 infants, 61 patients were sent for ambulatory follow-up. Seven patients were transfered for other local hospitals for specific management. Only 24 (39%) patients attended the first pre-scheduled ambulatory visit. Of these total 7 (29%) patients never returned for other evaluations, 8 (30%) came just for one appointment and only one (4%) patient attended all appointment. The ambulatory visit, at any time during the 2 year follow up occurred in 54,1% (33) of the patients and only 3 (10%) patients had ambulatory discharge. Conclusion: Our data shows that, similarly to what is found in less complex pediatric services, even attending a nutrology reference center that provides a multi-professional assistance and an adequate infrastructure for the management of severe malnutrition the adherence of this special group of patients is very low. Regardless the unquestionable role of the limited social-economic status, the severe malnourished condition of these patients reflects the low investment, by the caregivers, on their children. This information, demands an urgent rediscussion of the currently strategies leading to the consolidation, at ambulatory basis, of the complete nutritional rehabilitation initiated during hospitalization. Otherwise we will be wasting all the investments and advances already achieved on the hospital nutritional management of these group of children.

P0884
Title: ENERGY EXPENDITURE IN CHILDREN WITH SEVERE MALNUTRITION
Sandra Valois 1, Ângela Mattos 1, Carolina de Godoy Almeida 1, Zenir Nogueira 1, Fima Lifshitz 1, Hugo da Costa-Ribeiro Jr 1
1) Fima Lifshitz Research Center at Federal University of Bahia, Salvador, Bahia, Brazil

Summary:
OBJECTIVES: The aim of this study was to know the total energy expenditure and their components of patients with severe malnutrition during the rehabilitation phase of the diseases and compare with energy expenditures of healthy infants METHODOLOGY: Ten hospitalized severe malnutrition infants and ten healthy infants of both sexes were studied. The determination of the total energy expenditure (EE), rest metabolic rate during (RMR), sleeping metabolic rate (SMR), respiratory quotient (RQ) and physical activities were made by the indirect calorimetry using the metabolic chambers (EMTAC). Both infants groups were studied for a 24 hour period in the metabolic chamber. The infants hospitalized with severe malnutrition hospitalized for the treatment were submitted a protocol of nutritional rehabilitation based on the WHO recommendations and measurement of energy expenditure and their components were made during the rehabilitation phase of the disease by the time those patients was receiving 150 Kcal/Kg of daily/weight, RESULTS: The mean of the EE was 101,29 _b 20,03 kcal/kg of daily/weight on malnourished infants, this value found was 23% greater then the energy expenditure on healthy infants (p = 0,021); relevant clinical differences and significant statistics also were found between components of total energy expenditure (RMR, MSR, RQ e PA). CONCLUSION: The data suggests that the offered of calories for recovering of severe malnourished infants suggested by the WHO appears to be excessive and this value could not be associated to physical activities but with building of fat free mass.

P0885
Title: Food Intake of Infants Assisted in the Fima Lifshitz Research Center at the Hospital Complex of the Federal University of Bahia, Salvador, Bahia, Brazil.
Ana Paula de Brito Aguiar 1, Camila Ribeiro de Avelar 1, Lissandra Amorim Santos 1, Manuella Amanda de Lima Dias 1, Hugo Costa-Ribeiro Júnior 1, Maria Efigênia de Queiroz Leite
1) Fima Lifshitz Research Center - Federal University of Bahia, Salvador, Brazil

Summary
OBJECTIVES: to describe the food intake profiles of infants assisted in the Research Center of the Nutrology Service and evaluate the adequacy of macro and micro nutrients intake of their diets. METHODS: Cross-sectional descriptive study, of infants assisted in the Research Center of the Nutrolgy Service, during Jan 2004 to Dec 2007. Secondary data were collected from anamnisses of 320 children less than twenty-four months of age such as age, weight height, anthropometric indices and habitual food intake. All questionnaires were typed in the software for diet calculation Nutri version 2.5 and the adequacy of food intake data were compared in relation to the “Dietary Reference Intakes” - DRI S (2002). All study data were typed in the statistical package EpiData version 3.1 and data analysis performed on the R version 2.6.2. Descriptive statistical were calculated of all study variables according to age groups. Kruskal-Walls analyses were applied for comparing all variables of interest followed by Bonferroni adjustment for multiple comparisons when necessary. RESULTS: The population was sub-divided in three age groups. 0 a 6 (31.25%); 6 a 12 (34.38%) e 12 a 24 months (34.38%). The median of percent of adequacy for the anthropometric indices height for age, weight for age, weight for height were 98.5% (IQR=8.73), 87.9% (IQR =23.9) and 91% (IQR =15.2). The medians of caloric intake according to age groups 0-6, 6-12 e 12-24 months were: 144 (IQR=124), 131.8 (IQR=98.4) and 121.7 (IQR =68.7) kcal/kg/day respectively. Proteins were 3.18 (IQR =4.05), 4.47 (IQR =3.8) e 4.99 (IQR =2.99) g/kg/ day. For CHO: 17.41 (IQR =23.4), 17.9 (IQR=15.8) and 17.3 (IQR=10.7) g/kg/day and for lipids: 5.99 (IQR=3.4), 3.89 (IQR=3.2) and 3.77 (IQR =2.52) g/kg/day. Regarding median iron intake, it was observed on the age groups 0-6, 6-12 and 12-24 months: 3.25 (IQR=6.1), 5.6 (IQR=5.9) and 7.1 (IQR=6.1) mg/day respectively. CONCLUSION: An energy intake highly above recommended was observed, not corresponding to the nutritional status. Food practices showed that diets were also based on food with low content of iron.

P0886

Title: NUTRITIONAL MANAGEMENT OF SEVERE MALNUTRITION HOSPITALIZED CHILDREN

Débora Melo Ribeiro 1, Sandra Valois 1, Ângela Mattos 1, Tereza C M Ribeiro 1, Carlos Mauricio C Mendes 1, Hugo da Costa-Ribeiro Jr 1

1) Fima Lifshitz Research Center at Federal University of Bahia, Salvador, Bahia, Brazil

Summary: Objective: Assess the impact of the nutritional therapy in severe malnutrition children. Methods: A prospective study was done to evaluate the management of severe malnourished children, from 0 to 24 months old admitted in the Fima Lifshitz Research Center, at Federal University of Bahia, Salvador, Bahia, Brazil, in the period of January-2005 until December-2007. The diagnosis of severe malnutrition was based in the weight-for-age indicator < 60%. This anthropometric indicator was not considered for children presenting kwashiorkor. The statistic analysis was made by the software EpiData version 3.1 and R version 2.6.2. RESULTS: Sixty-seven children were evaluated, 83.6% (56) had primary malnutrition, of these 64.3% (36) had marasmus, with mean weight-for-age of 50.1±8.4%, and 35.7% (20) had kwashiorkor; secondary malnutrition was found in 16.4% (11) patients at the admission time. The mean of age was 8.72±5.57 months old, 56.7% (38) were male and 43.3% (29) were female. The median hospitalization time of marasmic children was 12.5 (IQR=7.8) days and in the children with kwashiorkor was 21.0 (IQR=12.2) days. During the hospitalization, all children received 75kcal/kg/day and 1.5g/kg/day of protein in the first 2 days, then received 100kcal/kg/day and 2.5g/kg/day of protein for 3 days, later on they were progressed to 150kcal/kg/day and 3.5g/kg/day of protein. At the discharge, 56.7% (34) of the children still maintained with 150kcal/kg/day, 20.0% (12) were receiving 180kcal/kg/day and in 18.3% (11) was necessary to offer 200kcal/kg/day to target a satisfactory weight gain at discharge. With regard to the protein offer at discharge, 32.2% (19) were receiving 3.5g/kg/day, 52.5% (31) were receiving 3.5-4.5g/kg/day and 15.3% (9) were discharged with 4.5-5.5g/kg/day. The weight-for-age averaged percent at discharge was 52.7±9.2%. There was no death and 10% (07) of the children were transferred to an intensive treatment unit. Conclusion: Most of the evaluated children presented primary malnutrition (marasmus), it was found a reasonable number of children with kwashiorkor that stayed more time in the hospital. The nutritional management showed to be efficient in improving patients nutritional parameters in a short period of hospitalization.

P0887

Title: THE IMPORTANCE OF THE USE OF WEIGHT-FOR-AGE INDICATOR IN THE NUTRITIONAL DIAGNOSIS OF HOSPITALIZED CHILDREN WITH SEVERE MALNUTRITION.

Sandra Valois 1, Danile Leal 1, Mariana Pontes 1, Fernanda Coqueiro 1, Gabriela Cabral 1, Hugo da Costa-Ribeiro Jr 1

1) Fima Lifshitz Research Center at Federal University of Bahia, Salvador, Bahia, Brazil

Summary: Objectives: To evaluate the degree of agreement between the anthropometric indicators in the diagnosis of infants with severe malnutrition. Methodology: Cross-sectional study with severe malnourished children less than 24 months of age hospitalized in the Fima Lifshitz Research Center of the Hospital Complex at Federal University of Bahia, Brazil. During January 2005 to December 2007. The admisssional diagnosis of severe malnutrition was based on the indicator weight-for-age < 60%. The parameter for the nutritional diagnosis of severe malnutrition was also weight-for-height < 70%. Only children born at term and AGA were included. No children with kwashiorkor was included. The statistical analysis to evaluate the degree
alkaline phosphatase levels were normal. IgM titers for Cytomegalovirus, Epstein Barr virus and mycoplasma were negative. Antinuclear antibody
of admission. Initial lipase was 1202 units/liter (normal 0-190), maximum of 2635 on the 3rd day. Lipid profile, calcium, transaminases, bilirubin and
ness. Initial white blood cell count was 11,000/mm3. Amylase level on presentation was 82 units/liter (normal 20-150), maximum of 308 on 4th day
was 89 kg, height 160 cm and Body Mass Index of 35. She was afebrile and non-icteric. Her abdominal examination revealed generalized tender-
of abdominal pain and vomiting. There was no fever, jaundice or history of trauma. Her medications included orlistat 120 mg three times a day,
an adolescent female who was taking orlistat to reduce weight. Case Report A 12-year old African American female presented with one-week history
Orlistat is a lipase inhibitor for obesity management that acts by inhibiting the absorption of dietary fats. We present a case of acute pancreatitis in
Summary:
1) Children's Hospital of Michigan, Detroit, United States
Aakash Goyal 1, Shashi Sahai 1, Mohammad F El-Baba 1
AND OMS
NUTRITIONAL PROFILE ANALYSIS OF CHILDREN WITH COW'S MILK ALLERGY - COMPARING THE REFERENCES OF CDC / NCHS
Title:
P0889
P0890
Title:
P0889
WARFARIN PREVENTS SUDDEN-DEATH AND REDUCES MORTALITY IN PARENTERAL NUTRITION DEPENDENT CHILDREN
Inaki X Irazoqui 1, Paloma Pifarre 1, Rachel Orton 1, Joanne Brind 1, Venetia Horn 1, Susan Hill 1
1) Great Ormond Street Hospital, London, United Kingdom
Summary:
Rationale: Most deaths in our children dependent on intravenous feeding are sudden and of unknown cause. Undiagnosed pulmonary embolism (PE) could be an important cause of sudden death (SD) among these children. Anticoagulant therapy with warfarin in patients diagnosed with PE might therefore reduce SD incidence. Method: 62 children dependent on parenteral nutrition (PN) were reviewed from 1991-2007. Cumulative follow-up was 405.3 years (median 4; range 1.3 -17). Annual V/Q scans were performed. Children diagnosed with PE received warfarin (INR: 2-3R) whilst on PN. Outcome of children with and without warfarin treatment was analysed. Kaplan-Meier method was used to calculate survival; cumulative incidence procedure, to calculate probabilities of PE and SD; univariate analyses to identify prognostic factors using log-rank test. Influence of warfarin therapy on outcomes was studied in a time-dependent Cox model. Results: Underlying aetiology of intestinal failure was short gut in 35%, enteropathy in 39% and intestinal dysmotility in 26%. Thirty children (48%) are still on PN, 18 (29%) achieved intestinal sufficiency, 13 (21%) died whilst on PN and 1 underwent intestinal transplant. SD of unknown cause was recorded in most cases of death (38.5%), followed by septic events (31%), cirrhosis (23%) and lactic acidosis (8%). Twenty three children (37%) were diagnosed with pulmonary embolism and were started on warfarin. Two children developed new PE whilst on warfarin treatment. None of the children on warfarin therapy suffered from SD compared to 5 of 39 who were not on warfarin therapy (p=0.038). Actuarial survival from SD in the group treated with warfarin was 100% vs. 73% in the group not treated. Overall mortality was also reduced in the group treated with warfarin although without statistical significance (p=0.136). Actuarial survival after 5 years on PN was 90% in the group treated with warfarin vs. 73% in the non treated group; and 90% vs. 62% after 10 years on PN. Presence of anticoagulant therapy with warfarin in PN dependent children reduces mortality and dramatically reduces SD of unknown aetiology. Absence of SD events in patients diagnosed with PE and treated with warfarin suggests that most SD is due to undiagnosed pulmonary embolism. Anticoagulant therapy should be considered in every PN dependent child.
Summary:
Orlistat is a lipase inhibitor for obesity management that acts by inhibiting the absorption of dietary fats. We present a case of acute pancreatitis in
an adolescent female who was taking orlistat to reduce weight. Case Report A 12-year old African American female presented with one-week history of abdominal pain and vomiting. There was no fever, jaundice or history of trauma. Her medications included orlistat 120 mg three times a day, albuterol and multivitamins. She had been on orlistat for one month. Family history was remarkable for diabetes mellitus in the mother. Her weight was 89 kg, height 160 cm and Body Mass Index of 35. She was afebrile and non-icteric. Her abdominal examination revealed generalized tenderness. Initial white blood cell count was 11,000/mm3. Amylase level on presentation was 82 units/liter (normal 20-150), maximum of 308 on 4th day of admission. Initial lipase was 1202 units/liter (normal 0-190), maximum of 2635 on the 3rd day. Lipid profile, calcium, transaminases, bilirubin and alkaline phosphatase levels were normal. IgM titers for Cytomegalovirus, Epstein Barr virus and mycoplasma were negative. Antinuclear antibody
was negative. A computerized tomography of abdomen was consistent with acute pancreatitis of the body and tail of pancreas. There was no evidence of cholelithiasis. Diagnosis of drug induced pancreatitis secondary to orlistat was made by exclusion. Management was supportive and consisted of intravenous fluid therapy and pain management. The patient stayed in the hospital for 7 days because of continued pain and poor oral intake which improved through the course of hospitalization. Discussion Orlistat 120 mg is currently the only agent approved by the FDA for the management of obesity in adolescents. The major adverse effects are gastrointestinal such as fatty stool, fecal urgency and oily spotting. Systemic adverse effects are rare because of the lack of absorption. Placebo-controlled trials showed no increase in incidence of pancreatitis but there have been post marketing reports suggesting an association between orlistat and pancreatitis in adults. We found no case reports of orlistat associated pancreatitis in pediatric or adolescent age group. Conclusion Acute pancreatitis should be considered in adolescent patients taking orlistat who present with unexplained abdominal pain and/or vomiting.

P0891

Title: NUTRITIONAL RECOVERY, IN A PROGRAM OF CHILDHOOD FEEDING SUPPLEMENTATION

*Jane Laner Cardoso 1, Maria Marlene de Souza Pires 2, Carlos Eduardo Pinheiro 2, Silvia Modesto Nassar 2
1) Municipal Health Secretariat of Florianopolis, Florianopolis, Brazil 2) Federal University of Santa Catarina, Florianopolis, Brazil

Summary: Objective: To evaluate the nutritional recovering and associated factors in children less than 2 years old in a municipality program of childhood feeding supplementation; to recognize their demographic features and their families; to evaluate mother/child bond, mother’s mental health, morbidity, and Maternal Body Mass Index; to verify the association of these factors with the nutritional recovering. Method: The cohort study of four months in 86 children of 6 and 18 months with the weigh for the age below the percentile 10. The children that achieved percentile higher than 10 were considered recovered. Those with changes percentile higher than the initial were considered in recovering and those who the initial percentile have not changed or lowered were considered non-recovered. The Multiple Correspondence Analysis verified an association of the studied variables with nutritional recovering. Results: It was observed that 77,91% of the children were recovered, 22,09% were in-recovering. A good maternal bond happened in 30,23% of the cases; weak in 69,77% and 80% recovered. Anemia was presented in 46,51%, iron deficiency in 25,59%, respiratory infection in 76,74% and diarrhea in 36,05%. The Maternal Body Mass Index average was 23,45%; 10,47% mothers were underfed; 56,98% eutrophic and 32,55% overweight or obese. The demographic variables were used to characterize the sample. Conclusion: The nutritional recovering was 77,91%. There was significant statically association between low birthweight and group in nutritional recovering.

P0892

Title: Serum concentration of lipids and apolipoprotein B in newborns

Jane Oba 1, Artur F Delgado 2, Raul C Maranhao 1
1) Heart Institute of the Medical School (InCor-HCFMUSP), Sao Paulo, SP, Brazil 2) Intensive Care, Childrens Hospital of Hospital das Clinicas of Sao Paulo University (ICr-HCFMUSP), Sao Paulo, SP, Brazil

Summary: Objective: To determine the concentrations of serum lipids and apolipoprotein B (apo-B) in a population of normal full-term and preterm newborns in a city in Southern Brazil, and assess the impact of gestational age and birth weight on these values. Method: Two hundred and twelve newborns of both genders were studied, 142 of whom were full-term (>37 weeks of gestation) and 70 preterm (<37 weeks of gestation). According to their birth weights, the full-term and preterm newborns were classified as small for gestational age or appropriate for gestational age. Umbilical cord blood was collected for biochemical analysis. Results: The total cholesterol, LDL-C, HDL-C and apo-B values were higher in preterm newborns (79±34, 26±6, 45±15 and 36±14 mg/dL, respectively) than in full-term newborns (58±19, 20±10, 31±14 and 28±7 mg/dL, respectively; p < 0.0001). Inversely, triglyceride values were lower in preterm newborns (36±14 mg/dL) than in full-term newborns (43±25 mg/dL; p < 0.0018). Gender and size at birth did not have any impact on the values of total cholesterol and fractions, triglycerides, and apo-B. Conclusion: Plasma concentrations of lipids and apo-B in the population of newborns studied are similar to those in newborns from other countries and continents reported in medical literature and, as expected, are markedly lower than the values mentioned in literature for infants over two years of age. Fetal maturity has an impact on the concentration of lipids in newborns, but birth weight does not have any effect on these parameters.

P0893

Title: Transfer of lipids to high-density lipoprotein (HDL) in children, adolescents and young adults
Efficacy of cyproheptadine on weight gain in children with failure to thrive.

MATERNAL POSTNATAL DEPRESSION AND INFANT WEIGHT GAIN IN A LATINO COHORT

Summary:
Background: It is well established that the concentration of high-density lipoproteins cholesterol (HDL-C) is an inverse predictor of future atherosclerotic cardiovascular disease (CVD). The HDL-C function may be greatly dependent on lipid transfers and the plasma HDL-C level does not assess its functional properties. The relationship between transfer of lipids and atherogenesis are complex and yet unclear. It is possible that the shift of lipids to HDL may be altered by growth process. Objective: Our aim was study the effects of children’s growth upon the capacity of HDL-C receive cholesterol esters (CE), triglycerides (TG), phospholipids (PL) and free cholesterol (FC).

Design/Methods: We studied 30 children (8±2.3 yo), 23 adolescents (13.2 ±2.2) and 13 young (24 ±3.5) all normolipidemics, no obese, no diabetic, no hepatic, renal, metabolic, acute or chronic disease and relatives without CVD. An artificial nanoemulsion (LDE) was used as lipid donor to HDL. LDE labeled with 3H-TG and 14C-FC or 3H-CE and 14C-PL was incubated with plasma samples for 1h. After chemical precipitation, the supernatant containing HDL was counted for radioactivity. The PON1 activity was measured by adding paraaxon to serum. HDL size was measured by a laser-light scattering analysis. Results: Total cholesterol were higher in children and adolescents compared to young (137 ± 29, 133 ± 20 and 113 ±18 mg/dL, respectively). Others lipoproteins, glucose, apo A1, HDL-size and PON1 activity were similar among 3 groups. The transfer of FC to HDL was higher in young group when compared to adolescents (table 1). In another hand, PL transfer was smaller in young group when compared to another 2 groups. The transfer of TG was smaller in adolescent group when compared to child group, whereas CE transfer was similar between 3 groups analyzed. Conclusions: Considering that antiatherogenic functions of HDL involve transfer of lipids, these results could be relevant to establish these properties of HDL during the growth. LIPID TRANSFER (in % of total radioactivity) † p<0.01 when compared to adolescent group; ¶ p<0.05 when compared to child group; * p<0.001 when compared to child and adolescent groups ns: non significant Data were expressed as means ± S.D

P0894

Title: MATERNAL POSTNATAL DEPRESSION AND INFANT WEIGHT GAIN IN A LATINO COHORT

Janet M. Wojcicki 1, Kate Holbrook 1, Aaron Caughey 2, Robert H. Lustig 1, Ricardo Munoz 3, Melvin B. Heyman 1

1) Department of Pediatrics, University of California, San Francisco, San Francisco, CA, United States 2) Department of Obstetrics and Gynecology, University of California, San Francisco, San Francisco, CA, United States 3) Department of Psychiatry, University of California, San Francisco, San Francisco, CA, United States

Summary:
Objective: Young preschool age children are at risk for obesity. Maternal psychological factors play a major role in infant weight gain. Our objective was to evaluate the relationship between maternal postnatal depressive symptoms and weight gain in the first six months of life in a cohort of Latino infants. Methods: We conducted a prospective cohort study in 201 Latina mothers recruited during pregnancy and followed until their infants were 12 months of age. Mothers were evaluated for depressive symptoms prenatally and at 6 months postpartum. Infant weights and lengths were measured at birth, 6 and 12 months. Each infant’s intake at 4-6 weeks, 6 and 12 months postpartum was determined by 24-hr dietary recall and food frequency questions. Statistical significance was evaluated using chi-square tests and logistic regression models. Results: High depressive symptoms were found prenatally in 29% and postnatally in 18% and 14% of the women at 6 and 12 months respectively. At 4-6 weeks and 6 months postpar- tum, 87% and 63% of the mothers were breast-feeding (BF), respectively. At 6 months, 27% of the infants had a weight/length ≥85th%ile. Rapid infant weight gain, defined as a change in Z score >1.00, was documented in 42% of the infants. At 12 months, 29% of the infants had a weight/length ≥85th%ile and 21% had rapid infant weight gain. In logistic regression models, the risk of a weight/length ≥85th%ile at 6 months was reduced in women who had depressive symptoms (OR 0.34, 95%CI 0.11-1.03) although the results were not statistically significant. Similarly, the risk of being overweight at 12 months of age was associated with reduced maternal depressive symptoms (OR 0.17, 95%CI 0.02-1.31), but the results were not statistically significant. Maternal depressive symptoms were also associated with differences in infant feeding practices at 4-6 weeks, 6 months and 12 months of age. Mothers with depressive symptoms were more likely to supplement infants with other non-breast milk or formula liquids at 4-6 weeks (p=0.02) and feed infants soda (p=0.01) at 6 months and chips (p=0.02) and put other flavored syrups in milk at 12 months post-partum (p=0.02). Conclusions: Maternal depressive symptoms are associated with reduced infant overweight (weight/length ≥85%ile) at 6 and 12 months of age and differences in infant feeding practices before 12 months of age. Supported by grants from the CDHNF and the NIH (DK060617)

P0896

Title: Efficacy of cyproheptadine on weight gain in children with failure to thrive.
Summary:
Objective: Failure to thrive (FTT) is a significantly prolonged cessation of appropriate weight gain compared with recognized norms for age and gender. Cyproheptadine, a serotonin and histamine antagonist, has been reported as an effective appetite stimulant in populations with eating disorders, e.g. anorexia nervosa. Cyproheptadine is widely prescribed off-label for children with feeding difficulties and FTT. However, there is no published data describing the dosing, specific indications, or efficacy associated with the use of appetite stimulants in young children with chronic feeding disorders and FTT.

Methods: This retrospective study examined 301 outpatient records of children ages birth to 36 months (mean=19.22 months; SEM 9.61) diagnosed with feeding difficulties and FTT over the years 2006 to 2007. Participants (n=46, 26 males) were oral feeders without enteral feeding tubes who were prescribed cyproheptadine as an appetite stimulant. Baseline weights were obtained from visits prior to initiation of cyproheptadine therapy. Three additional clinic weights were obtained over a six-month period from each patient documented to be receiving cyproheptadine therapy.

Repeated measures t-tests were used to examine statistical differences between pre- and post-treatment z-scores. Results: Weight gain relative to age norms increased significantly by the first post-treatment visit (p<.0001) with a mean gain of 0.68 kilograms. However, individual variability in the response to cyproheptadine was noted. 37/46 (80%) children experienced gains in z-scores over time while nine patients lost standing relative to age norms (-0.34 z-score loss; SD=0.42) during the post-Rx period. The effectiveness of cyproheptadine for weight gain diminished by the second post-treatment visit (p=0.069).

Conclusions: Cyproheptadine appears to have significantly impacted weight gain in 80% of young children diagnosed with feeding difficulties and FTT. Increased weight gain following initiation of treatment was immediate but diminished over time. Comparisons of weight gain prior to and following initiation of cyproheptadine further supported a treatment effect. Blockade of serotonin and/or histamine receptors may increase hunger in a subpopulation of patients with feeding difficulties and FTT. A prospective study to optimize treatment dosing and duration of therapy with an appropriate comparison group is proposed.

Title:
Analysis of Height, Weight, Body Mass Index in Infants and children using data of 2005 Korean National Examination in Children and Adolescents

Jin Soo Moon 1, Chong Guk Lee 1, Jeong-Wan Seo 2, Joong-Myung Choi 3, Bong-Keun Choe 3
1) Department of Pediatrics, Inje University Ilsan Paik Hospital, Goyang, Korea 2) Department of Pediatrics, College of Medicine, Ewha Womans University, Seoul, Korea 3) Department of Preventive Medicine, School of Medicine, Kyunghee university, Seoul, Korea

Summary:
Objective: WHO have published new Growth Standards of children under 5 years since 2006, but these standards lacks the recent data of far-east Asian countries. This study is to provide recent information about the current status of infantile and childhood growth in this regions according to the feeding, with national cross-sectional surveyed data, named ‘2005 Korean National Examination in Children and Adolescents’. Methods: We compared data of Korean infants and children from birth to 60 months to WHO 2006 standards using STATA macro accessed by WHO website.

Height-for-age (HFA), weight-for-age (WFA), Body Mass Index-for-age (BMI) and weight-for-height (WFH) were compared according to the feeding status. Exclusively breastfed infants and cow’s milk-fed infants were also compared. Age groups are classified as 0-5, 6-11, 12-23, 24-35, 36-47 and 48-60 months. The association between being over +2SD in BMI and exclusively breastfeeding or gender was measured by Mantel-Haenszel method.

Results: In exclusively breastfed infants, proportions below -2SD in BMI and HFA were 0.9% and 2.2%. Proportions over +2SD in WFA and BMI were 5.0% and 4.9%. These proportions were more prominent in boys than girls, such as 1.1%, 2.5%, 5.8%, 5.7% versus 0.8%, 1.7%, 4.2%, 3.9%, respectively. In cow’s milk-fed infants, proportions below -2SD in WFA and HFA were 1.1% and 2.3%. Proportions over +2SD in WFA and BMI were 5.9% and 5.8%. These proportions were more prominent in boys than girls also in cow’s milk group, such as 1.2%, 2.3%, 6.7%, 6.6% versus 1.0%, 2.3%, 5.0%, 4.9%, respectively. The frequency of being over +2SD in BMI in exclusively breastfed infant and children were significantly lower than cow’s milk-fed group (odds ratio 0.82, 95% confidence interval 0.72 to 0.94). The odds ratio in boys compared with girls were 1.3 (1.2 to 1.5). Conclusion: Weight-for-age, height-for-age, weight-for-height and BMI-for-age in Korean infants and children under 60 months showed some differences compared with WHO Standards. These findings should be considered in the field with new WHO Standards.
P0898

Title:

Jin Soo Moon 1, Chong Guk Lee 1, Soon Young Lee 2, Chung-Mo Nam 3, Kyungwon Oh 4, Young Taek Kim 4
1) Dept. of Pediatrics, Inje University Ilsan Paik Hospital, Goyang, Korea 2) Dept. of Preventive Medicine & Public Health, Ajou University School of Medicine, Suwon, Korea 3) Dept. of Preventive Medicine, Yonsei University College of Medicine, Seoul, Korea 4) Division of Chronic Disease Surveillance, Korea Centers for Disease Control and Prevention, Seoul, Korea

Summary:
Objective: Since 1967, The Korean Pediatric Society and Korean Government have developed Korean Growth Standards every 10 years. Last version was published in 1998. During past 40 years, Korean Growth Standards were mainly descriptive charts without any systematic nor statistical standardization. With the global epidemic of obesity, many authorities such as World Health Organization (WHO) and United States’ Centers for Disease Control (CDC) have been changed their principles of growth charts to cope with the situations like ours. This presentation is to summarize and review the whole developmental process of new 2007 Korean Growth Charts with discussion. Methods: With the initiative of Division of Chronic Disease Surveillance in Korea Centers for Disease Control and Prevention, we have performed new national survey for the development of new Standards in 2005 and identified marked increase of childhood obesity and plateau of secular increment of final height in late adolescents. We have developed new Growth Standards via adapting several innovative methods, including standardization of all available raw data, which were acquired in 1997 and 2005 national survey and full application of LMS method. Results: We could get new standardized charts; weight-for-age, length/height-for-age, weight-for-height, head circumference-for-age and BMI-for-age. Other non-standardized charts based on 2005 survey data were also published; waist circumference-for-age, mid-arm circumference-for-age, chest circumference-for-age and skinfold-for-age. Clinical guideline was also developed. Conclusion: Developmental process and results of new Korean Growth Charts are comparable with other internationally well-known Growth Standards, WHO 2006 Growth Standards and CDC Growth Charts. 2007 Korean Growth Charts are relevant especially in Korea and Korean ethnic groups.

P0899

Title:
ADIPONECTIN RECEPTOR IS PRESENT IN HUMAN INTESTINE

Jiri Bronsky 1, Josef Zamecnik 2, Richard Prusa 3, Jiri Nevoral 1
1) Dept. of Pediatrics, University Hospital Motol, Prague, Czech Republic 2) Dept. of Pathology and Molecular Medicine, University Hospital Motol, Prague, Czech Republic 3) Dept. of Clinical Biochemistry and Pathobiochemistry, University Hospital Motol, Prague, Czech Republic

Summary:
Objective: Adiponectin is an important regulatory hormone that influences metabolism of fatty acids and increases insulin sensitivity. Low serum levels of adiponectin were described in patients with metabolic syndrome. Recently, adiponectin was identified in human breast milk. In the present study, we aimed at demonstrating the presence of type-1 adiponectin receptor (adipo-R1) in human intestinal mucosa by use of immunohistochemistry. Methods: We collected 21 bioptic specimens of intestinal mucosa from 14 subjects (6 females and 8 males aged 9 mo. - 47 yrs.) undergoing upper or lower endoscopic investigation of the gastrointestinal tract with normal macroscopic and histological findings. Bioptic samples were taken from duodenum (n=6), terminal ileum (n=7) and colon (n=8). Immunohistochemistry using immunoperoxidase method with antibody against adipo-R1 (Phoenix Pharmaceuticals) was performed on sections of paraffin embedded tissue. Skeletal muscle served as positive control. Results: In all the samples, adipo-R1 was detected in the mucosa of both the small and large intestine. The receptor was localized intracytoplasmatically, mainly adjacent to the internal surface of the cell membrane. The positivity was observed in enterocytes and colonocytes as well as in lymphocytes in the submucosa and in the smooth muscle of the intestinal wall. Conclusion: This study demonstrated for the first time the presence of adiponectin present in human breast milk may participate through the type-1 receptor in nutritional programming of newborns. Supported by research grants IGA MZ NR/8310-5, NR/9079-3 and VZ MZO 00000064203.

P0900

Title:
Feeding to treat newly diagnosed paediatric crohn’s disease a single blind randomised control trial. Nasogastric tubes may improve compliance and effectiveness.
Summary:

Introduction: We compared our existing treatment elemental formula (EF) (Emsogen®, SHS International) with a novel polymeric formula (PF) (Ali-calm®, SHS International). Parameters measured were: oral and nasogastric tube (NGT) feeding, paediatric Crohn’s disease activity index (PCDAI) and weight (Wt). Methods: Children, aged 5-16 yrs with newly diagnosed small (SB) +/- large bowel (LB) Crohn’s disease. Diagnosis was by endoscopy +/- barium meal and follow through and PCDAI ≥11. A NGT was inserted during the diagnostic endoscopy. Children were randomised to EF or PF. After commencing feeds via NGT they were given the option to take the feed either by NGT or orally for a total of 6 weeks. Changes in PCDAI, Wt, time to first relapse and treatment preference at first relapse were evaluated. Follow up was for two years. Results: 41 children were recruited EF = 20 (11M, 9F), PF = 21 (14M, 7F). Thirty four (83%) completed the 6 weeks treatment period EF =15 (7M, 8F), PF = 19 (13M, 6 F). Disease distribution was SB +LB disease, EF = 87% PF = 95% or SB disease only, EF=13% PF=5%. This study was carried out on an intention to treat basis and four children commenced oral prednisolone during the study period (1EF, 3PF). These children had PCDAI scores at entry in the upper quartile for this population (>42.5). Outcomes for those children in remission with feeds alone are shown in the table below. Discussion: Only two children chose to take all their feed orally (1PF, 1EF). There was no significant difference in remission rates between the two groups EF = 93%, PF = 79% (P=<0.05). Wt Z scores were significantly improved within each group (p =< 0.001). Time to first relapse was between 2 and 10 months, however 33 % (EF) and 38 % (PF) of children in this study had not relapsed by 2 years. Uptake of feed for future relapse did not differ between groups and overall 20/24 (83%) of children who relapsed re-commenced enteral feeds. Conclusion: This study has shown that in the treatment of paediatric Crohn’s, EF and PF have similar remission rates, weight gain, relapse rates and need for NGT feeding. Remission rates in this study were higher than many other reports within the literature. Good weight gain implies good adherence to the treatment and may be explained by our practice of using NGT’s as standard. In our unit this does not seem to inhibit re-uptake of feeds at future relapse.

P0901

Title:
EIGHT YEARS OF EXPERIENCE IN QUILOTHORAX IN THE CARDIO-INFANTIL FOUNDATION

Silvia Salazar 1 , José F Vera-Chamorro 2
1) Universidad Javeriana, Bogotá, Colombia 2) Pediatric Gastroenterology, Hepatology and Nutrition Unit. Fundación Cardio-Infantil. Universidad Javeriana. vera@cable.net.co, Bogotá, Colombia

Summary:
Objective: Describe the incidence, diagnosis etiology and management of quilothorax. Methods: A retrospective study was carried out of patients diagnosed with quilothorax between January 1998 and September 2005. The inclusion criteria were presence of > 3 of the following parameters: 1. Milky fluid, Triglicerides >110 mg /dl, a cellular recount >1000 cel/ml, A lymphocyte recount of 70 % or greater, Negative culture, Proteins >20 g/l or 4 mg / dl and Density > 1.012. Results: 3824 congenital cardiopathy surgeries were carried out. 24 patients were diagnosed with quilothorax: 17 (70.8%) were male; under one year of age: 14 (58.3%); between 1 and 5 years of age: 8 (33.3%) and 2 between 6 and 10 years of age. In 23 (95.8%) the etiology was posterior to cardiovascular surgery (incidence 0.6%) and in 1 (4.2%) the origin was congenital. The surgeries were: cavopulmonary derivation in 4 patients; Glenn and or pulmonary valvulotomy in 3; Fallot in 3; VSD close in 2; coartation of the aorta repair in 2; vascular ring correction in 2 and others in 7. The diagnosis was made between 8-20 days (x=15) posterior to surgery. The initial clinical manifestation was respiratory difficulty with pleural effusion in the Rx. Eighteen (75%) patients received conservative treatment with TPN and MCT without response received octreotide and surgical treatment which included: pleurodesis in 2 patients and ligation of the thoracic duct in 3. The congenital quilothorax received treatment with TPN, pleurodesis on 2 occasions and octreotide with good results. The quilothorax healed in between 5-72 (x=14.1) days. Two patients died due to different complications in quilothorax: due to gram negative sepsis. Conclusions: Quilothorax in the CIF has an incidence of 0.6 % (literature 0.9-1.9%). In 95, 8% of the patients, their etiology was posterior to cardiovascular surgery and must be suspected in the presence of respiratory difficulty and pleural effusion in the 15 post surgical days. Conservative treatment with drainage and nutritional management (TPN–MCT) was successful in 18 (75%). Five patients required early surgical management. Mortality was 8.3% (sepsis).

P0902

Title:
NUTRITIONAL RECOVERY IN CHILDREN WITH A FAILURE TO THRIVE AND RENAL TUBULAR ACIDOSIS (RTA).
Summary:
Objective: Clinical presentation and evaluation of the nutritional recovery in patients with RTA and failure to thrive posterior to the initiation of treatment. Methods: a retrospective study with prospective follow up was carried out. All the patients that were diagnosed with RTA between January 2003 and January 2006 (three years) were chosen for the study. The information was saved in a Microsoft Office Excel 2003 database. The variables were tabulated in the SPSS 12 program. The nutritional recovery was expressed as the point Z-score (Epinut: Epi-Info 6.0) of the weight (P) and height (T) for the age (E), upon carrying out the diagnosis and in the final medical evaluation being analyzed with the Pearson test. Results: 54 patients were evaluated; 35 (64.8%) were male; ages: 5 months and 13 years of age (X=37 months); follow up between 3-48 months. The causes for the consult were: failure to thrive (FT) in 37 (68.5%); recurrent vomiting in 32 (59.2%), infection of the urinary tract (IUT): 15 (27.8%); hydronephrosis: 11 (20.4%); vasico-ureteral reflux (VET):11 (20.4%); easy dehydration: 9(16.7%), hydroelectrolyte imbalance: 6 (11.1%) and hematuresis: 2 (3.7%). The types of RTA were: I in 44 (81.5%), type II: 2 (3.7%), type III: 2 (3.7%) and type IV in 6 (11.1%) patients; with the greatest incidence in the dystal. Creatinin levels were elevated in 30 (55.5%) patients. Treatment was initiated with bicarbonate in 35 (64.8%) and citrate in 19 (35.2%) patients. A significant difference was found in the Z score of P/E (p=0.049), but not for the Z score of T/E (p=0.143). There were no differences between the type of treatment and nutritional recovery (p=0.8). The patients that recovered Z-score P/E had a greater follow up period (p=0.02). Conclusions: RTA is a cause of FT and recurrent vomit, observing a nutritional recovery in the Z-score P/E (p=0.049) posterior to the start of treatment (bicarbonate or citrate). The greater the time of follow up, the greater was the recovery of weight (p=0.02).

P0903
Title: Isolation, identification and characterization of bifidobacteria from breast milk and transmission to the infant gut
Rocío Martín 1, Virginia Martín 1, Antonio Maldonado 1, Esther Jiménez 1, María L Marín 1, Juan M Rodríguez 1
1) Universidad Complutense, Madrid, Spain

Summary:
Objective: Recently, the presence of bifidobacterial DNA in breast milk has been reported. In this context, the objective of this study was the isolation, identification and characterization of bifidobacterial strains from this biological fluid, the analysis of the bifidobacterial population by molecular methods and the potential mother to child transmission of bifidobacteria through breastfeeding. Methods: Milk samples provided by 23 healthy women and feces samples from their respective infants were inoculated onto MRS agar plates supplemented with L-cysteine. The plates were incubated in anaerobiosis at 37ºC for up to 72 h. The colonies were submitted to Gram staining and microscope examination and those with a typical bifidobacterial shape were identified using the F6PPK and other biochemical tests, PCR sequencing of the 16S rDNA and/or tuf genes and also the AFLP technique. Parallel, and to assess the Bifidobacterium microbiota of breast milk, DNA isolated from the 23 samples was used as template for a Bifidobacterium genus-specific nested PCR assay and for a DGGE analysis of the PCR products. The different bands observed in the DGGE profiles were cloned and sequenced for identification. The bifidobacterial concentration in the breast milk samples was estimated as 16S rRNA gene copies/ml by real-time quantitative PCR (RT-Q-PCR). To elucidate if there was a mother-to-child transmission of bifidobacteria through breastfeeding, isolates from the same mother-infant pair were genotyped using RAPD and PFGE techniques. Results: Bifidobacteria were isolated from 12 milk and 20 infant feces samples. Most of the isolates belonged to the species B. breve, B. bifidum and B. longum (infantis), although other species were also isolated (B. adolescentis, B. dentium, B. angulatum, B. pseudocatenulatum). Identification of the isolates and PCR-DGGE analysis revealed that the bifidobacterial diversity in breast milk and infant feces was specific for each mother-infant pair. Bifidobacterial DNA was detected in 22 of the milk samples by RT-Q-PCR in a range between 40 and 10,000 copies per ml. The percentage of bifidobacteria in relation to the total bacteria content of milk was of up to 16%. RAPD and PFGE genotyping of the isolates indicated a mother-to-child transmission of bifidobacteria through breastfeeding. Conclusion: Human milk is a source of bifidobacteria to the infant gut. Similarly to the gut, the bifidobacterial profile of human milk is host-specific.

P0904
Title: BUDGET IMPACT OF MANAGING COW MILK ALLERGY IN THE UK
Julian F Guest 1, Eriksas Sladkevicius 1
1) Catalyst Health Economics Consultants, Northwood, UK

Summary:
Objective: To estimate the budget impact of current clinical practice for managing cow milk allergy (CMA) in the UK, from the perspective of the Na-
Selenium (Se) Status, LCP Status and Growth of Small for Gestational Age (SGA) Infants in Mexico City

Maria-Socorro Parra-Cabrera 1, Raúl Eguía-Liz 2, Kathryn Pramuk 3, Gerardo Mercado 4, Gerald Combs 5, M Thomas Clandinin 6
1) Instituto Nacional de Salud Publica, Cuernavaca, Mexico 2) Hospital Castelazo Ayala, Mexico City, Mexico 3) Wyeth Nutrition, Philadelphia, USA 4) Wyeth SA de CV, Mexico City, Mexico 5) Grand Forks Human Nutrition Research Center, USDA, Grand Forks, USA 6) University of Alberta, Edmonton, Canada

**Summary:**
Background: During last trimester infants rapidly accrete the long chain polyunsaturated (LCP) fatty acid DHA into the brain. There are limited data on DHA (docosohexaenoic acid) status of SGA infants. A prior study of human milk (HM) from 9 countries found the Se content of HM from Mexico to be among the lower values for Se content (Radzanowski). Objectives: To compare Se and LCP status with growth among SGA infants fed...
a standard (S) infant formula, an infant formula enriched with Se, AA+DHA (S+), or Human Milk. Methods: Prospective, parallel study, randomized
and masked for formula groups. Healthy SGA (<10% Wt for GA) infants enrolled < day 14 of life. Formula S+ was enriched with 14 mcg/ L sodium
selenite (14.9 mcg/L) and AA/ DHA at 0.35/ 0.2 % total fatty acids, Formula S contained 1.3 mcg/L innate Se. Blood samples collected at baseline
and 2 mo were analyzed for plasma Se, plasma glutathione peroxidase (GPx) activity, and phospholipid AA (arachidonic acid) and DHA. Growth was
measured monthly and followed to 6 months. Z scores were developed using the 2005 WHO Anthropometric software. Results: Groups were similar
for plasma Se at baseline. Selenium content of formulas influenced serum Se levels, however lack of a corresponding difference in GPx activity be-
tween formula groups suggests this enzyme may be subject to regulation by factors other than Se supply. Inclusion of 0.2% DHA in infant formula
achieved DHA plasma levels similar to infants fed HM. Growth improved from baseline to 6 mos in all feeding groups. Laboratory Results : (Table).
Statistical treatment of laboratory data: Analysis of covariance with baseline values and gender included as covariates. Superscripts identify statisti-
cal significance between feeding groups. Growth : Weight for Length Z scores were similar between feeding groups at baseline and at 6 months.
Statistical treatment of growth data included repeated measures analysis from 0-6 mos with baseline and gender included as covariates. Conclusion:
SGA Infants fed S+ formula attained plasma Se and DHA levels similar to infants fed HM.

P0907

Title:
Breast Milk Regulates Intestinal and Immune Development during Food Challenge in Rats Genetically Predisposed to Allergy

Katie L Tooley 1 , Randall H Grose 1 , Kerry Lynm 1 , Adrian Cummins 2 , Mark De Nichilo 3 , Irmeli A Penttila 1
1) Women’s and Children’s Health Research Institute, Women’s and Children’s Hospital, North Adelaide, Australia 2) The Queen Elizabeth Hospital, 
Woodville, Australia 3) TGR-Biosciences , Thebarton, Australia

Summary:
Introduction: Allergy arises due to a complex interaction between genetic predisposition and environmental factors. Early nutritional events, such as
formula feeding (contains the allergen α-lactoglobulin, BLG) have the potential to exacerbate the development of food allergy as they do not contain
immunoregulatory bioactives. Breast feeding has been suggested to protect against the development of allergy, however its effect on gut mucosal
regulation and development have not been fully defined. Objective: To investigate the early nutritional effects of formula feeding or breast feeding
on the intestinal mucosal system in the presence of a genetic predisposition to allergy. Methods: Allergy prone (Brown Norway) rat pups were allo-
cated groups (n=8): naturally suckled (NS), formula fed (FF; via cannulation) and naturally suckled supplemented with BLG (NS+BLG). Rats were sacri-
ficed at 10, 14, 18 and 21 days of age. At sacrifice serum and intestinal tissues were collected, ileal cytokines (IL-4, IL-10, TNFα and IFNγ) and systemic
serum IgE and rat mucosal mast cell protease II (RMCPII) profiles were measured Results: Formula fed pups had significantly reduced levels of IL-4,
IL-10, TNFα and IFNγ in the ileum compared to their NS and NS+BLG counterparts at 10 and 14 days of age (p<0.05). In contrast, NS+BLG challenged
pups had IL-4, IFNγ and TNFα at similar levels to those seen in unchallenged NS pups. IgE and RMCPII analyses revealed significantly elevated levels
in FF pups as early as day 14 compared to NS and NS+BLG pups (p<0.01), indicative of allergy development. NS+BLG group was not significantly dif-
frent compared to NS, indicating maternal milk regulates allergic immune responses. Conclusions: This study demonstrated that in early life breast
milk regulates intestinal mucosal and immune development in allergy prone rat pups. These results also highlight potential time-points for early
intervention to prevent sensitization to food antigens when there is a genetic predisposition toward allergy.

P0908

Title:
Casein increases circulating IGF-I and IGF-I/IGFBP-3 and whey increases fasting insulin in a seven-day supplementation study with Danish pre-pubertal boys

Camilla Hoppe 1 , Christian Moelgaard 1 , Allan Vaag 2 , Kim F Michaelsen 1
1) Dept Human Nutrition, Copenhagen, Denmark 2) Steno Diabetes Centre, Gentofte , Denmark

Summary:
Background: Milk increases both fasting insulin and insulin-like growth factor I (IGF-I), and thereby growth, in healthy prepubertal boys (Hoppe et al. 
Eur J Clin Nutr 2004 and 2005). It is, however, unknown which components in milk are responsible for milk’s growth stimulating effect. Objective: To
get closer to the identification of which components in milk stimulate growth, we have performed a study examining the effects of the two major
milk protein fractions, whey and casein, and milk minerals (Ca and P) on IGFs and glucose-insulin metabolism Methods: In a double-blinded, ran-
donised study with a two-by-two factorial design, 57 8-y-old boys received 1 of 4 milk-based drinks daily for 7 days; 1) whey, 2) whey plus milk-min-
erals, 3) casein, 4) casein plus milk-minerals. In addition, they were asked to eat their normal diet ad libitum, and were examined at baseline and
after intervention. The amounts of whey and casein were identical to the content in 1.5 L skim milk. The amounts of Ca and P were similar to 1.5 L
skim milk in the high mineral drinks, whereas the amounts of Ca and P were reduced in the low mineral drinks. Results: Serum IGF-I increased by 15% (P<0.0001), whereas there was no change in fasting insulin (P=0.36) in the casein group. In the whey group, fasting insulin increased by 21% (P=0.006), with no change in IGF-I (P=0.27). There were no independent effect of a high milk mineral intake on IGF-I and insulin, and no interactions between milk mineral groups (high, low) and milk protein groups (whey, casein). Conclusion: The main milk protein fractions exhibit important but different anabolic growth promoting effects by increasing either fasting insulin (whey) or IGF-I (casein) levels. Identifying the components in cow’s milk responsible for growth stimulation is important for designing milk based foods for nutritional rehabilitation in developing countries and clinical nutrition.

**P0909**

**Title:**

**INFLUENCE OF D-LACTATE PRODUCING PROBIOTIC STRAINS ON D-LACTATE LEVEL IN THE COLON**

Koen Venema; Annet JH Maathuis; Margaret H Dohnalek; TNO Quality of Life; Discovery Technology, Abbott Nutrition; The Netherlands; USA;

**Summary:**

Objective: To understand the impact of D-lactate producing probiotic strains on the amount of D-lactate present after a 72-hr dynamic, in vitro colonic fermentation. Methods: Two D-lactate producing *L. acidophilus* strains and two non-D lactate producing *Bifidobacterium lactis* probiotics, alone or in combination and with or without prebiotics (short or long chain inulin), were evaluated for the influence on D-lactate production over a 72-hr fermentation period in a dynamic in vitro model of the colon (TIM-2). A sample of predigested milk-based starter infant formula was combined with one of the test variables and introduced into the TIM-2 chamber containing a microbiota originating from feces of 2 to 4 mo old breastfed infants. Multiple doses of pre- and probiotics were evaluated to determine if dose impacted D-lactate level. A total of 14 variables were tested. Measurement of total cumulative lactate and of each isomeric form were made at the end of fermentation and compared to experiments with the predigested milk only (control without pre- or probiotics). Results: The control produced a total cumulative ratio of L to D-lactate of 1:1.16 (76 mmol:88 mmol) after 72-hr fermentation. Of the 14 variables, 8 variables produced less total cumulative lactate than the control (<164 mmol). Seven variables produced a greater amount of cumulative D-lactate than the control, with only 1 having a decreased ratio of L:D (<1:1.16). Individual strains of D-lactate-producing lactobacilli, even at 10E+09 CFU/ml, did not impact the cumulative total amount of lactate or proportion of D-lactate produced. The most significant impact on both the total amount of lactate produced and the proportion of L:D, was found with a combination of *L. acidophilus* + *B. lactis* at either a low (10E+04 CFU/ml) or higher (10E+07 CFU/ml) dose of each strain, together with 0.5 g/L oligofructose (lower level probiotic-205 mmol total lactate, 114 mmol D; higher level probiotic-198 mmol total, 111 mmol D). Conclusion: The presence of D-lactate-producing probiotic strains did not influence the proportion of D-lactate produced in the colon to the same extent as did a combination of D- and L-lactate producing strains. The largest increase in both proportion and amount of D-lactate was seen with the prebiotic-containing variables. These data suggest that some D-lactate producing strains of probiotics may not significantly impact the safety of healthy infants fed formula containing these strains.

**P0910**

**Title:**

**USE OF A DYNAMIC IN VITRO SYSTEM TO ASSESS THE ABILITY OF PROBIOTIC BACTERIA TO SURVIVE THE UPPER GI TRACT**

Koen Venema 1, Annet JH Maathuis 1, Margaret H Dohnalek 2
1) TNO Quality of Life, Zeist, The Netherlands; 2) Discovery Technology, Abbott Nutrition, Chicago, USA

**Summary:**

Objective: To use a dynamic, in vitro model to assess the ability of different probiotic strains, with or without a prebiotic, to survive transit thru the upper GI tract. Methods: The ESPGHAN Committee on Nutrition has established a recommendation that the dose of a probiotic be justified for use in infant formula (J Pediatric Gastroenterol Nutr 2004; 38: 365-374). We chose to use a validated, dynamic in vitro model of the stomach and small intestine (TIM-1), simulating GI tract conditions of 2-4 wk old infants, to assess survival in the upper GI tract of probiotic strains, with and without prebiotics. TIM-1 was given two 200 ml meals at 3 hr intervals. A meal consisted of infant formula containing approx 10E+06 CFU per ml of each probiotic strain; some variables also included a prebiotic. Ileum effluent was sampled hourly during a 6 hr experiment, and cumulative survival of the probiotics in time was determined. Variables were tested in duplicate. Results: Survival increased for lactobacilli and bifidobacterium strains when tested in combination vs separately (*L. acidophilus* (LA), 17.5%; *B. lactis* (BL), 35.9%; and LA + BL, 31.5% and 53.6%, respectively). For combinations of LA and BL from different suppliers, cumulative survival of probiotic strains could be high (LA 31.5% + BL 53.6%) or low (LA 4.5% + BL 31.5%). Supplier production practices had more influence on survival of probiotic combinations than did strain differences: BL from two suppliers in combination with a Lactobacillus varied in survival from 31.5% to 90.0%. For Lactobacillus strains, survival in the presence of a Bifidobacterium ranged from 4.5% to 38.1%. A prebiotic impacted survival of probiotic strains during passage thru the upper GI tract. FOS added to an infant formula that
contained a combination of LA and BL reduced survival of the probiotic strains, but this was dependent on the dose of prebiotics added. Only for BL with 2% FOS added, cumulative survival (77.8%) was still higher than without FOS (53.6%). Conclusion: A validated, dynamic in vitro model can be used to study survival of probiotic strains in the upper GI tract and help establish the dose for use in infant formula. A combination of strains might provide more benefit to the infant than an individual strain. Supplier practices, a combination of strains, and presence and dose of a prebiotic, can impact survival and need to be taken into account when recommending a probiotic feeding dose.

P0911
Title:
Assessment of Modifiable Lifestyle Factors in Obese Children and Adolescents by Questionnaires

Jeong Wan Seo 1, Ji Ah Jung 2, Hye Sook Park 3, Jae Young Kim 4, Sun Hwan Bae 5, Ky Young Cho 1
1) Department of Pediatrics, School of Medicine, Ewha Womans University, Seoul, South Korea 2) Department of Pediatrics, College of Medicine, Hallym University, Seoul, South Korea 3) Department of Preventive Medicine, School of Medicine, Ewha Womans University, Seoul, South Korea 4) Department of Pediatrics, College of Medicine, Chungbuk National University, Seoul, South Korea 5) Department of Pediatrics, College of Medicine, Konkuk University, Seoul, South Korea

Summary:
Objective: The identification of specific behaviors conducive to overeating or inactivity is the cornerstone of obesity management. The Committee on Nutrition of the Korean Pediatric Society developed the parent and self reported questionnaires about eating behavior and physical activity in 2006. The aim of this study is evaluating the usefulness of the questionnaires in assessing the modifiable lifestyle factors related obesity. Methods: A retrospective chart review was performed for 177 children (6-11 years old) and 136 adolescents (12-16 years old) from 10 hospitals between May 2006 and January 2007. They completed parent and self reported questionnaires. We divided them into normal and overweight group at or above age-gender-specific 85th percentile based on the 2007 Korean national growth charts. Results: As comparing with the children, the adolescents tend to have a more sedentary activity and inappropriate dietary behaviors significantly (p<0.05). Maternal overweight was associated with the risk of overweight in children (OR 4.12, 95% CI: 1.63-10.45) and in adolescents (OR 3.48, 95% CI: 1.5-8.09). Overweight was significantly associated with family history of adult disease in children and adolescents (p<0.05). Inappropriate eating behavior was associated with the risk of overweight in children (strong appetite: OR 31, 95% CI: 3.57-268, eating fast: OR 5.71, 95% CI 2.2-15.1, eating until they were full: OR 6.07, 95% CI: 2.52-14.61 and favoring greasy foods: OR 6.07, 95% CI 2.52-14.62) and in adolescents (strong appetite: OR 13.12, 95% CI: 1.4-122.8, eating fast: OR 4.44, 95% CI: 1.37-22.2, binge eating: OR 2.58, 95% CI 1.17-5.66, eating until they were full: OR 2.78, 95% CI: 1.2-6.32 and favoring greasy foods: OR 3.45, 95% CI: 1.52-7.85). Sedentary activity such as TV viewing and using a computer is significantly associated with overweight in children and adolescents (p<0.05). Adolescents with using a computer for >2 hours/day were higher risk of overweight than for <2 hours/day (OR 9.52, 95% CI: 1.14-79.33). Conclusion: The intervention to modify the obesity-related lifestyle factors is needed before adolescents. These questionnaires are useful in identifying the modifiable lifestyle and in counseling the overweight children and adolescents individually in pediatric clinic.

P0912
Title:
Relationship of lifestyle and metabolic risk factors in obese children

Ky Young Cho 1, Joo Hyun Gil 1, Hye Won Yom 2, Hye Sook Park 3, Jeong Wan Seo 1
1) Department of Pediatrics, School of Medicine, Ewha Womans University, Seoul, South Korea 2) Department of Pediatrics, Metropolitan Dong-Bu Hospital, Seoul, South Korea 3) Department of Preventive Medicine, School of Medicine, Ewha Womans University, Seoul, South Korea

Summary:
Objective: The metabolic syndrome is a cluster of the most dangerous risk factors for type 2 diabetes and cardiovascular disease. Its early identification is very important to facilitate preventive action. The aim of this study is to assess the relationship of lifestyle and metabolic risk factors in childhood. Methods: A retrospective chart review was performed for 108 obese children (7-15 years old) who visited at our pediatric obesity clinic from January 2004 to December 2007. They were asked by a questionnaire developed by the Committee on Nutrition of the Korean Pediatric Society, to assess eating behaviors and physical activity associated with obesity. Obesity was defined as BMI>95th percentile for age and sex based on the 2007 Korean national growth chart. We measured their serum triglyceride, HDL cholesterol, sugar levels and insulin levels after fasting for 12 hours. Each metabolic risk factor was defined as follows, diastolic or systolic blood pressure >90th percentile for age, serum triglyceride>110mg/dL, HDL-cholesterol<40mg/dL, fasting glucose>110mg/dL and insulin>20mg/dL. Results: Clustering of metabolic risk factors demonstrated that 63% had more than 1 factor, 32% had more than 2 factors and 10% had more than 3 factors. Hypertriglyceridemia (36%), hyperinsulinemia (24%), HDL-hypoleolemia (20%) and hypertension (20%) were observed. Fasting sugar was within normal range in obese children. Hypertension was significantly associated with imbalanced diet in obese children (p<0.05). Eating after 8 PM were associated with a higher risk of hypertension, compared
with eating before 8 PM (Odds ratio: 2.6, 95% CI: 1.1-6.13). Obese children who dislike exercise were associated with a higher risk of hyperinsulinemia, compared with those who like exercise (Odds ratio: 9.3, 95% CI: 2.43.3). The odds ratios for the clustering of metabolic risk factors associated with watching TV for 3 hours/day were 5.5 (95% CI: 1.5-20.3). Conclusion: This study suggested that obese children with sedentary lifestyle and inappropriate diet behaviors were at significant risk of developing metabolic syndrome in childhood. Interventions to improve insulin metabolism in youth should target at lifestyle changes with decreased sedentary activity and balanced diet.

P0913
Title:
Relationships of Serum Leptin Levels with Bone Metabolism in the Childhood Obesity
Kyung Rye Moon, M.D.; Gwangju; Korea;
Summary:
Purpose: The aim of this study was to evaluate the influence of leptin on biochemical markers of bone metabolism in childhood obesity. Methods: A total of 50 male children (25 obese and 25 controls) were recruited from the pediatric outpatient clinic at the Chosun University Hospital from November 1st 2005 to May 30th 2006. BMI, body fat percentage, serum leptin, bone-specific alkaline phosphatase (B-ALP), C-terminal propeptide of type 1 collagen (CICP), total deoxypyridinoline crosslinks (total DPD) were measured. The correlations of leptin with BMI, body fat percentage, B-ALP, CICP, total DPD were analyzed by Pearson’s correlation. In a multiple stepwise regression analysis, leptin after correction for body weight was evaluated if there was a correlation with biochemical markers of bone formation and resorption respectively. Results: The leptin levels of the obese group were significantly higher than those of the control group (p=0.012). In the obese group, the leptin level was significantly positively correlated with the BMI (r=0.551, p=0.01) and the percentage of body fat (r=0.584, p=0.018). In the obese group, of bone markers, B-ALP (r=0.613, p=0.026) and CICP (r=0.583, p=0.037) were negatively correlated with leptin. B-ALP (r=0.728, p=0.007) and CICP (r=0.684, p=0.014) were negatively correlated with leptin when corrected for body weight. In the control group, bone markers were not correlated with leptin. In the multiple stepwise regression analyses, there was a negative correlation between the leptin and B-ALP (Y=-39.653X+356.341, p=0.026), CICP (Y=-13.437X+116.013, p=0.037) respectively in the obese group. Conclusion: Leptin was a significant factor in the bone formation but not in bone resorption in childhood obesity. Key Words: Leptin, bone-specific alkaline phosphatase, C-terminal propeptide of type 1 collagen, total deoxypyridinoline crosslinks, obesity

P0914
Title:
Avoid severe acute malnutrition among Angolan children; trying to find a way
Laura Rubert 1, Fabio Rodaro 1, Massimo Maschio 1, Tarcisio Not 1, Franco Panizion 1, Alessandro Ventura 1
1) Institute for Child Health IRCCS Burlo Garofolo, Trieste, Italy
Summary:
Background. 70% of the children under 2 years of age referring to the Hospital Divina Providencia, (Luanda, Angola) have a weight lower than the two standard deviation for age. In this study, we selected moderate malnourished children, advised their families about nutrition, gave them a nutritional support (dried milk) with the aim to avoid severe malnutrition. Methods: From September to December 2007, 104 children (median age: 15 months, range 3 m. and 7 years, 50 F, 54 M) with a moderate malnutrition (weight-for-height W/H, mean value 75%, range 70%-80%) were enrolled and followed for a mean period of 4 weeks (ranging from 2-6 w.). During the first examination were given: nutritional advice (regarding the daily number of meals using locally available ingredients as source of carbohydrates, proteins and fat), dried milk (meeting about 50% of the child caloric need), vitamins, antibiotic and anti-helmintic treatment. All the enrolled children were invited to come back two week later for evaluating the clinical condition, to receive other milk and to reinforce nutritional advice. When the W/H of 85% were achieved, the follow-up was stopped. Results. During the follow up, 51/104 (49%) achieved the target of 85% W/H. 19/51 (37.3%) at the first control; 12/51 (23.5%) at the second one; 4/51 (7.8%) at the third and 8/51 (15.7%) at the fourth. 8/51 (15.7%) needed more than 4 controls to achieve the goal of 85% W/H, 53/104 (51%) were lost during the follow up, before achieving their 85% W/H. 21/53 (39,6%) did not come back at the first control; 12/53 (22,6%) at the second one; 6/53 (11,3%) at the third one, 6/53 (11,3%) at the fourth one and 8/53 (15%) were lost after 4 controls. Conclusion. This preliminary study shows a model for preventing acute severe malnutrition in children with moderate one, giving a modest nutritional support (dried milk, 10l per child) and nutritional advice. However it is essential find out what is needed to improve the adherence to the follow up for understanding the real efficacy of this kind of nutritional rehabilitation.
Iron bioavailability from a traditional complementary food “khichuri” consumed by Pakistani infants; The effect of added ascorbic acid and human milk intake

Aziz Jiwani 1, Lena Davidsson 3, Christophe Zeder 2, Zulfiqar Bhutta 1, Richard Hurrell 2
1) Department of Pediatrics, The Aga Khan University Hospital, Karachi, Pakistan 2) Laboratory for Human Nutrition, Institute of Food Science and Nutrition, Swiss Federal Institute of Technology, Zurich, Switzerland 3) Nutritional and Health Related Environmental Studies Section, Division of Human Health, International Atomic Energy Agency (IAEA), Vienna, Austria

Summary:
Background: Although human milk contributed significant quantities of ascorbic acid to infants’ diets in Dhaka, no enhancing effect on iron bioavailability was observed (Davidsson et al Am J Clin Nutr 2004;79:1073-7). Objective: To evaluate the effect of added ascorbic acid and the influence of human milk on iron bioavailability from khichuri. Design: Erythrocyte incorporation of iron stable isotopes 14 days after administration was used as a proxy for iron bioavailability. Children (<12 months) consumed 8 servings of khichuri, with ascorbic acid (labeled with 57Fe) and without ascorbic acid (58Fe). Iron bioavailability was also evaluated from test meals with added ascorbic acid, consumed with or without human milk. Results: Geometric mean iron bioavailability increased from 8.1 to 15.1 % (n=9) (p=0.002 paired Student’s t-test) and from 10.5 to 35.0 % (p<0.0001: n=10) after addition of ascorbic acid at 2:1 and 4:1 molar ratios relative to iron respectively. Intake of human milk did not influence iron bioavailability from khichuri with added ascorbic acid (2:1); geometric means were 12.0 and 13.6 % (n=19). Conclusion: Ascorbic acid is a potent enhancer of iron bioavailability when added to khichuri at molar ratios similar to those evaluated previously in Dhaka. These results thus indicate – indirectly - that components of human milk modify the influence of ascorbic acid on iron bioavailability. However, breastfeeding infants immediately after intake of khichuri with added ascorbic acid did not influence iron bioavailability, clearly demonstrating that intake of human milk does not blunt the enhancing effect of added ascorbic acid on iron bioavailability from complementary foods.

P0916

Title:
Body Composition and Metabolic Complications of HIV Therapy in Children from Argentina

Miriam Tonietti 1, Laura Gaete 1, Alicia Sanchez 1, Aurelia Fallo 1, Liliana Trifone 1
1) Hospital Niños Ricardo Gutiérrez, Buenos Aires, Argentina

Summary:
Background: The prognosis of HIV infected patients has improved since the introduction of HAART but side effects were reported. Metabolic complications are well known in adult patients, but they have not been fully described in children yet. Objective: to assess the effects of HAART on body composition and correlate it to carbohydrate and lipid metabolism in HIV children. Methods: A cross sectional descriptive clinical study was conducted in outpatients between April 2006 and April 2007 in Nutrition Unit of the Hospital de Niños Ricardo Gutiérrez. All HIV vertically infected children, ranged from 2 to 18 on HAART for more than 6 months were included. Three groups of patients identified as underweight (<-1 scoreZ BMI), normal weight ( Z BMI -1 to +1) and overweight ( >1 z BMI). we determined age, gender, weight, length, BMI, brachial and waist circumferences, subescapular and tricipital skinfold thickness, bioimpedance (in patients over 10) , fasting glycemia, insulinemia, total cholesterol (TC), HDL and LDL cholesterol, triglycerides, drugs. Central fat distribution (CFD) : subescapular skinfold was >2 SD than tricipital; lipodistrophy (LD) : tricipital skinfold was< 3 percentile and subescapular 35D higher; fat redistribution with both CFD and LD. Insulin resistance was defined by HOMA IR ≥ 3.5 and glucose/insulin ratio. Dyslipidemia was defined as cholesterol and/or triglycerides >90 percentile or low HDL-C (<40 mg%), Results: n=91 patients, mean age 10±3 years, 48 male (53%). Height < -1SD: 37 (40.6%). Underweight: 13p (14%), 3p had CFD associated with higher TC and LDL-C (p<0.05) and triglycerides (p.03).Normal weight: 74p(81%), 19 CFD, associated to age (p.01), LDL-C (p.04). Overweight: 4p (5%), 2 CFD. ) subescapular skinfold >75percentile: 15p associated with glucose/insulin (p< .02). Conclusion In our series altered body composition was seen in the three groups. Whatever the BMI, our patients had higher fat mass. This pattern of body composition was significantly related to dyslipidemia (hypertriglyceridemia, hypercholesterolemia and LDL-C) and altered carbohydrate metabolism.

P0917

Title:
Dislipidaemia in childhood

silvia valeria segal 1, Valeria Segal 1, teresa larocca 1, Teresa Larocca 1, erika soto quin 1, Erika Soto Quintt 1, Laura Gaete 1, laura gaete 1, Lillana Trifone 1, lilliana trifone 1
1) hospital de niños ricardo gutierrex, buenos aires, argentina

Summary:
Introduction: The prevalence of familial and polygenic lipid abnormalities has increased due to changes in lifestyle worldwide. The dyslipidaemia in childhood is considered as a risk factor for cardiovascular disease in adults. An early nutritional and pharmacological treatment is very important for its prevention. Objective: To assess the early effectiveness of dietary and pharmacological treatment in children with familial and polygenic dyslipidaemia. Material and methods: We described 66 out patients with at least one year of treatment from June 2001 to June 2006, assisted at Nutrition Unit. Data: BMI z-score, physical activity, and family history of dyslipidaemia (DLP), diabetes (DBT), obesity (OB), cardiovascular disease (CVD), and hypertension (HT); fasting plasmatic Total Cholesterol (TC), LDL-c, HDL-c, Triglycerides (TG), Apolipoprotein A and B, glucose and uric acid levels (mg/dl) were measured at the beginning (I) and after one year (Y) of treatment. They were classified as familiar hypercholesterolemia (HCF), polygenic (HCP), secondary (HS) and hypertriglyceridemia (HTG). Dietary (D) and pharmacological (PH) treatment were evaluated. Results: mean age: 8.68 years (±4.41) male: 41p (62.1%) All patients were normotensive, well nourished and physically active. Family history: DLP: 43p (66.15%), DBT: 32p (49.2%), OB: 23p (35.3%), CVD: 19p (29.2%), HTA 45p (69.2%). HCF: 10 p (15.3%), with pharmacological and dietary treatment 3/10 p, TC decreased 24, 7% (287(I) vs 216(Y)), LDL-c 34% (208(I) vs 137(Y)) and Apo B 19% 123.5(I) vs 100 (Y). HP: 41p (62.1%), with dietary therapy decreased TC (229(I) vs 205 (Y) (p<0.01) and LDL-c 158(I) vs 128(Y) (p<0.01) HS: 10p (15.3%) 8/10 patients received dietary treatment and reduced TC (259(I) vs 176(Y) (p<0.01) and LDL-c 167 vs 102) p<0.01. Only 2/10 patients (20%) required pharmacological and dietary treatment, their TC decreased 25%. 336(I) vs 252(Y) and LDL-c 32% (253 (I) vs 172(Y)) HTG 4p (6.1%) 8/10 patients received dietary treatment and reduced fibrinogen (p<0.01) and LDL-c 158(I) vs 128(Y) (p<0.01). There were no significant differences in ASAT/ALAT ratio among both groups. The hs-CRP values were significantly higher in MS patients. (2.55 mg/l ± 1.97 vs 1.65 mg/l ± 1.3, p<0.05). There were no significant differences in fibrinogen levels and WBC count between groups. Higher levels of ALAT were found in patients with BMI Z score ≥ 2 (27.9 U/L ± 18.1 vs 20.3 U/L ± 11.7, p<0.05). The hs-CRP levels were positively correlated with BMI (p<0.01), waist circumference (p<0.05) and HDL-C levels (p<0.01). WBC count was positively correlated with BMI (p<0.05), waist circumference (p<0.05), systolic and diastolic BP (p<0.05) and HOMA-IR (p<0.005). CONCLUSION: The findings in our study show that pharmacological treatment is necessary in most of familiar hypercholesterolemia patients.

P0918

Title: METABOLIC SYNDROME, VASCULAR INFLAMMATION MARKERS AND LIVER STEATOSIS IN PEDIATRIC OBESITY

ADRIANA ROUSSOS 1, MARIA ROSARIO DE LEO 1, VERONICA VACCAREZZA 1, VIVIANA OSTA 1, VALERIA SEGAL 1, LILIANA TRIFONE 1
1) R. GUTIERREZ HOSPITAL. NUTRITION UNIT, BUENOS AIRES, ARGENTINA

Summary:
OBJECTIVE: To assess the relationship between metabolic syndrome (MS) and vascular inflammation and liver steatosis markers, in obese pediatric patients. METHODS: We included data of 162 overweight and obese children and adolescents, from the Nutrition Section of R. Gutiérrez Hospital (Buenos Aires, Argentina), from 2006 to 2008. We analyzed: age, sex, weight, height, BMI, BMI Z score, waist circumference, blood pressure (BP), fasting and 2 hours post glucose load glycemia and insulinemia, insulin resistance (HOMA-IR), total cholesterol, HDL-Cholesterol, tryglicerides, liver steatosis markers: alanine aminotransferase (ALAT >40 U/L), aspartate aminotransferase (ASAT), ASAT/ALAT ratio <1, chronic mild inflammation biomarkers: high sensitivity C-reactive protein (hs-CRP >3 mg/l), fibrinogen (>450 mg/dl) and white blood cell (WBC) count (>10000/mm3). Metabolic syndrome was diagnosed by WHO criteria. RESULTS: Mean Age:11.6 ±2.3 years. 48% male. The prevalence of MS was 28.4%. We found elevated levels of ALAT in11%, ASAT/ALAT ratio <1 in 32%, hs-CRP: <1 mg/l in 34.9%, 1-3 mg/l in 38%, >3 mg/l (high risk) in 27.1%, increased fibrinogen levels in 30% and elevated WBC count in 14.1%. 51% of patients with MS had ASAT/ALAT ratio <1 versus 27% in patients without it (p< 0.01). There was no significant difference in the proportion of patients with elevated ALAT levels among both groups. The hs-CRP values were significantly higher in MS patients, (2.55 mg/l ± 1.97 vs 1.65 mg/l ± 1.3, p<0.05). There were no significant differences in fibrinogen levels and WBC count between groups. Higher levels of ALAT were found in patients with BMI Z score ≥ 2 (27.9 U/L ± 18.1 vs 20.3 U/L ± 11.7, p<0.05). The hs-CRP levels were positively correlated with BMI (p<0.01), waist circumference (p<0.05) and HDL-C levels (p<0.01). WBC count was positively correlated with BMI (p<0.05), waist circumference (p<0.05), systolic and diastolic BP (p<0.05) and HOMA-IR (p<0.005). CONCLUSION: The findings in our study show that in obese children the presence of MS is associated with changes in markers of endotelial inflammation and liver steatosis, suggesting future cardiometabolic risk. An intensive approach should be needed in these patients.

P0919

Title: TRANSIENT HIPERGLYCEMIA IN CHILDREN WITH ACUTE LYMPHOBLASTIC LEUKEMIA

Laura Gaete 1, Lidia Caracotche 1, Florencia Miari 1, Silvina Prada 1, Marcela Gutierrez 1, Liliana Trifone 1
1) Hospital de Niños Ricardo Gutiérrez, Buenos Aires, Argentina

Summary:
Introduction: Transient hyperglycemia (TH) in pediatric patients frequently occur as a complication for the use of L-asparaginase and corticosteroids during induction treatment of acute lymphoblastic leukemia (ALL). Objective: To asses the prevalence and risk factors for TH during the induction treatment in paediatrics patients with ALL. Material and methods: It was evaluated a sample of 138 children (between 1 and 18 years) with newly ALL diagnosed and treatment at Haematology and Nutrition Units, between december 2002-december 2007. Data: age, gender, BMIz-score, blood pressure. Laboratory: glycaemia (G) (the highest value at induction treatment: L-asparaginase, corticosteroids, vincristine, and daunorubicin),
total cholesterol, LDLc, HDLc, triglycerides, ALAT; ASAT; amylase, lipase, pancreatic echography. Family history of diabetes, hypertension, overweight and obesity and dyslipidaemia; infections disease associated, and ALL risk classification: high, intermediate and standard. TH: glucose concentration of ≤200 mg/dl (ADA) in 2 or more determinations during the first 28 days of induction period. Result: TH occurred in 17.5% (24/138) of patient, G x 294, 95 mg/dl (±0.4) at the 6.38 day (±4.5) from the beginning of treatment. The TH was highly associated (p<0.05) with female gender 66.6% (16p), puberty, mean age 12 years, and family history of diabetes, dyslipidaemia, and obesity. The 79.2% (19/24p) needed insulin for more than seven days, average 32.6 days (±22.5) and G x 298.71 mg/dl (±93). The 52.9% (9/19p) received insulin in another time of the disease. Only 1 patient of the TH group did not required insulin. Conclusions: The prevalence of TH during induction period in paediatric patient with ALL occurs commonly within first week. Identification of risk factors, early diagnosis and nutritional treatment is critical in preventing great metabolic complications and increase of the morbimortality of this disease

P0920

Title:
A Breastfeeding e-Learning Project Based on a Web Forum

Juan José Lasarte 1, María Teresa Hernandez 2, Carmen Rosa Pallás 3, N Marta Díaz 4, Adolfo Gomez Papi 5, María José Lozano 6
1) Primary Care Health Center of Zuera, ZARAGOZA, SPAIN 2) Primary Care Health Center “Fuente de San Luis, VALENCIA, SPAIN 3) Division of Neonatology, “12 de Octubre”, MADRID, SPAIN 4) Research Unit, University Hospital of Canaries, LA LAGUNA, SPAIN 5) Division of Neonatology, “Joan XXIII” University Hospital, TARRAGONA, SPAIN 6) University of Cantabria, hospital Valdecilla, SANTANDER, SPAIN

Summary:
Objective: The Internet has introduced new ways of learning that may complement medical training during the residency period. We describe the experience with a new method of e-learning for training in human lactation and breastfeeding counselling. Pediatric residents participated in the Human Lactation Forum maintained by the Spanish Pediatric Association Breastfeeding Committee, a site on the Internet where parents may write in for pediatric advice on breastfeeding. Methods: From April 2005 to May 2006, 42 pediatric residents from four hospitals in Spain received a month of intensive theoretical training on breastfeeding, and afterward, they took weekly turns answering parents’ questions in the forum. Before and after the experience, they completed a pre–post knowledge test and an opinion postexperience questionnaire with open questions. A test was used to analyze the differences pre- and posttest; the opinion questionnaire was analyzed qualitatively. Results: The mean age of participants was 28.3 years; 88% were women, and 80% were in their third or fourth year of residency. The percentage of correct answers was higher after participation in the program, and the difference had statistic significance. The residents estimated that nearly a half of their patients needed breastfeeding advice, and they thought that the program improved their knowledge of breastfeeding and their communication skills with mothers. On average, they spent 2.9 hours daily to answer the questions. Conclusions: The learning experience was positively evaluated by the participants and contributed to increase their knowledge and skills in breastfeeding issues. We think it is a good method for training future pediatricians on breastfeeding management. In addition, the instrument may contribute to improve lactation knowledge among pediatricians.

P0921

Title:
Effect of maternity care practices on breast feeding

ELENA PEREZ BELMONTE 2, MARIA JOSE LOZANO 1, JAVIER LLORCA 1
1) UNIVERSITY OF CANTABRIA, SANTANDER, SPAIN 2) UNIVERSITY HOSPITAL VALDECILLA, SANTANDER, SPAIN

Summary:
Objective: The aim of the current study was to determine the factors affecting breastfeeding during the perinatal period, especially those related to maternity care practices, and their effect on breastfeeding rates during the first year of life in a Spanish region. Methodology: 528 infants born in the year 2005 in Cantabria, a region of the north of Spain, with 531,159 inhabitants in the year 2005 and a birth rate of 5.77 per 1000 were included in the study. A questionnaire, comprised of 84 questions was distributed at the 15 months check-up by paediatricians at primary health care centres and was answered by the mother. Information about feeding method, gestational age and somatometry was taken from the medical records of each infant by the same researcher. Categorical variables were compared using the chi-square test or the Fisher exact test; means were compared by Student’s t test or analysis of variance (ANOVA). Data were analyzed with the package Stata 8/SE (Stata Corporation, College Station, Tx, USA). Results: Of the 528 (100%) infants participating in our study, 79.1% were being fully breastfed at discharge from hospital, 7.2% were receiving formula and breastfeeding, and the rest (13.7%) were being fed with formula. The prevalence of breastfeeding at discharge (fully and partly) drops to 65.7% at 3 months postpartum, becomes only 39.2% for those continuing to receive any kind of breastfeeding at 6 months of age, and this percentage falls to 11.0% at the age of 12 months. Formula or glucose water administered before infant-to-breast contact and during their stay in the maternity ward have a negative influence on breast feeding. Infants breast fed with fixed timetables and those mothers receiving formula gift packs and written information about formula at discharge had a significantly shorter duration of breastfeeding. We have not found significant association with gestational age, birth weight, rooming-in or being admitted to a neonatal unit. However, preterm babies and low birth weight (<2500 g) do present significant shorter duration of breastfeeding. However, preterm babies and low birth weight (<2500 g) do present significant shorter duration of breastfeeding. We have not found significant association with gestational age, birth weight, rooming-in or being admitted to a neonatal unit.

P0921

Title:
Effect of maternity care practices on breast feeding

ELENA PEREZ BELMONTE 2, MARIA JOSE LOZANO 1, JAVIER LLORCA 1
1) UNIVERSITY OF CANTABRIA, SANTANDER, SPAIN 2) UNIVERSITY HOSPITAL VALDECILLA, SANTANDER, SPAIN

Summary:
Objective: The aim of the current study was to determine the factors affecting breastfeeding during the perinatal period, especially those related to maternity care practices, and their effect on breastfeeding rates during the first year of life in a Spanish region. Methodology: 528 infants born in the year 2005 in Cantabria, a region of the north of Spain, with 531,159 inhabitants in the year 2005 and a birth rate of 5.77 per 1000 were included in the study. A questionnaire, comprised of 84 questions was distributed at the 15 months check-up by paediatricians at primary health care centres and was answered by the mother. Information about feeding method, gestational age and somatometry was taken from the medical records of each infant by the same researcher. Categorical variables were compared using the chi-square test or the Fisher exact test; means were compared by Student’s t test or analysis of variance (ANOVA). Data were analyzed with the package Stata 8/SE (Stata Corporation, College Station, Tx, USA). Results: Of the 528 (100%) infants participating in our study, 79.1% were being fully breastfed at discharge from hospital, 7.2% were receiving formula and breastfeeding, and the rest (13.7%) were being fed with formula. The prevalence of breastfeeding at discharge (fully and partly) drops to 65.7% at 3 months postpartum, becomes only 39.2% for those continuing to receive any kind of breastfeeding at 6 months of age, and this percentage falls to 11.0% at the age of 12 months. Formula or glucose water administered before infant-to-breast contact and during their stay in the maternity ward have a negative influence on breast feeding. Infants breast fed with fixed timetables and those mothers receiving formula gift packs and written information about formula at discharge had a significantly shorter duration of breastfeeding. We have not found significant association with gestational age, birth weight, rooming-in or being admitted to a neonatal unit. However, preterm babies and low birth weight (<2500 g) do present significant shorter duration of breastfeeding. We have not found significant association with gestational age, birth weight, rooming-in or being admitted to a neonatal unit.

P0921

Title:
Effect of maternity care practices on breast feeding

ELENA PEREZ BELMONTE 2, MARIA JOSE LOZANO 1, JAVIER LLORCA 1
1) UNIVERSITY OF CANTABRIA, SANTANDER, SPAIN 2) UNIVERSITY HOSPITAL VALDECILLA, SANTANDER, SPAIN

Summary:
Objective: The aim of the current study was to determine the factors affecting breastfeeding during the perinatal period, especially those related to maternity care practices, and their effect on breastfeeding rates during the first year of life in a Spanish region. Methodology: 528 infants born in the year 2005 in Cantabria, a region of the north of Spain, with 531,159 inhabitants in the year 2005 and a birth rate of 5.77 per 1000 were included in the study. A questionnaire, comprised of 84 questions was distributed at the 15 months check-up by paediatricians at primary health care centres and was answered by the mother. Information about feeding method, gestational age and somatometry was taken from the medical records of each infant by the same researcher. Categorical variables were compared using the chi-square test or the Fisher exact test; means were compared by Student’s t test or analysis of variance (ANOVA). Data were analyzed with the package Stata 8/SE (Stata Corporation, College Station, Tx, USA). Results: Of the 528 (100%) infants participating in our study, 79.1% were being fully breastfed at discharge from hospital, 7.2% were receiving formula and breastfeeding, and the rest (13.7%) were being fed with formula. The prevalence of breastfeeding at discharge (fully and partly) drops to 65.7% at 3 months postpartum, becomes only 39.2% for those continuing to receive any kind of breastfeeding at 6 months of age, and this percentage falls to 11.0% at the age of 12 months. Formula or glucose water administered before infant-to-breast contact and during their stay in the maternity ward have a negative influence on breast feeding. Infants breast fed with fixed timetables and those mothers receiving formula gift packs and written information about formula at discharge had a significantly shorter duration of breastfeeding. We have not found significant association with gestational age, birth weight, rooming-in or being admitted to a neonatal unit. However, preterm babies and low birth weight (<2500 g) do present...
lower rates of breastfeeding. Conclusions: The current study provides important information about the potential impact of maternity care practices on both breastfeeding initiation and duration rates. The identification and modification of certain hospital routines in the maternity wards might contribute to increase the duration of breastfeeding.

P0922

Title:
Bacterial contamination on milk kitchens in Pediatric Hospitals in Salvador, Brazil

Romilda Castro Cairo 1, Luciana R. Silva 1, Carol F. Andrade 1, Maria Goreth de Andrade Barberino 2, Antônio Carlos Bandeira 2, Camilo Vieira 1
1) CEGHP -Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil 2) Microbiology Laboratory of University Hospital Federal University of Bahia, Salvador, Brazil

Summary:
Objective: To describe the bacterial microflora isolated from the hands, stools, pharynx of all workers at milk kitchens in pediatric hospitals in the city of Salvador, Brazil, as well as in the formulas prepared by them. Methods: Hand and pharynx swabs and stool samples were collected from all 91 workers from 20 milk kitchens from all public and private hospitals from Salvador, Brazil. Samples of the milk and formulas delivered by the kitchens were also collected. All samples were cultured for the detection of pathogenic and non-pathogenic bacteria. Results: Pathogenic bacteria were isolated from 20 (22.0%) and eight (8.8%) cultures of the hands and pharynx of the workers, respectively. No pathogenic bacteria were isolated from stool samples. Pathogenic bacteria were isolated from 17 (18.7%) milk samples. The prevalence of pathogenic bacteria in hand swabs was significantly higher in workers from public (37.8%) than from private (6.5%) hospitals (prevalence ratio [PR]=5.8; P<0.01). Pathogenic bacteria were isolated from two (4.4%) workers from public hospitals and six (13.0%) workers from private hospitals (PR=0.38; P=0.27). Pathogenic bacteria were isolated from 11 (24.4%) milk samples from public hospitals and 6 (13.0%) from private hospitals (PR=1.9; P=0.16). Discussion and conclusion: A high prevalence of contamination was found, mainly on the hands of workers on units for manipulation of milk. Preventive efforts should be intensified and focus primarily on effective hand washing and continuous work supervision.

P0923

Title:
Body image in adolescents from a school in Salvador, Bahia, Brazil: a qualitative study

Luíza Amélia Cabus Moreira 1, Irismar Reis de Oliveira 2, Luciana R. Silva 1, Tarcísio Andrade 2
1) CEGHP - Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil 2) Psychiatry Service Federal University of Bahia, Salvador, Brazil

Summary:
Objective: To examine body image dissatisfaction in a group of adolescents, how they perceive an “ideal body” and what kind of efforts do they make to obtain it. Methods: Seventy-four adolescents (38 girls; 52.0%) who studied in a private school of Salvador, Brazil, were enrolled. They were divided into eight focal groups (four groups for each sex) and each group was interviewed by one of the authors (LACM). Participants were also asked to complete the Body Shape Questionnaire (BSQ) and to inform demographic and lifestyle information. Results: Patients’ mean age was 16.5±1.4 years. Fifty nine adolescents (78.7%) had normal body mass index (BMI), 12 (16.0%) were underweight, one was overweight, two (2.7 %) had obesity grade I and one (1.3%) did not report his weight. BMI did not differ statistically between the genders (P=0.90) or between white and Afro-descendent adolescents (P=0.43). Fifty seven adolescents (76.0%) had a normal BSQ score, 13 (17.3 %) had a slight preoccupation, four (5.3 %) a moderate preoccupation and one (1.3 %) a severe preoccupation with body shape. Three (7.7%) male adolescents had a slight preoccupation on BSQ scores whereas 15 (41.6%) female adolescents had slight, moderate or severe preoccupation. There was no significant difference between whites and non-whites in relation to BSQ scores (P=1.0). BMI and BSQ scores were found to correlate in girls (P=0.009), but not in boys (P=0.197). Qualitative analysis shows that male and female adolescents had an imaginary idea about a “perfect body”. Females thought that body satisfaction was associated with a thin body, fine hair and a noise with Caucasian characteristics. Boys did not want to be fat, but they were very worried about gaining muscle mass. Females were more anxious about pursuing this beauty ideal and about other people’s thoughts about their appearance than males. Females were more influenced by the media on the construction of this imaginary body. Between the two genders, there was a clear discrimination toward fat persons. Conclusions: Male and female adolescents have an ideal body image in order to be accepted by society and they admit to make efforts to be like the “others” think they should be and this causes anxiety and mood depression.

P0924

Title: Comparing breastfeeding promotion in Baby-Friendly Maternity Hospitals and Not-as-Yet Baby Friendly Hospitals in Salvador, Brazil
Mateus Souza 1, Poliana Soares 1, Priscilla Nunes Ortiz 1, Rafaela Rolim 1, Graciete Vieira 1, Luciana R. Silva 1
1) CEGHP - Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas da Universidade Federal da Bahia, Salvador, Brazil

Summary
Objective: Compare the execution of the steps 3 to 10 among the Ten Steps in two Baby-Friendly Hospitals (BFH) and two Not-as-Yet Baby-Friendly Hospitals (NBFH).

Methods: A cross-sectional study was made by interviews of 100 mothers assisted in BFH and 103 in NBFH at hospital discharge between September, 2007 and January, 2008. Pearson chi-square test and Fisher’s exact test were utilized for statistic correlation.

Results: Significant difference was found between BFH and NBFH in the steps 3, 5 and 6: 68% of the mothers in BFH learned about the advantages of breastfeeding (versus 32%, p= 0,000), 38% were informed how to draw the milk from their breasts (versus 14,6%, p= 0,000), and 19% of the babies received other food or drink (versus 69%, p= 0,000). The step 9 was executed in both hospitals in almost 100% interviewed. In two aspects of step 8, it was found significant difference between BFH and NBFH, but there was no difference in the orientation of mothers to wake up their babies to breastfeed (42% in the BFH and 25% in the NBFH, p= 0,011). There was no significant difference in the execution of the steps 4, 7, 9 and 10. Only 11% of the mothers in BFH were helped to start breastfeeding in the delivery-room (versus 5,8%, p= 0,195); 5% of the mothers in BFH were referred to breastfeeding support groups (versus 1%, p= 0,200). The step 7 was partially executed in both groups, 63% of the mother in BFH and 50% in NBFH went to the room in the first hour after delivery (p= 0,047), but only 10% were separated in BFH (versus 20%, p= 0,091).

Conclusion: A positive effective of the Baby-Friendly Hospital Initiative (BHFI) in the Salvador hospitals in some steps was observed, but the execution of them was under than the 80% expected for the BHFI. The affiliation to the BHFI did not show an effect in the promotion of breastfeeding in the first hour and in offering the mothers a breastfeeding support group.

P0925

Title:
Impact of hospitalization in breastfeeding practices at the Pediatric Hospital in Salvador, Brazil

Edna Lúcia Souza 1, Luciana R. Silva 1, Ana Carolína Souza Sá 1, Clara Maia Bastos 1, Andrea Borges Diniz 1, Carlos Maurício Cardeal Mendes 1
1) CEGHP - Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil

Summary:
Objective: To evaluate the influence of hospitalization in the practice of breastfeeding in children younger than 4 months hospitalized because of lower respiratory infection. Methods: This is a cross-sectional study that enrolled 97 patients admitted to the Unit of Small Suckles of a teaching hospital in Salvador, Brazil, because of pneumonia or bronchiolitis between July, 2004 and February, 2006. On hospital admission, the patients’ mothers were interviewed and a standardized questionnaire was filled in with information about breastfeeding practices provided by them. After hospital discharge the medical records were reviewed and information on the infant’s feeding practices during hospitalization was registered. Results: Of the 97 patients enrolled, 69.1% were male and the mean age was 52.5 days. Bronchiolitis accounted for 63.9% of the cases and exclusive breastfeeding was verified in 57.1% of patients, but it was interrupted in 35.4% of them with the introduction of infant’s formula during the hospital stay. The mean duration of the hospitalization was 16.1 days and it was not associated with the introduction of complementary feeding in the hospital. In bivariate analysis, the early discontinuation of exclusive breastfeeding was associated with better maternal instruction and lower family income. Discussion and Conclusions: The prevalence of exclusive breastfeeding was low. Moreover, the hospitalization contributed to the early interruption of exclusive breastfeeding in 35.4% of the infants, which may be due a poor awareness on the importance of the maintenance of exclusive breastfeeding by the health professionals and inadequate hospital structure.

P0926

Title:
Overweight and Obesity in Children and Adolescents

Luciana R. Silva 1, Fábio Moura Ferreira 1, Daniel R. Diniz-Santos 1, Michele F. Oliveira 1
1) CEGHP - Centro de Estudos em Gastroenterologia e Hepatologia Pediátricas Federal University of Bahia, Salvador, Brazil

Summary:
Objective: Estimate prevalence of overweight(OW) and obesity(O) among school children and adolescents in Bahia State, Brazil Methods: A cross-sectional study including 7,245(98.4%) subjects attending public 3,055/43% and private 4,079/57% schools in three state populations(SalvadorA 2,446/34%; ItabunaB (2,409/34%); ConquistaC (2,279/32%). Following the standard WHO criteria, height and weight were collected by three trained pediatricians along with basic demographic information. The BMI of every child was calculated, OW and O were defined utilizing the Cole et al criteria. Contingency tables and respective prevalences ratios with 95% confidence intervals PR(95%CI) were utilized to study associations of overweight and obesity with sex, age group, public/private school and regions. Results: Of the examined subjects, 837(11.7%) had OW and 203(2.8%) had O.
The prevalences among girls were of 381 (10.3%) and 94 (2.5%) for OW and O respectively; for boys the prevalences were 456 (13.3%) and 109 (3.2%) PR of 1.29 (1.15-1.44). In the 5-9y, 10-14y and 15-19y age groups, the prevalences of O were 6%, 3.2% and 2.7% respectively. Considering public/private schools, higher prevalences of O were observed in private schools, 10.9% for boys and 6.7% for girls, comparing with 2.9% for boys and 1.8% for girls in public ones PR of 2.38 (2.12-2.69). For the regions the prevalence of OW was higher in A among boys 207 (17%), O was higher among girls in region B 44 (3.7%). Conclusions: O and OW were higher in the more developed regions. Since 14.3% (11.7 + 2.8) of the subjects presented excess of weight, preventive actions are urgent considering cultural characteristics of each region.

P0927

Title: Zinc Supplementation in Acute Diarrhoea

Mahmoud El-Mougi 1, Ehab M Eid 2, Hussein M Koura 1, Magdi Mahmoud Abd-El-Al 2
1) Alazhar Faculty of Medicine, Cairo, Egypt 2) Institute of Childhood studies, Cairo, Egypt

Summary

OBJECTIVE: To evaluate efficacy of zinc supplementation on outcome of acute diarrhoea (AD) among children <3 y and incidence of recurrence in subsequent 3 months. METHOD: this randomised, double-blind placebo-controlled clinical trial was conducted on 252 children 3-36 months (zinc group n=127, placebo n=125), with AD <3 days with or without dehydration. Cases with wt/lt <70% or other serious infections were excluded. Site of study was Omm-el-Atebba hospital in Giza, Cairo. All study cases were randomly assigned to zinc or placebo and subjected to history, examination, weight and length recording, blood sample for CBC and stool for microscopy. Diarrhoea treatment and feeding was according to standard guidelines. Zinc (sulphate solution) or placebo was given orally from the time of randomisation daily for 14 d in following dose: 3-6 m 10mg, >6 m 20mg. Monitoring for vital signs, type and frequency of stools, vomiting, state of hydration and amount of ORS were carried 6 hourly while weight every 24 hr. On discharge, after stoppage of diarrhoea, mothers received a standardised health education message and were instructed to continue the supplied zinc or placebo for 14 days from the time of admission and to come back every 2 weeks. On follow up visit, mother was questioned for occurrence of diarrhoea, fever, other morbidities, hospitalisation and child was examined and weighed. RESULTS: zinc and placebo groups were comparable regarding age (11.3 vs 12.3 m), duration of diarrhoea, degree of dehydration: some or severe dehydration in 26-28% in both groups and nutritional status (wt/lt >80% in 83.5 vs 90.4%). Outcome showed significant reduction in % of cases with diarrhoea at 6, 12, 24 and 48 hr among zinc group. Mean durations of diarrhoea were 42.3 (zinc) and 61.8 hr (placebo). The % increase in wt was comparable, but amount of ORS consumed was significantly lower in zinc group. Compliance to follow up was equally high in both groups (100% at 2 weeks and 90% at 12 weeks). Compliance to zinc or placebo administration was also high. Mean number of diarrhoea days during follow up period was significantly lower in zinc group (6.5 vs 8.9), furthermore 62% of zinc group did not develop diarrhoea versus 40% in placebo. Weight gain was significantly higher in the zinc group (20% vs 16%). CONCLUSION: zinc supplementation shortens duration of AD and reduces recurrence in subsequent 3 m. Strengthening efforts to promote zinc supplementation are needed.

P0928

Title: Obesity prevalence in Syria

Mahmoud Bozo 1, Adel Katini 1
1) Damascus Hospital, Damascus, Syria

Summary

Objective: The Obesity became a reel epidemic problem world wide , but the prevalence was not determined in many countries in the middle east including Syria , and this first pilot study aim is to define the prevalence of the Obesity in childhood in the Capital : Damascus . Material and method: Perspective study during 3 months for All of children in the 33 public health centers of Damascus . Including criteria was the age : included Patients were classified in 3 categories of age : first category: 5years, the second category:10years , the third category: 15 years . The BMI was defined for all of them and compared with the IOTF standards. Results: 1919 children were collected , 50.1% males , 49.9% females, 930 children were in the first category of age ( 48.46%), 625 children(18%) were in the second category(32.5%),364 were in the third category ( 18 %). In total : 5.47% were Obese,13.86% were overweight, The total overweight and Obesity was more prevalent in girls than boys (21.3% vs 17.2%). The Overweight was more prevalent in girls than Boys(15.8% vs 11.8%), the Obesity was similar in the 2 genders ( 5.4% in boys vs 5.5% in girls ). The total overweight and Obesity was more prevalent with the age following ( 20.2% in boys and 25.7% in girls in the third category vs 15.4% in boys and 13.6% in girls for the second category , 5.8% in boys , 13.7% in girls in the first category ). The higher prevalence of Obesity was registered in the second category (6.22% vs 5.9% in the first category, and 3% in the third category). In conclusion : The Obesity proved again its high prevalence world wide , including the middle east ( including Syria ), this study clarify the necessity to the highlighting of this problem in this country, and the necessity to start studies about the prevalence in all cities , risk factors and the preventives ways for this problem .

P0929
**Title: Severe Malnutrition Risk Factors in Syria**

Mahmoud Bozo 1

1) Damascus Hospital, Damascus, Syria

**Summary**

Objective: Severe malnutrition in Syria is still a vague and obscure nutritional problem, with no clear studies to define the prevalence or the risk factors, despite the about 4% of the total hospitalizations being secondary to this disease. The aim of this study is to define the risk factors of nutritional severe malnutrition in hospitalized patients. Material and method: A prospective study during 15 months for all malnourished infants and children admitted from the outpatient clinic in the department of pediatrics in Damascus Hospital during 15 months, in comparison with control group of the same number at the same time of the study (1 severely malnourished vs 1 non-severely malnourished patient in the same clinic), the severe malnutrition was based on the Z-Score < -3 SD. Results: In the study group: 44 patients (21 boys, 23 girls). In the control group: 44 patients (22 boys, 22 girls). All the following results are significant utilizing P value method for analysis. The rural habitation (94.2% vs 43.1%), the age < 18 months (85.9% vs 45.2%), to be the last infant in the family (78.5% vs 25.3%), the high number of children in the family (3.8 per family vs 3.1), the low age for the mothers (25.02 years vs 29.32) and the father (30.9 years vs 37.2), the illiterate for fathers (25% vs 4%) and mothers (34% vs 20.4%), there was not significant difference regarding the fathers and mothers work in the two groups. Conclusion: This first study in Syria demonstrates the risk factors of hospitalized severe malnutrition children and infants: the low ages, the rural habitation, the low educational level and age for mothers and fathers, the high number of children in families.

**P0930**

**Title:** Cord Blood Leptin and Fetal Growth

Mandana Rafeey 1, Elahe Ouladshahemadarek 2, Nadereh Rashtchizadeh 3, Ali Gorbanighjoo 3, Farzin Sheikh Monazah 4

1) Liver and Gastrointestinal Diseases Research Center & Drug Applied Research Center (DARC), Tabriz University of Medical Sciences, Tabriz, Iran
2) Alzahra Research Center, Tabriz University of Medical Sciences, Tabriz, Iran
3) Drug Applied Research Center (DARC) - Biotechnology Research Center, Tabriz, Iran
4) Tabriz University of Medical Sciences, Tabriz, Iran

**Summary:**

Introduction: Leptin is a protein secreted mainly by the adipocyte in proportion to fat mass. The serum leptin concentration reflects the amount of adipose tissue in the body and has potential role on the fat deposition in the fetus. In the present study, we investigated whether umbilical and maternal serum leptin concentrations correlate with fetal growth. In addition, we determined the relationship between leptin concentration in the maternal and cord blood. Study design: We studied 100 newborn infants (48 female and 52 male; gestational age, 34-40 weeks) and their mothers at Alzahra hospital in Tabriz city. Serum leptin concentrations were measured by ELIZA and linear regression analysis was used to evaluate correlation. Results: 100 infants were included in the study (mean gestational age, 38.5 ± 1.60 weeks). There were no significant correlations between maternal serum leptin levels and neonatal birth weights (r=0.162, p=0.054) but there was correlation with neonatal gestational ages at birth with LMP method (r=-0.211, p=0.003). Cord blood leptin levels were correlated with neither maternal body weights nor maternal body mass index at birth (r=0.093, p=0.180 r=0.056, p=0.290; respectively). There was no correlation between leptin levels in maternal serum and umbilical cord serum (r=0.11, p=0.459). We observed highly significant correlations between umbilical serum leptin levels and both neonatal birth weights (r=0.278, p<0.003) and gestational ages at birth (r=0.2, p=0.023). We found correlation between cord leptin and neonatal fat mass (r=0.178, p=0.038). Conclusion: In summary, we have shown that the association between umbilical serum leptin and birth weight in this and other studies suggests a pivotal role of fetal leptin in regulating fetal growth and development.

**P0933**

**Title:** Clinical, Anthropometric and Laboratory Characteristics of Patients with Glycogenosis.

Marcia Regina Banin 1, Adriana M A De Tommaso 1, Maria Angela Bellomo-Brandão 1, Gabriel Hessel 1

1) UNICAMP, Capinas, Brazil

**Summary:**

OBJECTIVE: Describe clinical and laboratory characteristics in the admission and evolution of patients with glycogen storage disease. METHODS: Twenty-two patients had participated in this descriptive and longitudinal study, 11 (50%) female. The data file consisted of admission information: clinical features, weight, height, body mass index (BMI) and laboratory exam: heamogram, hepatic enzymes, total cholesterol and fractions, triglycerides, and glucose levels. RESULTS: The mean age at diagnosis was 13.6 months (range: 0.1-63 months) and the mean age at the time of the study was 8.5 years (range: 0.1-27 years). The most common symptoms were diarrhea, vomiting, and abdominal pain. The mean body weight was 15.6 kg (range: 4.6-34.8 kg) and the mean height was 96 cm (range: 68-126 cm). The mean BMI was 13.7 kg/m² (range: 5.3-21.4 kg/m²). The most frequent laboratory abnormalities were elevated liver enzymes and increased triglycerides. CONCLUSION: Glycogenosis is a rare disease that requires multidisciplinary care. The clinical and laboratory characteristics of our patients were similar to those described in the literature.
erides, glyceremia, uric acid, urea and creatin, the following phases were: 1 (admission), 3 (12 months of evolution) and 7 (36 months of evolution).

The anthropometric data, hepatic enzymes and mentioned tests were compared during 2 moments: admission and last appointment of each patient. The score Z was utilized to evaluate the weight and height of patients, considered if the standard deviation was under 2. The growth velocity was calculated among the second and first consult and the last and the penultimate consult. The adherence percentage was determined by the appointment absence percentage: Good: absenteeism minor 20%; regular: absenteeism major 20% and minor 40%; bad: absenteeism major 40%. RESULTS: The mean time of follow-up was 105 months. The most frequent initial clinical manifestations were: hepatomegaly in 21 (95%), protuberant abdomen in 19 (86%), doll face in 14 (64%), diarrhea in 10 (43%) and history hypoglycemia in 8 (36%). In the admission the deficit of the weight to age was 26% (5/19) and height to age was 35% (7/20), initial biochemical tests showed elevation of hepatic enzymes, hypercholesterolemia, hypertriglyceridemia, hypoglycemia. There was no statistical difference among the score Z weight to age, score Z height to age, BMI and laboratorial tests of admission within 12 and 36 months. Significant differences were observed in BMI, hepatic enzymes, glyceremia and triglycerides between the first and the last appointments, opposing uric acid and cholesterol exam results. There was difference significative of the growth velocity among the first and second versus the penultimate and the last consult. The adherence percentage was considered good in 64%. CONCLUSIONS: The most frequent clinical manifestations were protuberant abdomen, hepatomegaly, elevation of triglycerides and cholesterol, and glyceremia reduction. In the evolution, there wasn't difference statistic in the anthropometric parameters, but there was improvement tendency on the growth velocity. The treatment has improved the metabolic derangement

P0935

Title:
METABOLIC SYNDROM PREVALENCE AND THEIR ASOCIATED RISK FACTORS IN OBESE OR OVERWEIGHED PEDIATRIC PATIENTS

FARIAS SAENZ MACARENA 1, SOSA PATRICIA 1, GUISANDE SILVINA 1, PATRICIA CAGLIO 1, TOCA MARIA DEL CARMEN 1
1) Hospital Alejandro Posadas, Buenos Aires, Argentina

Summary:
Introduction: Obesity (Ob) is the most prevalent transmissible chronic disease which plays a key role in Metabolic Syndrome (MS). An early diagnosis and prevention will reduce further disease risk when adult. Objective: to define metabolic syndrome prevalence and the risk factors associated to overweight or obese children. Population: Patients from 2 to 16 years of age derived to the Infant Nutrition Department of Posadas Hospital, diagnosed with overweight and obesity between June 2007 and January 2008. Patients with a secondary were obesity excluded. Materials and Methods: Descriptive, prospective and transversal research. Statistical Method: Fisher Test (p<0.05). MS defined according to ATP III, under the following variables: age, sex, birth weigh (BW), weight gain age, pathological background, family-related cardiovascular risk (stroke, high blood pressure, DBT, Ob, hyperlipidemia). Physical examination: weigh, hight, waist perimeter (according to SAP –Argentine Pediatrics Society- standards). Laboratory: transaminasas, basal glucemia, triglycerides, HDL, LDL. All patients underwent HOMA (Hyperinsulinism ∼ a 3,5), and those with pathological results needed IGT. Hepatic echografy. Results: 99 patients: 47,4% female, 52,6% male. Average age 117,2 months (sd 34,07). 7,07% with OW and 92,93% with Ob. 41,4% of patients were diagnosed with MS. 4,8% had OW and 95,2% Ob. Average weigh gain age-48,7 months (sd 30,97). BW: 80% appropriate, 10% low, 10% high. Most frequent pathology: BOR 29,27%. Family background: AMS 9%, arterial hypertension 70,73%. DBT 53,66%,Ob 90%. Hyperlipidemia 46,34%. Physical examination: waist perimeter over Pc 95 100% (p 0,066). arterial hypertension 58,54% (p 0,000). Acantosis 75,61% ( p 0,043). Laboratory: normal basal glucemia 100% and abnormal hepatogram en 17,5% (p 0,107), increased triglycerides 90,24% (p 0,000). Decreased HDL 68,42% (p 0,000). Hyperinsulin was found in 56,1% (p 0,003). 78% patients underwent IGT, all with normal results. Hepatic echografy in 78% with an increased ecogenicity in 28,13%. Conclusions: Increased SM prevalence was found in our group of study (41,4%). The most significant causes were family-related cardiovascular risk factor, arterial hypertension found during physical examination, and under laboratory: abnormal results in triglycerides, HDL and hyperinsulin. Nor glucose intolerance neither type 2 diabetes were detected

P0936

Title:
Long term outcome and survival of pediatric short bowel syndrome on parenteral nutrition. A single-center experience in Argentine.

María I. Martínez 1, Marcela Dalleri 1, Marcela C. Fabeiro 1, Marina S. Prozzi 1, Patricia Barcellandi 1, Adriana Fernández 1
1) Servicio de Nutrición. Hospital de Niños Sor María Ludovica, La Plata, Argentina

Summary:
Paediatric short bowel syndrome (SBS) is a chronic condition associated with significant morbidity and mortality. Lately advances in treatment improved outcome of the disease. Objective: to analyze long term outcome and survival of patients (ptes) with SBS secondary to massive small bowel resections. Population and methods: retrospective study that included 52 ptes followed in our institution since 1985. Inclusion criteria: residual bowel length (RBL) less than 40cm. Two groups analyzed: G1:27 ptes admitted during the period from 1985-1999 and G2:25 ptes treated between
PLASMA LEVELS OF ACYLATED GHRELIN AND LEPTIN IN HEALTHY CHILDREN. PRELIMINARY ANALYSIS

Maria Inês A. Wilasco 1, Cristina T. L. Dornelles 1, Rafael L. Maurer 1, Carlos O. Kieling 1, Helena A. S. Goldani 1, Themis R. Silveira 1
1) Hospital de Clínicas de Porto Alegre, Porto Alegre, Brazil

Summary:
Objective: Leptin and ghrelin are hormones related to regulation of food intake and consequently body weight control. Normal values of these hormones are subject to a great variability as has been described so far. Due to the lack of studies regarding serum levels of acylated ghrelin and leptin in young children, this study aimed to assess these two hormones and compare with body mass index (BMI) in healthy children aged 2-10 years old. Methods: Cross-sectional study evaluated 57 children aged 24 -120 months old with weight-for-height and BMI-for-age values within –2.0 and +2.0 z-scores according to WHO standards and reference (2007). Children were enrolled from a population referred to minimal surgical procedures and healthy otherwise. Number of children from the age groups was: 24 - 48 months, n=12; 49 - 84 months, n=26; and 85 - 120 months, n=19. Blood samples were collected following a minimum of 3-hours fasting period. Acylated ghrelin and leptin concentrations were assessed by ELISA commercial kit (Linco Research, St Charles-MI, USA). Results: Overall mean age was 71 ± 25 months, 29 boys (51%). Mean value of BMI was 15.3 ±1.3 Kg/m² (range 12.8 – 18.3 Kg/m²). Median (25-75% quartiles) values of acylated ghrelin and leptin were 268.9 pg/ml (161.3 – 389.4) and 1.50 ng/ml (1.21 – 2.55), respectively. There was a significant positive correlation between leptin levels and age (r=0.425; p<0.001) whereas the correlation between ghrelin levels and age had a weak negative correlation (r=-0.288; p=0.03). There was a significant positive correlation between leptin levels and BMI (r=0.5; p<0.001) and a non-significant negative correlation between ghrelin and BMI (r=-0.137; p=0.311). Conclusions: Increased circulating levels of leptin were positively correlated with age and body mass index in children, corroborating the literature data so far. On the other hand, ghrelin seems to not follow the same trend. This study might be helpful to provide data for the standardization of ghrelin and leptin serum levels in healthy children.

Effect of long-chain polyunsaturated fatty acids supplementation at different levels on the fatty acid composition of plasma, intestinal mucosa, liver, brain and retina in piglets

Maria Ramirez 1, Elena Oliveros 1, Alejandro Barranco 1, M Luisa Jimenez 1, Margaret H Dohnalek 2, Ricardo Rueda 1
1) Discovery Technology R&D, Abbott Nutrition, Granada, Spain 2) Discovery Technology R&D, Abbott Nutrition, Chicago-IL, USA

Summary:
Objectives: To study the fatty acid composition of plasma and several tissues in piglets fed three formulas with marginally low (0.15%), low (0.2%) or medium content (0.35% of total fatty acids) of docosahexaenoic acid (DHA), following the recommendations in J Pediatr Med 2008; 36: 5-14 (at least 0.2% as DHA and not exceeding 0.5% of total fatty acids). Arachidonic acid (AA) was also present in the study formulas. Methods: Fifty-six piglets (3-4 days-old) were paired by weight, litter and sex, and divided into four groups: three experimental groups (n=16), and a reference group of piglets that were sacrificed at the beginning of the study (n=8). The animals in the three experimental groups were fed formula 1 (0.2% DHA, 0.4% AA), formula 2 (0.15% DHA, 0.4% AA) or formula 3 (0.35% DHA, 0.6% AA) for 18 days, with the first three days considered as adapting period. Animals were sacrificed at wk 1 (n=8) and wk 2 (n=8 per group) after the adapting period. Two groups of piglets fed sow’s milk and age-matched to formula groups (n=8) were also studied. Fatty acid compositions were measured by gas-liquid chromatography. Statistical methods: one-way ANOVA
and pair wise comparisons using Bonferroni’s correction for 9 groups, the reference group, and the eight time-group combinations. Results: The fatty acid composition of plasma, intestinal mucosa and liver reflected the fatty acid composition of study diets: lower contents of 14:0 and 18:3 and higher contents of DHA and AA in group 3 than in groups 1 and 2. Soy’s milk fed group had higher content of 16:0, 16:1, AA and 22:5n-3 and lower content of 18:1, 18:2 and DHA than formulas. Differences among formula groups were not reflected in neural tissues. There were no significant differences on the percentage of DHA or AA in brain (DHA mean±SD, groups 1, 2 and 3 respectively: 9.32±0.32, 9.14±0.17, 9.15±0.54, and AA: 8.52±0.34, 8.28±0.48, 8.25±0.59) and in retina (DHA: 16.46±0.76, 16.57±1.00, 16.89±1.45 and AA: 9.31±0.15, 9.33±0.35, 9.46±0.29). Conclusion: Differences in fatty acid content of diets are reflected in plasma, liver and intestinal mucosa but not in neural tissues. There is no difference in feeding DHA at levels between 0.15% and 0.35% on brain DHA content. A small non-significant difference was found in the retina that might influence tissue functionality although it should be further evaluated.

P0939

Title: Phospholipid content in starter infant formulas

Angela Santos 1, Elena Oliveros 1, Maria Ramirez 1, Margaret H Dohnalek 2, Ricardo Rueda 2
1) Discovery Technology R&D, Abbott Nutrition, Granada, Spain 2) Discovery Technology R&D, Abbott Nutrition, Chicago-IL, USA

Summary

Objective: To compare the content of phospholipids and subclasses in a series of starter infant formulas from different brands and countries and to compare these results with the human milk data from the literature.

Methods: Twenty-six commercially available starter infant formulas and a prototype were analyzed. The prototype was formulated to contain phospholipids from milk origin, in concentration close to those present in human milk. Phospholipid content was measured following a validated method. Powder infant formulas were delipidated with acetone washes, and the remaining lipids were extracted with several mixtures of chloroform:methanol of increasing polarities. Aliquots of the lipid extracts were digested with perchloric acid and hydrogen peroxide to release phosphorous that was measured spectrophotometrically as free phosphorus. Total phosphorus was converted to PL by a conversion factor taking into account molecular weights. PL subclasses, phosphatidylcholine (PC), phosphatidylethanolamine (PE), phosphatidylserine (PS) and sphingomyelin (SM), were analyzed in the lipid extract by HPLC.

Results: In order to compare our data to those from mature human milk, all the amounts are expressed per 100 mL reconstituted formula, following the manufacturer’s instructions. All the infant formulas analyzed contained more PL than reported for human milk (human milk, reference values from the literature, 2.5-81, and formulas, 5.5-96.5 mg PL/100 mL). PC accounted for most of the PL content in the formulas (2-47 mg/100 mL) whereas in human milk the major PL class is SM followed by PC and PE. Most of the formulas contained less than 7 mg SM/100 mL except two and the prototype, that approached the content in human milk (13 mg/100 mL). The content of PS was very low in all but three of the formulas; the prototype contained at least twice the amount present in the other formulas.

Conclusion: Starter infant formulas contained PL in content close or higher than human milk. However, the distribution of PL subclasses in infant formulas differed from human milk predominating PC instead of SM. Only three formulas contain SM and PS in an amount similar to human milk. The higher contents of SM and PS were found in the formula prototype.

P0940

Title: Amount of water and weaning food given to breastfed children in Guinea Bissau is much lower than expected. Does breastfeeding protect against negative effect of early introduction of water and weaning food?

Marianne S Jakobsen 3, Morten Sodemann 3, Sidu Biai 1, Peter Aaby 2
1) Bandim Health Project, Bissau, Guinea Bissau 2) Statens Seruminstitut, Copenhagen, Denmark 3) Odense University Hospital, Odense, Denmark

Summary

Objective: To investigate the quantity of water and weaning food given to infants and young children in Guinea Bissau, West Africa. In Guinea Bissau breastfeeding rates are high and early introduction of water and weaning food common. However, promotion of exclusive breastfeeding does not reduce mortality. This could be due to protective effect of breastfeeding during introduction. Method: A subgroup of 190 children (5 days to 2 years of age) participating in a breastfeeding study at the Bandim Health Project was included. A health assistant from the project observed child care in the home for 10 hours in the daytime. All intakes were recorded and the child was weighed during and after a meal to quantify it. Due to local traditions observations during nights was not possible. Instead mothers (often illiterate) marked numbers and types of meals given during the night on a paper with symbols. Results: 134 (70.5%) were less than 6 months. Except for 3 children (more than 1 year) all were breastfed. A total of 92 (48.2%) received water during observation (median intake 8 g/10 hours (25-75% percentile 5-30g/10 hours)). Only 11 of the 45 children between 1 and 3 months received water and none of the 14 children less than 1 month. Between 4 and 6 months 47.5% received water (median intake 20 g/10 hours (25-75% percentile 14-30g/10 hours)). Only 10 of 39 children between 3 and 4 months received weaning food (median intake 179.5 g
(25-75% percentile 153-206g/10 hours)). Infants less than 3 months were breastfed 5-6 times during daytime and older children 3-4 times. During nights all children were breastfed 7-8 times. Conclusion: Although early introduction is common it is only given in small amounts and not on a daily basis. Thus water and weaning food are supplements and do not replace breastmilk. This could explain why mortality is not reduced by promotion of exclusive breastfeeding. Breastfeeding seems to be protective against the potential infections due to early introduction of water and weaning food.

P0941

Title:
Risk factors associated to breastfeeding and weaning of infants enrolled in daycare centers in São Paulo, Brazil

Marina Borelli Barbosa 1, Domingos Palma 1, Semiramis Martins Álvares Domene 2, José Augusto de Aguiar Carrazedo Taddei 1, Fábio Ancona Lopez 1
1) UNIFESP – Universidade Federal de São Paulo/Escola Paulista de Medicina. Disciplina de Nutrologia/Departamento de Pediatria, São Paulo, SP, Brazil 2) PUC-Campinas/ Centro Ciências da Vida, Faculdade de Nutrição, Campinas, SP, Brazil

Summary:
Objective: to evaluate risk factors associated to weaning of infants enrolled in daycare centers. Methods: analytical cross-sectional study comprising 56 children aged 9-18 months in 5 daycare centers of São Paulo. A pre-tested questionnaire was applied to mothers of these infants including questions on demographics, social economics, gestation and birth, illness, breastfeeding, complementary feeding (when/how new foods were introduced) and children activities in daycare centers. Factors associated to early weaning and short breastfeeding duration corresponding to the variable defined as the difference between exclusive breastfeeding period and total breastfeeding period were determined by bivariate analyses. Model of conceptual hierarchical multivariate analysis (logistic regression) was applied. Results: The average duration of exclusive breastfeeding was 2,3 ± 1,7 months and median 2 months. And total breastfeeding was 5,1 ± 3,7 months and median was 4 months. Early weaning corresponding to 2,7 ± 3,2 months and median 2 months. The reason for introducing complementary feedings in this research was under a pediatrician`s orientation. The introduction of foods by the day care center was later than by the family. The first food offered by the family was tea 2,8 ± 1,8 months followed by water 3,4 ± 2,0 months, powder milk with 3,5 ± 2,2 months, fruit juice with 4,5 ± 1,5 months, fruit with 5,2 ± 1,3 months and soft food for babies with 5,4 ± 1,3 months. By developing hierarchical conceptual model in the multivariate analysis the following independent risk factors for early weaning were determined: family income ≤3 minimum wage (OR3.73;CI95%;1.23-11.34); mother’s age >25 years (OR4.91;CI95%;1.35-17.95); mother living without partner (OR6.42;CI95%;1.28-32.20); use of pacifier before 30 days (OR8.75;CI95%;1.90-40.23). For the variable weaning period, the risk factors for short breastfeeding duration were: to attend public daycare (OR3.20;CI95%;0.77-14.29) and late prenatal start (OR4.13;CI95%;0.70-31.29). Conclusion: Characteristics related to family and to daycare center are risk factors for weaning among institutionalized infants. Therefore, approaching such determinants would be strategic for health and nutrition actions, so as to favor breastfeeding and qualify the daycare center for its role as infant health and nutrition promoter.

P0942

Title:
Clinical features and nutritional status of cystic fibrosis patients at a pediatric referral center in southern Brazil.

Jocemara Gurmini 1, Karin Knabben de Souza 1, Danielle Reis Yamamoto 1, Giovana Stival da Silva 1, Adriana Benavides Carrasco 1, Mário C. Vieira 1
1) Hospital Pequeno Príncipe, Curitiba, Brazil

Summary:
Objectives: The importance of nutritional status in long-term survival and well being of patients with cystic fibrosis (CF) is well documented. There are many factors that affect nutrition of patients with this disorder, many of which are still not fully understood. The objective of this study is to report the clinical experience with cystic fibrosis patients, regarding main gastrointestinal manifestations and nutritional status at a pediatric tertiary hospital in southern Brazil. Methods: The medical records of patients diagnosed as having cystic fibrosis with follow up for more than 6 months at the Hospital Pequeno Príncipe - Curitiba, Brazil were retrospectively reviewed. Clinical information including age at diagnosis, manifestations, occurrence of complications and nutritional status was collected and analyzed. The weight and height/length were analyzed using NCHS/CDC 2000 growth charts and the nutritional status was classified according to The Consensus Report for Pediatric Patients with CF (BOROWITZ, 2002). Results: Thirty-nine patients (22 boys) were included in the study and 32 (82%) of them had pancreatic insufficiency. The mean age at the diagnosis was 16.6 months (0-96), and 29 (74.4%) of the patients were diagnosed in the first year of life. All patients were receiving nutritional supplements (oral or tube feeding) except 3 (7.7%) children in the overweight group and 1 (2.5%) in the obesity group. Three (7.7%) of 36 patients were receiving supplemental enteral feeding for less than 6 months and one of them was still considered as presenting nutritional failure (p<0.05). There was no correlation between frequency of hospital admissions and nutritional status (p>0.05). Nine (23.1%) patients presented with nutritional failure at the last clinical evaluation and 7 (77.8%) of them were diagnosed after 1 year of age. On the other hand, 17 (85%) of 20 patients with acceptable nutri-
tional status were diagnosed during the first year of age. Complications as meconium ileus, liver disease, DIOS and diabetes affected respectively 12 (30.8%), 3 (7.7%), 1 (2.5%) and 1 (2.5%) patients. Conclusion: In spite of routine follow up, multidisciplinary treatment and the use of dietary supplements to improve the nutrient intake, a more aggressive nutritional management should be considered in some patients with CF. In this group, late diagnosis could be one factor contributing to the deterioration of nutritional status.

P0943

Title:
Systematic review on oral zinc for treating diarrhoea in children.

Marzia Lazzerini 1, Luca Ronfani 1
1) Institute for Child Health IRCCS Burlo Garofolo, Triest, Italy

Summary:
Background: Diarrhoea causes around two million child deaths each year. Zinc supplementation could help reduce the duration and severity of diarrhoea. Objectives: To evaluate oral zinc supplementation for treating children with acute or persistent diarrhoea. Search strategy: we searched the Cochrane Infectious Diseases Group Specialized Register, CENTRAL, MEDLINE, EMBASE, LILACS, CINAHL, reference lists, and contacted researchers. Selection criteria: RCT comparing oral zinc supplementation with placebo in children aged 1 month to 5 years with acute or persistent diarrhoea, including dysentery. Data collection and analysis: Both authors assessed trial eligibility and methodological quality, extracted and analysed data, and drafted the review. Diarrhoea duration and severity were the primary outcomes. We summarized dichotomous outcomes using risk ratios (RR) and continuous outcomes using mean differences (MD) with 95% confidence intervals (CI). Where appropriate, we combined data in meta-analyses and assessed heterogeneity. Results: Eighteen trials enrolling 6165 participants met our inclusion criteria. In acute diarrhoea, zinc resulted in a shorter diarrhoea duration (MD -12.27 h, 95% CI -23.02 to -1.52 h; 2741 children, 9 trials), and less diarrhoea at day three (RR 0.69, 95% CI 0.59 to 0.81; 1073 children, 2 trials), day five (RR 0.55, 95% CI 0.32 to 0.95; 346 children, 2 trials), and day seven (RR 0.71, 95% CI 0.52 to 0.98; 4087 children, 7 trials). Few trials reported on severity, and results were inconsistent. No trial reported serious adverse events, but vomiting was more common in zinc-treated children with acute diarrhoea (RR 1.71, 95% CI 1.27 to 2.30; 4727 children, 8 trials). Authors’ conclusions: In areas where diarrhoea is an important cause of child mortality, research evidence shows zinc is clearly of benefit in children aged six months.
Title: Effects of cyclosporine A in hyperzincemia and hypercalprotectinemia

Masayo Ueda 1, Tokio Sugiura 1, Koichi Ito 1, Kyoko Ban 1, Kenji Goto 1, Hajime Togari 1

1) Department of Pediatrics, Nagoya City University, Nagoya, Japan

Summary

Objective: Hyperzincemia and hypercalprotectinemia with systemic inflammation, recurrent infections, hepatosplenomegaly, arthritis, anemia, cutaneous inflammation, and failure to thrive is an extremely rare disease and no therapy is reported. To evaluate the effects of cyclosporine A in hyperzincemia and hypercalprotectinemia in terms of serum cytokine level changes before and after treatment.

Methods: Patient; A 10-year-old girl was admitted suffering from pyoderma gangrenosum, hepatosplenomegaly, anemia that was unresponsive to iron supplementation, persistent inflammation, arthritis, and increased serum zinc. Activity level was poor; she could not walk alone and exhibited moderately impaired mental development. The level of serum calprotectin was extremely high, therefore, we diagnosed hyperzincemia and hypercalprotectinemia and started cyclosporine A treatment.

Dose of cyclosporine A; Aiming for the optimum dose required to maintain minimum levels of 100 ng/ml of cyclosporine A, initial total daily dose was 5 mg/kg/day.

Measurement of cytokines; Twelve cytokines of IL-1β, IL-1α, IL-2, IL-4, IL-6, IL-7, IL-8, IL-10, IL-12, GMCSF, TNFα, IFNγ, and TNFβ in 25 μL of serum were measured with a ProteoPlex 16-WELL Human Cytokine Array Kit measured before and one year after treatment.

Results; CsA was extremely effective for this patient. Clinical symptoms, particularly the skin lesion and joint pain were alleviated and the dose of prednisolone could be decreased. Quality of life was markedly improved, while she had been unable to walk alone and had required a wheelchair before treatment, she could walk alone and not only go to school but also join a camp after treatment. Hepatomegaly began to resolve, however, splenomegaly persisted. C reactive protein had decreased and anemia had improved but leucopenia persisted. While zinc levels had fallen, calprotectin remained at an extremely high level. IL-6 serum levels had fallen and IL-8 showed a marked reduction after treatment.

Conclusion: Cyclosporine A is effective for hyperzincemia and hypercalprotectinemia. Serum IL-8 may be useful in assessing the therapeutic effects of cyclosporine A in hyperzincemia and hypercalprotectinemia.
Neto 1, Mauro Batista de Morais 1
1) Federal University of São Paulo (UNIFESP), São Paulo, Brasil

**Summary:**
Objective: Evaluate anthropometry and cumulative corticosteroids exposure in children and adolescents with autoimmune hepatitis. Methods: 37 children and adolescents with auto-immune hepatitis were studied. Weight and height were measured and Z score for age/height were calculated. Sexual maturity was evaluated by the Tanner stage. Accumulation of corticosteroids was determined based on the total lifetime exposure for each subject through medical records. Results: Most of the subjects were females (83.3%). Score Z for age/height for females (-0.5±1.2) and males (-0.9±1.2) had no statistically significant difference (p=0.377). A lower Z score for age/height relation (< -2.0 standard deviation) was found in 3/37 (10.5%) of the patients. All subjects were in their respective pubertal developmental stage. Duration of corticosteroids therapy was 40.4 months for females and 28.4 months for males (p=0.371). Total accumulation of corticosteroids in grams was 14.5±12.3 for females and 13.2±12.9 for males (p=0.813). There was a positive correlation between the duration of corticosteroids and the total accumulation of corticosteroids (r=+0.856; p<0.001). The correlation between the duration of the corticosteroids and the difference in Z score for age/height in the beginning of the therapy and in the study day was r= -0.350; p<0.005. The correlation between the total accumulation of corticosteroids and the difference of score Z for age/height in the beginning of therapy and in the study day was r=0.505; p<0.005. A larger reduction (p<0.005) in Z score for age-for-height was observed in patients that received a cumulative dosage of corticosteroids of more than 10.0 g. Conclusion: A cumulative dosage for corticoids was associated with a higher reduction of Z score for age/height in children and adolescents with autoimmune hepatitis.

P0948

**Title:** Food intake, anthropometry and body composition of children and adolescents with autoimmune hepatitis

Ana Paula Bidutte Cortez 1, Patrícia da Graça Leite Speridião 1, Regina Helena Guedes da Motta Mattar 1, Flávia Calanca 1, Ulysses Fagundes Neto 1, Mauro Batista de Morais 1
1) Federal University of São Paulo (UNIFESP), São Paulo, Brasil

**Summary:**
Objective: Evaluate food intake, anthropometry, body composition and sexual maturity of children and adolescents with autoimmune hepatitis. Methods: 37 children and adolescents with auto-immune hepatitis were studied. A questionnaire was given to evaluate food intake for a 24 hour period. Weight, height and skinfold thickness were measured. Electric impedance was used to evaluate body composition and skinfold (Slaughter formula). Sexual maturity was evaluated by the Tanner stage. Results: Most of the subjects were females (83.3%). Food intake from EER (Estimated Energy Requirement) was above 120% for 32.4% and below 80% for 24.3% of the patients. Most subjects (86.5%) were below 80% of Adequate Intake (AI) for calcium. For sodium 35.1% of patients had ingestion above the Tolerable Upper Intake Level (UL). For carbohydrates, protein and iron, 94.6%, 75.7% and 40.5% of the patients, respectively, were above RDA (Recommend Dietary Allowances). For vitamin A, 43.2% of patients were below -2.0 standard deviation. All subjects were in their respective pubertal developmental stage. A lower Z score for age-height relation (< -2.0 standard deviation) was found in 3/37 (10.5%) of the patients. A Z score for BMC (Body Mass Composition) was greater in females (+0.6±0.8) than males (-0.2±0.6) and the difference was statistically significant (p=0.032). Triceps skinfold was higher in females (19.7±3.3) than males (9.0±2.5) and the difference was statistically significant (p<0.001). There was a positive correlation between the BMC and the perceptual of body fat mass by bioimpedance (r=0.719; p<0.001) and skinfold (r=0.832; p<0.001). Body fat over 30% was found in female patients by bioimpedance (41.9%) and skinfold (45.2%) analysis. There was a positive correlation between the two methods of measuring body fat (r = +0.800; p<0.001). Conclusion: Food intake in children and adolescents with autoimmune hepatitis is unbalanced, especially for calcium, vitamin A, carbohydrates and protein. The females have overweight and more fat mass than males. There was a good correlation between skinfold analysis and bioimpedance.

P0949

**Title:** Impact of nutritional guidance on sodium food intake by children with portal hypertension secondary to chronic liver disease

Lissandra de Santis Basso 1, Regina H M Mattar 1, Patrícia G L Speridião 1, Mauro B Morales 1
1) Division of Pediatrics Gastroenterology, Federal University of Sao Paulo- Paulista School of Medicine, São Paulo, Brazil

**Summary:**
Objective: To evaluate the impact of nutritional guidance on the food intake of patients with portal hypertension secondary to chronic liver disease. Methods: This is a prospective study, in which twelve patients (7 males and 5 females) with portal hypertension were studied, whose ages ranged from 1 year 4 months to 17 years 8 months. To obtain data about food intake, before and after nutritional guidance, the normal daily food intake method, associated to a food frequency questionnaire containing only foods with high sodium level, was used. Results: The initial mean sodium...
intake that was 2954±1323 mg/kg/day, diminished to 1766±738 mg/kg/day (p = 0.002) after nutritional guidance. All patients showed a reduction in sodium consumption after nutritional guidance, but only seven (58.3%) reached levels lower than the upper level of safe intake (UL) according to current nutritional recommendations – the DRIs. It is important to note that only one patient (8.3%) had their sodium intake below the upper level of safe intake (UL), before guidance. A reduction in lipid intake, that changed from 2.0±0.7 g/kg/day to 1.6±0.7 g/kg/day (p = 0.025) was also observed. The adequate lipid percentage in relation to the recommendation was 25.1±8.9% and after nutritional guidance fell to 19.8±9.0%. Conclusion: Nutritional guidance reduces the sodium consumption of patients with portal hypertension secondary to chronic liver disease.

P0950

Title:
Iron intestinal absorption of rats with obstructive cholestasis.

Patrícia G L Speridião 1, Ivan H J Koh 1, Olga M S Amancio 1, Ulysses Fagundes-Neto 1, Mauro B Morais 1

1) Division of Pediatrics Gastroenterology of Universidade Federal de São Paulo - Escola Paulista de Medicina., São Paulo, Brazil

Summary:
Objective: to assess iron intestinal absorption of rats with obstructive cholestasis, based on the hemoglobin mass recovery, iron fecal balance and hepatic iron. Methods: 24 male Wistar rats with 21 days old were studied, which 12 were submitted to bile duct ligation (BDL group), and the other 12 animals, submitted only to a simulated surgical procedure, without bile duct ligation (control group). The study lasted 30 days. At the first 15 days, iron deficiency anemia was induced, and offered an iron-free diet. The next fifteen days, was offered a diet with iron to promote the recovery of the hemoglobin mass and, by the end of the study, all animals were sacrificed and removed a fragment of the liver tissue for analyzing hepatic iron. Food intake was quantified daily. The last 72 hours of the study, their feces were collected to perform each group’s iron fecal balance. Results: The median body weight at the beginning of the study was similar in both groups (50.8 g in control group and 46.9 g in BDL group). By the end of the study, the median body weight of control group rats (196.3g) presented higher (p<0.001) in relation to the BDL group rats (151.7g). The food intake was lower (p=0.003) in BDL group (median = 354 g) was lower than in the control group (401 g). At the end of the period of anemia induction, the mean hemoglobin of both groups were similar: 4.1±0.8 g/dL in control group and 4.5±0.8g/dL in BDL group. The hepatic iron analysis showed higher (p<0.001) levels in control group (86.2 µg/g) than BDL group (67.6 µg/g). Fecal balance presented higher iron quantity in control group (86.2 µg/g) than BDL group (67.6 µg/g). Fecal balance presented higher iron quantity in control group (0.6 µg/g) than BDL group (0.4 µg/g). The percentage of iron intestinal apparent absorption did not showed difference between groups. Conclusion: Iron intestinal absorption is the same in rats with and without obstructive cholestasis; however, the lower recovery in the hemoglobin mass among the animals with obstructive cholestasis suggests the presence of anemia of inflammation.

---

Age (years) Female Male Difference

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Female</th>
<th>Male</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.293</td>
<td>0.313</td>
<td>-0.019</td>
<td></td>
</tr>
<tr>
<td>0.295</td>
<td>0.311</td>
<td>-0.017</td>
<td></td>
</tr>
<tr>
<td>0.296</td>
<td>0.310</td>
<td>-0.014</td>
<td></td>
</tr>
<tr>
<td>0.298</td>
<td>0.310</td>
<td>-0.012</td>
<td></td>
</tr>
<tr>
<td>0.305</td>
<td>0.313</td>
<td>-0.008</td>
<td></td>
</tr>
<tr>
<td>0.318</td>
<td>0.321</td>
<td>-0.003</td>
<td></td>
</tr>
<tr>
<td>0.342</td>
<td>0.335</td>
<td>-0.006</td>
<td></td>
</tr>
</tbody>
</table>

P0951

Title:
The mixture of dietary fiber does not affect growth and intestinal iron absorption in growing rats with iron deficiency anemia

Thabata Koester Weber 1, Karine de Cássia Freitas 1, Olga Maria Silvério Amancio 1, Ulysses Fagundes-Neto 1, Mauro Batista de Morais 1

1) Pediatric Gastroenterology Division, Federal University of Sao Paulo (UNIFESP), Sao Paulo, Brazil

Summary:
Objective: The purpose of this study was to evaluate the effect of a mixture of soluble (60%) and insoluble (40%) dietary fiber towards intestinal absorption of iron, dietary intake and on the growth of rats with iron deficiency anemia. The fecal weight and cecal pH was also evaluated. Methods: Male Wistar rats (n=22) weaned at 21 days were fed with AIN93-G diet without iron for 2 or 3 weeks in order to induce severe iron deficiency
anemia (hemoglobin < 7.0 g/dL). The anemic rats were divided into two groups: (1) Fiber Mixture Group (soy polysaccharide, inulin, resistant starch, arabic gum, fructooligossaccharide and cellulose: “Stimulance” – Support®, manufactured in Brazil) – 100 g of dietary fiber mixture per Kg of diet; (2) Control Group – fed without dietary fiber. All the diets had 30 mg of elemental iron/Kg added to lead them to recovery from iron deficiency anemia. Results: The final hemoglobin values for the Fiber Mixture Group and the Control Group were, respectively: 10.53±1.40 and 10.16±1.10 g/dL. The levels of hepatic iron of dry tissue, in the same order, were: 188.73±42.31 and 172.18±58.02 mcg/g (p=0.454). The apparent iron intestinal absorption, was, respectively: 46.38±16.48 and 47.22±10.23% (p=0.861). The median fecal weight collected in 3 days were: 6.17 g to Fiber Mixture Group and 2.11 g to Control Group (p<0.001). The cecal pH was, in the same order: 6.11±0.59 and 7.07±0.34 (p<0.001). Both groups consumed similar quantities of diet. The changes in weight and in body length were similar in both groups studied. Conclusion: The hemoglobin regeneration, the growth and dietary intake was similar in dietary Fiber Mixture and the Control Groups. The consumption of this dietary mixture has favored increase of fecal weight and decrease of cecal pH.

P0952

**Title:**
Effects of energy density and feeding frequency of complementary foods on total daily energy intakes and consumption of breast milk by healthy, breastfed Bangladeshi children

M Munirul Islam 1, Janet M Peerson 2, Tahmeed Ahmed 1, M Abid Hossain Mollah 3, Kathryn G Dewey 2, Kenneth H Brown 2
1) International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), Dhaka 1212, Bangladesh 2) Program in International and Community Nutrition, Department of Nutrition, University of California, Davis, CA 95616, USA 3) Department of Pediatrics, Dhaka Medical College Hospital, Dhaka 1000, Bangladesh

**Summary:**
Background: Infants older than 6 months of age require complementary food of sufficient energy density in addition to breast milk to meet their energy requirements. Despite the critical importance of appropriate feeding to prevent growth faltering during this particularly vulnerable stage of life, there is little information available on the minimum energy density and feeding frequency of complementary foods that are necessary to ensure adequate energy consumption by healthy, breastfed children. Objective: To evaluate the effects of varied energy density and feeding frequency of complementary foods on energy intake from complementary foods, breast milk consumption and total energy intake from both sources. Methods: During 9 randomly ordered dietary periods lasting 3-6 days each, we measured self-determined intakes of semi-solid cereal porridges and breast milk by 18 healthy, breastfed children 8-11 mo of age who were fed coded porridges with energy densities of 0.5, 1.0 or 1.5 kcal/g, at fixed times 3, 4, or 5 times/day. Complementary food intake was measured by weighing the feeding bowl before and after meals, and ad libitum breast milk intake was measured by test weighing. Results: The mean daily amounts of complementary foods consumed were inversely related to their energy density and positively related to the number of meals/d (p <0.001 for both); energy intakes from complementary foods were positively related to both factors. Breast milk intake decreased slightly, but progressively, with greater energy density and feeding frequency of complementary foods, although total energy intakes (kcal/d) increased in relation to both dietary factors (p <0.001 for both). Conclusions: The energy density and feeding frequency of complementary foods affect total daily energy intake and breast milk consumption by infants. Recommendations can be developed on the appropriate combinations of these dietary factors that are compatible with adequate energy intake, although longer term effects of complementary feeding practices on breast milk intake and duration of breastfeeding need further study.

P0953

**Title:**
Impact of Glutamine, Zinc, and Retinol Supplementation on Cognitive Outcomes in Brazilian Children: A Prospective Randomized, Double-Blind, Placebo-Controlled Trial

Michelle P Kvalsund 2, Paula Pampona 1, Reinaldo B. Oriá 1, Relana P. Fitzgerald 2, Richard L. Guerrant 2, Aldo A. M. Lima 1
1) Federal University of Ceará, Fortaleza, Brazil 2) University of Virginia Center for Global Health, Charlottesville, USA

**Summary:**
Objective: To assess the impact of 12 months of glutamine, zinc, and retinol supplementation, alone or in combination, on long-term cognitive outcomes in a group of children at high risk for chronic childhood diarrhea. Methods: A cohort of 213 children with below median height-for-age z-scores were randomized to 8 treatment arms including: placebo; glutamine; zinc; vitamin A; or combination zinc + glutamine; vitamin A + glutamine; zinc + vitamin A; or zinc + vitamin A + glutamine for 12 months. These children were assessed an average of 4 (range 1.4- 6.6) years after enrollment on cognitive tests including: non-verbal intelligence (TONI), coding tasks (WISC-III), verbal fluency (NEPSY) and verbal learning (WRAML) tests. SPSS (v.16) was used to construct ANOVA univariate models with post hoc Tukey tests to assess differences between groups on cognitive test performance. Results: 167 (78%) of children randomized into a treatment arm completed cognitive testing. Children were a mean age of 8.6 (range 5.1-13.7) years. No significant differences were found between groups on gender, age, birthweight, household income, or maternal education, although total energy intakes (kcal/d) increased in relation to both dietary factors (p <0.001 for both). Conclusions: The energy density and feeding frequency of complementary foods affect total daily energy intake and breast milk consumption by infants. Recommendations can be developed on the appropriate combinations of these dietary factors that are compatible with adequate energy intake, although longer term effects of complementary feeding practices on breast milk intake and duration of breastfeeding need further study.
Objective: To study the impact of our new guidelines on preventing excess weight loss and hypernatraemic dehydration (HD) in breast fed babies. We also studied the impact of it in promoting breast feeding rates. Method: A high incidence of neonatal weight loss and HD was identified in a retrospective audit following which we formulated and implemented our new guidelines on preventing excess weight loss. Our new guidelines included early, frequent weighing of babies (day 3, 5 and 10), identifying at risk mothers and better monitoring and encouraging mothers in community and paediatric ward. A re-audit was done to study the impact of our new guidelines. Results: During the audit period (June 2005 to September 2006) the incidence of weight loss of > 10% was 49/4514 (1.1/100) live births with a mean weight loss of 13.2 % (range 10 to 20). 15/49 (31%) of these babies had HD (sodium level ≥150 mmol/l) with mean sodium level of 153 (range 150-160) mmol/l. 17/49 (34.6%) babies had high urea levels with a mean of 14 (range 6.4-31.9) mmol/l. McNemar test has determined that there is no statistically significant difference as to the age, number of children in the groups, sex and frequency of measuring in the first 4 years. There is a difference between the children consuming cow milk, the one being breastfed and the one using milk formula. The value of Pearson’s X2-test of 5.792 with df 2 is 0.05 and it points to the statistical importance. There is no statistically significant difference in BMI between the children being breastfed and the ones consuming milk formula. McNemar test determined that there is statistical importance that overweight appears at the age of 4 among the children having normal weight for the 1st birthday (the ones consuming cow milk, and the ones being breastfed). Also, McNemar test determined that there is no statistically important relation (0.063) between the overweight at the age of 4 and using formula until the 1st birthday. The limitation of this research is impossibility to precisely estimate social status of the family that can influence to the ability of parents to provide adapted milk formula for their child in case that mother cannot breastfeed the child. Conclusion – The children who do not consume cow milk until their 1st birthday have statistically less chances to have overweight at the age of 4, i.e. BMI>p85. It’s necessary to give complete support to the parents and effectively promote healthy way of child feeding. It’s also very important that pediatricians identify the children with overweight during preschool period, in order to prevent obesity in school age.

**P0954**

**Title: Early Childhood Overweight**

Milena Vukovic 1
1) Dispensary for Children Health Care, Krusevac, Serbia

**Summary**

Objective - To investigate possible difference in BMI between the children at the age 1-4 with different milk feeding in 1st year. Methods - Comparing early feeding mode to BMI at the age 1-4. Statistic analysis performed on random sample consisting of 153 children born in 2003, divided in 3 groups. 60 children breastfed in the 1st year, 33 consumed adapted milk formula, and 60 consumed cow milk starting from the 6th month. Within the sample the stratification according to sex, number of measuring and age was made. To interpret the obtained data the following statistic methods were used: 1-way ANOVA, X2-test, T-test and McNemar-test. Overweight is defined as BMI>p85. A p-value of <0.05 was considered significant. For expressing Z-score BMI 0-3 and 2-5, European growth references in childhood (“Eurogrowth” software) has been used. Results - X2-test shows that there is no statistically significant difference as to the age, number of children in the groups, sex and frequency of measuring in the first 4 years. There is a difference between the children consuming cow milk, the one being breastfed and the one using milk formula. The value of Pearson’s X2-test of 5.792 with df 2 is 0.05 and it points to the statistical importance. There is no statistically significant difference in BMI between the children being breastfed and the ones consuming milk formula. McNemar test determined that there is statistical importance that overweight appears at the age of 4 among the children having normal weight for the 1st birthday (the ones consuming cow milk, and the ones being breastfed). Also, McNemar test determined that there is no statistically important relation (0.063) between the overweight at the age of 4 and using formula until the 1st birthday. The limitation of this research is impossibility to precisely estimate social status of the family that can influence to the ability of parents to provide adapted milk formula for their child in case that mother cannot breastfeed the child. Conclusion - The children who do not consume cow milk until their 1st birthday have statistically less chances to have overweight at the age of 4, i.e. BMI>p85. It’s necessary to give complete support to the parents and effectively promote healthy way of child feeding. It’s also very important that pediatricians identify the children with overweight during preschool period, in order to prevent obesity in school age.

**P0955**

**Title: Breast feeding malnutrition in neonates: A step forward to control the problem**

Vikram Kudumula 1, Amar Asokkumar 1, Yinka Akinsoji 1, Mirajkar V Suresh-Babu 1
1) Lincoln County Hospital, Lincoln, United Kingdom

**Summary**

Objective - To investigate possible difference in BMI between the children at the age 1-4 with different milk feeding in 1st year. Methods - Comparing early feeding mode to BMI at the age 1-4. Statistic analysis performed on random sample consisting of 153 children born in 2003, divided in 3 groups. 60 children breastfed in the 1st year, 33 consumed adapted milk formula, and 60 consumed cow milk starting from the 6th month. Within the sample the stratification according to sex, number of measuring and age was made. To interpret the obtained data the following statistic methods were used: 1-way ANOVA, X2-test, T-test and McNemar-test. Overweight is defined as BMI>p85. A p-value of <0.05 was considered significant. For expressing Z-score BMI 0-3 and 2-5, European growth references in childhood (“Eurogrowth” software) has been used. Results - X2-test shows that there is no statistically significant difference as to the age, number of children in the groups, sex and frequency of measuring in the first 4 years. There is a difference between the children consuming cow milk, the one being breastfed and the one using milk formula. The value of Pearson’s X2-test of 5.792 with df 2 is 0.05 and it points to the statistical importance. There is no statistically significant difference in BMI between the children being breastfed and the ones consuming milk formula. McNemar test determined that there is statistical importance that overweight appears at the age of 4 among the children having normal weight for the 1st birthday (the ones consuming cow milk, and the ones being breastfed). Also, McNemar test determined that there is no statistically important relation (0.063) between the overweight at the age of 4 and using formula until the 1st birthday. The limitation of this research is impossibility to precisely estimate social status of the family that can influence to the ability of parents to provide adapted milk formula for their child in case that mother cannot breastfeed the child. Conclusion - The children who do not consume cow milk until their 1st birthday have statistically less chances to have overweight at the age of 4, i.e. BMI>p85. It’s necessary to give complete support to the parents and effectively promote healthy way of child feeding. It’s also very important that pediatricians identify the children with overweight during preschool period, in order to prevent obesity in school age.

**P0956**

**Title: Breast feeding malnutrition in neonates: A step forward to control the problem**

Vikram Kudumula 1, Amar Asokkumar 1, Yinka Akinsoji 1, Mirajkar V Suresh-Babu 1
1) Lincoln County Hospital, Lincoln, United Kingdom

**Summary**

Objective - To investigate possible difference in BMI between the children at the age 1-4 with different milk feeding in 1st year. Methods - Comparing early feeding mode to BMI at the age 1-4. Statistic analysis performed on random sample consisting of 153 children born in 2003, divided in 3 groups. 60 children breastfed in the 1st year, 33 consumed adapted milk formula, and 60 consumed cow milk starting from the 6th month. Within the sample the stratification according to sex, number of measuring and age was made. To interpret the obtained data the following statistic methods were used: 1-way ANOVA, X2-test, T-test and McNemar-test. Overweight is defined as BMI>p85. A p-value of <0.05 was considered significant. For expressing Z-score BMI 0-3 and 2-5, European growth references in childhood (“Eurogrowth” software) has been used. Results - X2-test shows that there is no statistically significant difference as to the age, number of children in the groups, sex and frequency of measuring in the first 4 years. There is a difference between the children consuming cow milk, the one being breastfed and the one using milk formula. The value of Pearson’s X2-test of 5.792 with df 2 is 0.05 and it points to the statistical importance. There is no statistically significant difference in BMI between the children being breastfed and the ones consuming milk formula. McNemar test determined that there is statistical importance that overweight appears at the age of 4 among the children having normal weight for the 1st birthday (the ones consuming cow milk, and the ones being breastfed). Also, McNemar test determined that there is no statistically important relation (0.063) between the overweight at the age of 4 and using formula until the 1st birthday. The limitation of this research is impossibility to precisely estimate social status of the family that can influence to the ability of parents to provide adapted milk formula for their child in case that mother cannot breastfeed the child. Conclusion - The children who do not consume cow milk until their 1st birthday have statistically less chances to have overweight at the age of 4, i.e. BMI>p85. It’s necessary to give complete support to the parents and effectively promote healthy way of child feeding. It’s also very important that pediatricians identify the children with overweight during preschool period, in order to prevent obesity in school age.
reach statistical significance probably be due to smaller numbers. The urea levels in re-audit group are significantly less (p=0.04) when compared to audit group. New policy also increased the breast feeding rates at the time of discharge from the wards from 76% to 85%. Conclusion: Our new guidelines helped in early detection of breast feeding malnutrition, decreased the incidence of HD and to the contrary increased the breast feeding rates. Early and frequent monitoring is vital to reduce this dangerous but easily preventable problem.

P0956

Title: Varying Presentation of Coeliac Disease in Children

Sabari Loganathan 1, Mirajkar V Suresh-Babu 1, Amar Ashokkumar
1) Lincoln County Hospital, Lincoln, United Kingdom

Summary:
Background: Coeliac Disease (CD) is an immune-mediated enteropathy caused by a permanent sensitivity to gluten in genetically susceptible individuals. A disease previously considered as rare with prevalence of 1:2500, is now recognized to have a prevalence of 1:80-1:300. The classical age of presentation is 6-24 months but now more children present at later age with atypical manifestations. Objective: To determine the pattern of presentation of CD in children in Lincolnshire. Methods: Retrospective case notes review of children diagnosed with CD during 1999 to 2007 in a large District General Hospital which provide paediatric gastroscopy service in Lincolnshire(2nd largest county in England). Patients diagnosed elsewhere and moved to Lincolnshire were excluded in analysis. Results: A total of 72 patients (29 boys; 43 girls) were reviewed. 60 patients had positive biopsy consistent with CD (n=60). All but 2 patients with positive biopsy had negative serology (3%). 11 serology positive patients had normal biopsy (Latent Coeliac) of which 1 patient on follow up developed positive biopsy, 1 patient declined biopsy. The median age of diagnosis was 6 years (10 months -16 years) and mean duration of symptoms was 7.8 months (0-60 months). 40(67%) presented with gastrointestinal (GI) manifestations, 9 (15%) with non GI manifestations and 11(18%) were asymptomatic. In GI group, classical presentation was seen in 6 children (15%) who were <24 months old, 16 (40%) presented with weight loss and GI symptoms and 18 (45%) had mild GI manifestation only, of which 7 had IDDM. In the non GI group, 7(12%) presented with persistent iron deficiency anemia, 11(2%) with Dermatitis herpiformis and 1 with short stature. In the asymptomatic group, 4 have IDDM, 2 have Down’s syndrome, 1 has William’s syndrome, 1 has Turner’s syndrome and 3 were siblings of CD.9 patients (15%) had first degree relative with CD. A variety of autoimmune disorders were seen in these children. Conclusion: This review confirms the extremely polymorphic nature of CD and the change in clinical presentation in a district hospital setting. A high index of suspicion is necessary in all age group of children as CD can present with atypical symptoms and can be silent. Sibling screening should become a routine. Early detection is vital to prevent complications. General Practitioners and Paediatricians need to be made aware of its changing presentation.

P0958

Title: Pattern of infant nutrition in Saudi Arabia

Mohammad I El Mouzan 1, Ahmad A Al Omer 3, Mansour M Qurashi 2, Abdullah A Al Salloum 1, Abdullah S Al Herbish 1
1) King Saud University, Riyadh, Saudi Arabia 2) Al Yamama Hospital, Riyadh, Saudi Arabia 3) Riyadh Medical Complex, the Children’s Hospital, Riyadh, Saudi Arabia

Summary
Objective: To determine the pattern of nutrition of infants in Saudi Arabia in the 21st century. Methods: A nationwide nutritional survey of a sample of Saudi households determined by multistage probability sampling technique. The study sample covers urban and rural settlement in each of the 13 regions of the kingdom. A validated questionnaire was administered by interview to mothers in the sample. In order to minimize recall bias, the survey was restricted to children less than three years of age. Results: There were 5339 children in the sample, of which 4889 received breast milk at birth indicating a prevalence of 91.6%. Information on the age of introduction of bottle feeding was available for 4260 infants less than two years of age. Bottle feeding was introduced by one month of age to 2174/4260 (51.4%), to 2725/4260 (64.0 %), 3390/4260 (80.0%), and to 3831/4260 (90%), by 2, 4, 6 month of age respectively. The majority of infants 3870/4787 (80.8 %) were introduced to “solid foods” between 4-6 months of age, followed by 680/4787 (14.2%), 200/4787 (4.2%), and 37/4787 (0.7%) at the age 7-12, 0-4, and more than 12 months respectively. Finally whole cow’s milk was started after the age 12 months in only 256/425 (60.2%), between 6-12 month in 91/425 (21.4%) and below 6 months of age in 78/425 (18.4%). Conclusions: The high prevalence of breastfeeding at birth indicates the willingness of Saudi mothers to breastfeed. However, early introduction of bottle feeding is a major barrier to the continuation of breast feeding. In addition while the age at introduction of “solid food” is reasonable, whole milk feedings are started earlier than the current recommendations. Further support and education of mothers are still needed.

P0959

Title: Prevalence of breastfeeding in Saudi Arabia
Mohammad I El Mouzan 1, Ahmad A Al Omer 3, Mansour M Qurashi 2, Abdullah A Al Salloum 1, Abdullah S Al Herbish 1
1) King Saud University, Riyadh, Saudi Arabia 2) Al Yamama Hospital, Riyadh, Saudi Arabia 3) Riyadh Medical Complex, the Children’s Hospital, Riyadh, Saudi Arabia

Summary
Objective: To determine the prevalence of breastfeeding in Saudi Arabia in the 21st century. Methods: Multistage probability sampling of the Saudi households. The study sample covers urban and rural settlement in each of the 13 regions of the kingdom. A validated questionnaire was administered by interview to mothers in the sample. In order to minimize recall bias, the information was restricted to the feeding of children less than three years of age. Results: There were 5339 children in the sample, of which 4889 received breast milk at birth indicating a prevalence of 91.6%. Of the 4889 children, only 1134 (23.2%) were started on breastfeeding less than one hour after birth, whereas in 1334 (27.3%), 1048 (21.4%), and 1373 (28.1%) the start of breastfeeding was delayed between 1-3, 3-6, and more than 6 hours after birth. Bottle feeding was started in the first month of age in about 50% of the infants. Finally, according to mothers, the commonest reason for not breastfeeding was insufficient quantity of milk. Conclusions: The high prevalence of breastfeeding at birth indicates the willingness of Saudi mothers to breastfeed. However, the late start of breastfeeding and early introduction of bottle feeding are major barriers to the continuation of breast feeding in Saudi Arabia. Support and education of the mothers are still needed.

P0961
Title: ASSESSMENT OF THE KNOWLEDGE REGARDING THE CELIAC DISEASE, TREATMENT AND SURVEILLANCE OF A GLUTEN-FREE DIET AMONG THE PARTICIPANTS OF THE BRAZILIAN CELIAC ASSOCIATION-SANTA CATARINA (ACELBRA/SC)
Chiristine Prim de Pellegrin 1, Maria Marlene de Souza Pires 1, Mônica Chang Wayhs 1, Marileise Obelar 1, Rovana Paludo Toyama 1, Clarissa Cassol 1
1) Universidade Federal de Santa Catarina, Florianópolis, Brasil

Summary
Introduction: The celiac disease (CD) is an inflammatory chronic enteropathy of the small intestine derived from the permanent gluten intolerance which happens in individuals genetically susceptible. Objective: Verify the knowledge of the ACELBRA/SC’s members about the CD, diet adhesion, identification of main difficulties in the treatment maintenance. Method: 506 letters with a questionnaire were sent to the associated members of ACELBRA/SC being 145 members eligible for the study. Results: The highest prevalence was of women (79%) in a proportion of 1 man to 3.7 women. Among the answers about CD and its treatment: 81% told the small intestine was the main affected organ. 74.5% say that this disease has a genetic predisposition; 98% consider the diet to be strictly gluten-free; 96.5% agree that the gluten intolerance is permanent; 97% confirm the presence of intestinal lesion even for asymptomatic individuals who keep having gluten intake; and 92.5% know that gluten is a protein. Regarding the substitution of cereals, the right choices vary from 97 to 98%. The rye (10.5%) and oatmeal (7%) were the cereals most mistaken regarding the presence of gluten in its composition. 17% of the participants affirmed they don’t follow the gluten-free diet and 82% said they follow it strictly. It was noticed that both the group which follow the diet and the other which don’t accept it completely reported they have felt better off after the adoption of the therapeutic measures proposed. The biggest difficulties regarding the full acceptance of the diet were the availability of gluten-free foods and the financial difficulty to buy them. 72% of parents consider the diet easy to be followed, 56% of them agree that it is tiresome and expensive. Conclusion: The present study demonstrates that the level of information is not the only one which is responsible for the gluten-free diet fulfillment. It is also necessary the clarification of the society in order to promote social acceptance and the development of individual responsibility which must be shared with every one avoiding this way, the focus on the person who developed the CD only.

P0963
Title: PREVALENCE OF OVERWEIGHT AND OBESITY IN SCHOOLCHILDREN OF SEVEN TO TEN YEARS OF AGE IN THE CITY OF FLORIANÓPOLIS
César Figueiredo Forte 1, Nelson Blank 1, Maria Marlene de Souza Pires 1, Marileise Obelar 1, Mônica Chang Wayhs 1, Rovana Paludo Toyama 1
1) Universidade Federal de Santa Catarina, Florianópolis, Brasil

Summary
Introduction: The obesity is regarded as one of the most common health problems occurring worldwide in addition it is considered a risky factor to the development of non-transmissible chronic diseases. Objective: Evaluate the prevalence of excessive weight and risky factors in schoolchildren. Method: A prevalence study of base population, in a sample of 640 children belonging to a population of 23.085 children aged from 7 to 10, enrolled in public and private schools of the city of Florianópolis/S/C. It was used a variable outcome of Body Mass Index (BMI) for children according to the International Obesity Task Force (IOTF) and World Health Organization (WHO). The dependable variables were obtained from a questionnaire
answered by the children. Parametric tests were used for differences of proportion. The association between overweight and obesity with their several variables was assessed by the odd ratios of prevalence with a confidence interval of 95%. The relative importance of the studied factors regarding the risk of a child’s developing overweight and/or obesity was observed by the adjustment of the multivaried logistic regression models. Results: The prevalence of obesity was 8.2% and overweight 17.1%. In the stratification by school type and body weight excess among students, the obtained results were 20.8% for public schools and 35.8% for private schools. It was also observed that the factors which were adjusted to the multivaried logistic models for obesity, despite the fact of the child is or not on a diet, was the male gender, the overweight and/or parents obesity, the consume of high-fat snacks 4 to 7 times a week and television watching for more than 4 hours a day. Conclusion: The total prevalence for weight excess was 25.3%. Among the risky factors which were associated with the highest prevalence of overweight stand out: parents’ BMI, the habit of watching TV for more than 4 hours a day, the intake of snacks high in saturated fats more than 4 times a week and the decreased frequency of physical education apart from school.

P0964

Title:
EVALUATION OF GROWTH AFTER LIVER TRANSPLANTATION IN CHILDREN

Cigdem Arikan 1, Murat Cakir 1, Masallah Baran 1, Murat zeytunlu 2, Murat Kilic 2, Sema Aydogdu 1
1) Ege University Department of Pediatric Gastroenterology Hepatology and Nutrition, Izmir, Turkey 2) Ege University Organ Transplantation and Research Center, Izmir, Turkey

Summary:
Objective: Liver transplantation is now accepted as a curative treatment for children with end stage liver disease. It is hoped that successful transplantation will result not only in long term survival but also in normal growth and development for children. Therefore; we aimed to determine the influence of liver transplantation (LT) on long-term growth, and factors that might effect post-LT growth in all children who underwent transplantation at a single center, with survival > 6 months and adequate follow-up. Methods: Data were collected retrospectively from the records of 80 children (46 male, median age 48 months) who survived or followed more than 6 months after LT in Ege University between March 1997 and December 2007. Standardized height SD score (Z score) and weight SD score (Z score) were computed for each patient at the time of LT and 6th months, 1st, 2nd, 3rd, 4th and 5th years of LT. The variables assessed were (i) age at LT, (ii) gender, (iii) diagnosis and PELD score (iv) type of donor and immunosuppressive, (v) complications and (vi) total prednisone dose. Results: Data were obtained from 80 children (35% were < 2 yr old age, 32.5% were cadaveric donor). Younger children (<2 yr) were more growth-retarded especially weight SD score at the time of LT, but showed higher catch-up growth rates and their final height and weight SD score were greater than that of older children. There was no difference between the gender, types of immunosuppressant used and types of donor on the final height and weight SD score. Increments in weight SD score were significantly higher in patients with biliary diseases that metabolic disease (Ã weight SD were 1.99 vs. 0.88, p<0.05) and, the results were not significant in height SD score (Ã height SD were 1.3 vs. 0.91, p>0.05). Catch-up growth was delayed in patients receiving totally more than 1000 mg steroids, and final height SD score was lower especially in patients receiving more than 2000 mg steroids. PELD score does not have any impact on long term growth. Presence of surgical complications or rejection episodes decreases height growth velocity especially in the early period. Discussion: Long-term improvement of growth is usually obtained especially within the two years after liver transplantation in most children, and older age (> 2 yr) at the time of LT, exposure to high dose steroids, diseases other than biliary diseases and presence of surgical complications or rejection episodes contributes to this improvement.

P0966

Title:
CORRELATION BETWEEN SUBFASCIAL FAT LOSS AND SERUM INSULIN LEVELS IN OBESE TEENAGERS DURING A 4-WEEK WEIGHT REDUCTION PROGRAM

Narumon Densupssoontorn 1, Pipop Jirapinyo 1, Supawadee Likitmaskul 1, Renu Wongarn 1, Nuchnoi Thamonsiri 1, Pipat Chiewvit 1
1) Siriraj Hospital, Mahidol University, Bangkok, Thailand

Summary:
Narumon Densupssoontorn, MD1, Pipop Jirapinyo MD1, Supawadee Likitmaskul MD2, Renu Wongarn, BA1, Nuchnoi Thamonsiri, BSc1, Pipat Chiewwit, MD3 1Division of Nutrition, 2Division of Endocrinology, Department of Pediatrics; 3Department of Radiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand Objective: To determine the association between reductions of fat from subcutaneous, intermuscular and subfascial compartments at thighs and improvement of serum insulin level. Methods: A longitudinal, clinical intervention in restriction of caloric intake and in enhancement of exercise was studied in 20 healthy, overweight teenagers (age: 10-15 y, body mass index (BMI): 26-40 kg/m2). Fat distribution parameter (by dual-energy x-ray absorptiometry and computerized axial tomography at thigh), serum insulin, body weight were assessed at baseline and after 4 weeks. Initial oral glucose tolerance test was also studied. Results: One of twenty subjects was diagnosed as type 2 diabetes at baseline and after 4 weeks. Initial oral glucose tolerance test was also studied. Results: One of twenty subjects was diagnosed as type 2
diabetes. Among all, 8, 3, and 4 subjects had hypercholesterolemia, hypertriglyceridemia, and low high-density lipoprotein cholesterol, respectively. There were significant reductions in body weight, BMI, serum insulin, fasting glucose-to-insulin ratio (FGIR), subfascial fat and intermuscular fat after 4 weeks. Loss of subfascial fat at thighs was significantly associated with decreasing levels of serum insulin in those who had initially abnormal high levels (p<0.05, R²=0.64). Mean BMI still significant decreased when subjects were followed-up at twenty-four weeks after study (p<0.001). Conclusion: Loss of subfascial fat at thighs, which was associated with improvement of serum insulin levels, suggests that reduction in ectopic fat deposit by 4 weeks of dietary modification and moderate exercise enhances insulin sensitivity.

P0967

Title:
Long Term Effects of Vitamin Supplementation of HIV-Infected Mothers on Childhood Morbidity and Mortality in Tanzania

Nasim Sabery 1, Karim Manji 3, Ellen Hertzmark 2, Gernard Msamanga 3, Wafaie Fawzi 2, Christopher P Duggan 1
1) Children’s Hospital Boston, Harvard Medical School, Boston, USA 2) Harvard School of Public Health, Boston, USA 3) Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania

Summary:
Objective: To determine whether maternal multivitamin supplementation has a long-term effect on mortality and morbidity of children up to 5 years of age born to HIV- infected mothers. Methods: 1078 HIV-infected pregnant woman were enrolled in a double-blind randomized placebo-controlled trial in Dar es Salaam, Tanzania to examine the effects of daily supplementation with vitamin A, multivitamins or both on maternal and child outcomes. Supplements were provided daily during pregnancy and lactation. Children were evaluated at monthly clinic visits or home visits where information was collected about vital status, diarrhea, cough, fever, respiratory infections, and other common morbidities. Results: 776 children were followed through a median age of 51 months. Maternal receipt of multivitamins or vitamin A did not affect child mortality from 6 weeks to 5 years (p=0.58 and p=0.14, respectively), but maternal vitamin A receipt resulted in higher mortality (RR 1.98, 95%CI: 1.12, 3.51 p=0.02) in children from 2 to 5 years of age. Children born to mothers who received multivitamins had a decreased risk of all types of diarrhea (RR 0.80, 95%CI: 0.56, 0.95 p=0.01), acute diarrhea (RR 0.85, 95% CI: 0.74, 0.97 p=0.02) and watery diarrhea (RR 0.80, 95% CI: 0.68, 0.95 p=0.02) from 6 weeks to 5 years of age. The reduced risk of watery diarrhea persisted in children from 2-5 years of age (RR 0.70, 95%CI: 0.52, 0.93 p=0.01). Children born to mothers who received vitamin A had an increased risk of all types of diarrhea (RR 1.29, 95% CI: 1.03, 1.63; p=0.03) and acute diarrhea (RR 1.29 95% CI 1.02, 1.62 p=0.03) from 2-5 years of age. Conclusions: Multivitamin supplementation to HIV-infected mothers did not affect child mortality but decreased diarrheal incidence up to age 5 years, while vitamin A supplementation increased child mortality and the incidence of diarrheal infections. The effects of maternal micronutrient supplementation during pregnancy and lactation may be observed in children until at least 5 years of age.

P0968

Title:
Double blind placebo-controlled randomized study of ù-3 polyunsaturated fatty acids effects on cognitive and visual function of children aged 5-6 years.

Natalia M. Shilina 1, Igor Ya. Kon 1, Marina R. Guseva 1, Igor E. Hatcenko 1, Margarita M. Korosteleva 1
1) Institute of Nutrition, Moscow, Russia

Summary:
Background. Positive health effects of long chain polyunsaturated fatty acids (LCPUFA) in premature and healthy term bottle fed infants are well documented. Less is known about LCPUFA effects in older children. The sources of ù-3 PLFA in the diet may be deficient. We have found that ù-3 PLFA consumption of preschoolers visiting Moscow kindergarten (0.53% of total energy intake) is less than the recommended level (1-2%, Uauy et al, 2003). So our aim was to study the effects of additional intake of ù-3 PUFA by preschool children on their common acute illnesses, weight and height gain, some indices of cognitive and visual function. Methods. 48 children of 5-6 years were randomly divided in 2 groups one of which took 3 capsules/day of fish oil (0.9 g) rich in ù-3 LCPUFA for 7 months and the other group took placebo. Anthropometry indices and illnesses by standard methods, cognitive function by proof probes (quantity of symbols and mistakes and coefficient of productivity), visual function by contrast frequency sensitivity (CFS) were studied twice before fish oil intake and after the finishing study. Data were statistically analyzed by SPSS 11.5. Results. Intake of 0.9 g of fish oil increased ù-3 PUFA content in the children’s diet to 0.61% of total energy, doubling LC PLFA content in it. There were no statistically significant differences between groups in weight and height gains at the end of the study. But we have found a tendency to the lowering of common acute illnesses and improvement of cognitive function as well as a significant improvement of CFS at the low frequencies for white-black (p<0.01), at the middle frequencies - for red-black (p<0.05), and at the high frequencies - for green-black gratings (p<0.02) in the fish oil group as compared to placebo group. Conclusion. As green and red gratings at the low and middle frequencies of CFS characterize conductive nervous ways of an eye and at the high frequencies - the macula state, it may be concluded that intake of fish oil ù-3 LCPUFA has positive influence on conductive ways of an eye and central part of retina that must improve visual acuity in children.
Objective: The first nutrition of premature neonates is based on either total parenteral nutrition (TPN), total enteral nutrition (TEN) or minimal enteral nutrition (MEN). MEN may prevent the detrimental effects of gut starvation without overloading the intestine beyond its digestive capacity, potentially leading to necrotizing enterocolitis (NEC). It is currently unknown how this nutritional practice affects NEC and depends on diet composition. Our objective was to determine if MEN is superior to TPN during the first 2 days after birth and to study whether this effect is diet-dependent.

Methods: Preterm pigs (82% gestation) were delivered by cesarean section. They were provided TPN or MEN (2-3mL/kg/3h) consisting of infant formula (MEN-F) or bovine colostrum (MEN-C) for 48 h followed by total enteral nutrition (15mL/kg/3h) with infant formula (TEN-F) or bovine colostrum (TEN-C) for 24-36 hours. This led to the following groups: 1) MEN-F TEN-F (FF, n=12); 2) MEN-C TEN-F (CF, n=12); 3) MEN-C TEN-C (CC, n=10); 4) TPN TEN-F (OF, n=12) and 5) TPN TEN-C (OC, n=13). An indicator of in vivo gut absorptive function was measured plasma levels of galactose after an oral bolus of galactose by the start and end of the TEN feeding period. All pigs were killed after 24-36 hours of TEN and pathologic changes in the intestine were scored (range 1-6). A pathological score of three or more in any region was considered as NEC. Tissue from the small intestine was collected for analysis of absorption of 14C-D-glucose. Finally tissue sections from the same locations were used to determine digestive enzyme activities and villus height. Results: NEC incidence was 75% in the OF group, 60% in the CF and FF groups, 40% in the OC group, and 0% in the CC group (CC vs all groups, P<0.0001). Plasma levels of galactose were similar among groups prior to TEN, but were markedly reduced 24h later in OF, CF and FF compared with CC (P<0.01). Glucose absorption tended to be lower in OF, CF and FF (36-55% of values in CC). There was an increase in villus height (48%, P<0.05), activity of lactate (+100%, P<0.0001) and amino peptidase N (+45%, P<0.0001) in CC, relative to OF with intermediate values in CF and FF. Conclusions: MEN improved intestinal function and NEC resistance after both colostrum and formula feeding. Further studies are required to identify the mechanisms and the volume and nature of enteral diet required to induce maximal gut maturation after a preterm birth.

Title: Administration of minimal enteral nutrition reduces necrotizing enterocolitis in preterm pigs

Malene S Cilieborg 1, Thomas Thymann 1, Randal K Buddington 2, Stine B Bering 1, Per T Sangild 1
1) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 2) University of Memphis, Memphis, Tennessee, USA

Summary

Objective: Milk contains many immunomodulatory compounds which could be important in premature neonates to protect the immature intestine from harmful inflammatory reactions, potentially leading to necrotizing enterocolitis (NEC). Many milk bioactive factors show particularly high concentration in the first milk, colostrum. It is not known whether immunomodulatory factors from bovine milk are effective against gut dysfunction in other species. The objective of this study was to investigate the effects of bovine colostrum and formula diets enriched with bovine osteopontin, gangliosides or sialic acid on intestinal structure, function and development of necrotizing enterocolitis (NEC) in preterm pigs. Methods: 1) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 2) University of Memphis, Memphis, Tennessee, USA

Objective: Milk contains many immunomodulatory compounds which could be important in premature neonates to protect the immature intestine from harmful inflammatory reactions, potentially leading to necrotizing enterocolitis (NEC). Many milk bioactive factors show particularly high concentration in the first milk, colostrum. It is not known whether immunomodulatory factors from bovine milk are effective against gut dysfunction in other species. The objective of this study was to investigate the effects of bovine colostrum and formula diets enriched with bovine osteopontin, gangliosides or sialic acid on intestinal structure, function and development of necrotizing enterocolitis (NEC) in preterm pigs. Methods: Experiment 1: Pigs were delivered by caesarean section at 90% gestation and provided total parenteral nutrition (TPN) for 48 h followed by total enteral nutrition with bovine colostrum (COL, n=5) or milk formulas enriched with ganglioside (GANG, n=6) or sialic acid (SA, n=6), or not enriched (CONTROL, n=6). In this experiment OPN was provided during both the TPN and the enteral feeding period. In both experiments, pigs were euthanized after 24-36 h of enteral feeding when NEC-like symptoms appeared in a proportion of pigs. Plasma levels of galactose and mannitol and activities of dipeptidylpeptidase IV, aminopeptidase A and lactase; all P<0.05, relative to all formula-fed groups. GANG and SA treatments did not improve NEC incidence or any structural or functional gut indices relative to CONTROL. OPN treatment resulted in a slight reduction in the incidence of NEC versus OPN-CONTROL (46% vs. 77%, P<0.05) but there were no significant effects on functional gut indices. Conclusion: Osteopontin-enriched diets may reduce the sensitivity of the preterm intestine to inflammatory reactions and NEC. However, neither of the three bioactive-enriched formulas offered the same benefits as bovine colostrum.

Title: Bovine colostrum, but not formula enriched with osteopontin, sialic acid or ganglioside, improves gut structure, function and NEC resistance in preterm pigs

Hanne Moeller 1, Thomas Thymann 2, Anne Kvistgaard 3, Hanne Frokier 1, Per T Sangild 2
1) Biocentrum-DTU, Technical University of Denmark, Lyngby, Denmark 2) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 3) ARLA Foods Ingredients, Aarhus, Denmark

Summary

Objective: Milk contains many immunomodulatory compounds which could be important in premature neonates to protect the immature intestine from harmful inflammatory reactions, potentially leading to necrotizing enterocolitis (NEC). Many milk bioactive factors show particularly high concentration in the first milk, colostrum. It is not known whether immunomodulatory factors from bovine milk are effective against gut dysfunction in other species. The objective of this study was to investigate the effects of bovine colostrum and formula diets enriched with bovine osteopontin, gangliosides or sialic acid on intestinal structure, function and development of necrotizing enterocolitis (NEC) in preterm pigs. Methods: 1) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 2) University of Memphis, Memphis, Tennessee, USA
GLUCOSE MALABSORPTION IS RELATED TO THE SEVERITY OF NECROTIZING ENTEROCOLITIS IN PRETERM PIGS

Stine B Bering 1, Thomas Thymann 1, Per T Sangild 1, Randal K Buddington 2
1) Human Nutrition, University of Copenhagen, Frederiksberg, Denmark 2) University of Memphis, Memphis, Tennessee, USA

Summary:
Objectives: Necrotizing enterocolitis (NEC) is a common cause of morbidity and mortality among preterm infants and is associated with malabsorption and food intolerance. Of critical importance to neonatologists is identifying infants at risk of NEC so interventions can be started before onset of clinical symptoms. We determined if glucose malabsorption is related to the severity of NEC and if malabsorption precedes clinical NEC symptoms.

Methods: Varying incidences and severities of NEC were induced using preterm pigs (n=65) collected by cesarean section (92% gestation) and provided total parenteral nutrition for 48 hours. Subsequently they were divided into three groups and fed total enteral nutrition for an additional 24-36 hours before being killed for tissue collection. The enteral diets were based on polycose/whey (CONTROL, n=11), lactose/whey (LACTOSE, n=11) or polycose/casein (CASEIN, n=9). As an indicator of in vivo gut absorptive function at the start and end of the feeding period, we measured plasma levels of galactose at 0-60 min after an oral bolus of galactose. After the last test, all pigs were killed and pathologic changes in the intestine were scored (range 1-6). A pathological score of three or more in any region was considered a case of NEC. Tissue from the small intestine was collected for analysis of 14C-D-glucose absorption. Finally, intestinal tissue sections were used for measurement of the hydrolytic activity of disaccharidase and peptidase digestive enzymes. Results: NEC incidence in the control group was 91% but markedly lower in both experimental groups (LACTOSE, 27%, P<0.001; CASEIN 67%, P<0.05). Six hours after initiation of enteral nutrition, gut absorption of galactose was higher in the LACTOSE (P<0.01) and CASEIN (P<0.01) groups, compared with controls, whereas this difference was not detected by the end of the enteral feeding period. Glucose absorption rate was higher in LACTOSE vs. CONTROL (+66%, P<0.01) whereas CASEIN was lower than CONTROL (+33%, P<0.05). Activity of lactase, maltase, dipeptidyl peptidase IV and aminopeptidases A and N were increased in LACTOSE relative to CONTROL (+30-60%, P<0.05), whereas CASEIN and CONTROL were similar. Conclusions: Lactose is superior to polycose in enteral formula for preterm pigs. The mechanism may be related to a lactose-dependent increased digestive function, coupled with improved epithelial immunity. Similar effects may present for preterm infants and and hence, nature of the carbohydrate fraction in preterm formulas could be important for NEC resistance.
**P0973**

**Title:** High cholesterol levels in newborns and intrauterine growth retardation

Peter Szitanyi 1, Anna Mydlilova 2, Milena Dokoupilova 3, Milos Cerny 1, Jan Janda 1, Rudolf Poledne 4

1) Department of Paediatrics and Neonatology, Hospital Motol, Prague, Czech Republic 2) Department of Neonatology, Thomayers Hospital, Prague, Czech Republic 3) Department of Gynaecology and Obstetrics, Neonatology 1st Faculty of Medicine, Prague, Czech Republic 4) Institute for Clinical and Experimental Medicine, Cardiovascular Research Centre, Prague, Czech Republic

**Summary**

Introduction: Intrauterine growth retardation (IUGR), evaluated by perinatal anthropometric data, seems to be a strong predictor of hypertension, diabetes type 2 and hyperlipidemia (metabolic syndrome X) as well as of cardiovascular mortality in adulthood. The theory of prenatal origin of later diseases (programming) clearly shows the importance of early human development. Methods: We analyzed two groups of neonates, probands with IUGR (n=73) and controls (n=69). Total cholesterol (TC) and triglycerides (TAG) had been determined in all probands from venous blood samples, in blood samples of their mothers and in addition in umbilical blood. Results: Both groups had the same gestational age (40+1 weeks). Probands were anthropometrically proportional but significantly differed in birth weight (BW) (3485 vs 2459 g) and birth length (50,8 vs 48,6 cm). All IUGR probands had BW lower than 3000g. Levels of TC and TAG in both groups are in table (M+SD, mmol/l)

Conclusion: We have found significantly higher total cholesterol levels in newborns with IUGR compared to normal controls. Higher cholesterol levels in IUGR newborns were not determined by hypercholesterolemia of their mothers. This is supported by similar cholesterol levels in umbilical blood and significantly higher levels of mothers in the control group. Higher cholesterol levels in IUGR probands support the programming theory and could represent a potential risk for cardiovascular mortality in future life of these individuals.

Acknowledgments: This work was supported by grant NE 7900-5 from the Internal Grant Agency of the Czech Ministry of Health

**P0974**

**Title:** Bifidogenic effect of infant formulae with regard to their composition

JM HASCOET, MD 1, C HUBERT, MD 1, S GAGA, MD 1, F ROCHAT, PHD 3, H LEGAGNEUR, PhD 2, P STEENHOUT, MD 4

1) Neonatology, Maternite Regionale Universitaire, Nancy, France 2) Biology, Maternite Regionale Universitaire, Nancy, France 3) Nestle Research Center, Lausanne, Switzerland 4) Nestle Nutrition, Nestec Ltd, Vevey, Switzerland

**Summary**

Objectives: The larger number of bifidobacteria in the intestine of breastfed infants has been associated with their better health as compared with formula-fed infants. Therefore, for infants who cannot be breastfed, there may be a rationale to adapt infant formulas to promote the establishment of an intestinal microbiota resembling that of breastfed infants. We assessed the bifidogenic effect of human milk, a standard control formula, a formula with a composition closer to human milk Nan and investigate equivalence between Nan and Nan + a probiotic, Bifidobacterium longum (BL999; Morinaqa milk Japan). Methods: Double blind, randomized, controlled trial of 3 groups: control formula; Nan with a 30/70 Casein/Whey ratio (vs. 70/30 for the control), an aminogram closer to human milk s (Threonin Tryptophane) allowing lower protein content (1.8 vs. 2.5g/100Kcal); lower phosphate (31 vs. 70mg/100Kcal) and higher lactose levels (11.1 vs. 4.5g/100Kcal); Nan + BL999 (2x107 cfu/g) and a reference breastfed group (BF). Healthy singleton term infants enrolled within the first week of life received the study formulae for 4 months. Exclusion criteria included ante-natal antibiotics, prenatal antibiprophylaxis, and antibiotic treatment at the time of enrolment or up to 5 days previously and throughout the study. Primary outcome was bifidobacteria counts, measured by FISH method, in stool samples at 2 months of age. Results are expressed as log CFU/g: Median [IQR] Results: At 2 months of age, bifidobacteria counts were significantly higher in the groups BF (10[0,9], p<.0001, n=35) or receiving Nan (10.0[0.8], p<.0001, n=33) or Nan +BL999 (9.8[1.4], p<.001, n=33) than control formula (9.2[3.5], n=35). In addition, 11%, 17%, 21% vs. 33% had bifidobacteria levels under detection limit (1.0E+6). At 1 month of age bifidobacteria stool levels were 10[0.8] (p<.0001), 9.9[0.8] (p<.0001), 9.6[1.1] (p<.0001) vs. 8.7[3.1] for BF, Nan , Nan +BL999 and control formula respectively. There was no significant difference between the Nan and the Nan +BL999 groups at 1 or 2 months (p= 0.22 and 0.15 respectively) Conclusions: These data show that an infant formula with a composition closer to human milk is more bifidogenic than a standard formula and this bifidogenic effect is comparable to breast-milk and to a formula supplemented with Bifidobacterium longum BL999.

Study sponsored by Nestle Nutrition, Nestec Ltd

**P0975**

**Title:** Do negative skin prick tests and serum specific IgE tests rule out food allergy in the presence of a positive clinical history?

Priya Narula 1, Val Bateman 1, Fiona Shackley 1
Summary

Background: Food allergy is an increasing problem in children and diagnosis must be based on reliable and safe criteria. Positive skin prick tests (SPT) or evidence of specific IgE antibody in the presence of a suggestive clinical history is often used to make a diagnosis of a specific food allergy. Is a negative skin prick test and serum specific IgE test with a suggestive clinical history reassuring? Aim: To review open food challenges carried out in a tertiary allergy unit to demonstrate safety and correlate the outcome of the open food challenge (OFC) with the preceding SPT and blood tests. Methods: Retrospective case note audit looking at safety of open food challenges carried out over a period of 7 months and reviewing failed OFC's. Results: 70 children had an open food challenge (OFC) over a 7 month period. The median age of children undergoing an OFC was 4.7 yrs (range 1.2 - 15.1 yrs). 31 (44.1%) children had an egg challenge, 21 (30%) had a milk challenge, 12 (17.4%) had a nut challenge (11 peanuts and 1 cashewnuts), 3(4.3%) had a fish challenge and another 3 (4.3%) with other foods. 19(27.5%) children failed the OFC. Of these 11 had a milk challenge, 7 an egg challenge and one a fish challenge. A majority (84%) had an urticarial or erythematous rash necessitating termination of the challenge. Of the remaining, 2 did not complete the challenge due to food refusal, 2 had localised swelling, 2 had abdominal pain and one vomited. On examining the SPT and serum specific IgE of the children with failed OFC (excluding the 2 food refusals), SPT's were less than or equal to 3mm in 12 (63%) children and serum specific IgE's were <0.35 in 7 (37%) and < 90% positive predictive value in all. Conclusion: Our data highlights that in the event of a suggestive clinical history, a negative SPT/ RAST may not exclude the diagnosis of an allergy. It is important to consider an open food challenge to further establish or refute the diagnosis.

P0976

Title: Growth charts: What do they tell?

V. Pujitha Wickramasinghe 1, Sanath P Lamabadusuriya 1, Geoff J Cleghorn 2, Peter SW Davies 2
1) Department of Paediatrics, University of Colombo, Colombo, Sri Lanka 2) The School of Medicine, The University of Queensland, Brisbane, Australia

Summary:

Introduction Anthropometric measurements have long been used for the assessment of growth and development. Standards are used to compare these parameters and -2SD to +2SD is often considered normal. Do these charts represent healthy physical growth and can they be used across all populations are important questions. Children having normal growth should have similar body composition irrespective of the SD value he/she has for the relevant anthropometric parameter. This study tries to investigate this hypothesis. Objective To study the appropriateness of NCHS/CDC growth charts in monitoring of growth in children. Methods 5-15 year old Sri Lankan children were studied. SD scores for height, weight and BMI were calculated based on CDC 2000 standards using lmsGrowth programme version 2.12 (Cole & Huiqi, 2005). Based on SD for weight, height and BMI values, the population was stratified into < -3, -3--2, -2--1, -1- 0, 0 -+1, +1-+2, +2-+3 and >+3. Body composition was assessed using 2 compartment body composition model using isotope dilution technique (D2O). Results There were 124 girls and 158 boys. The mean ages of girls and boys were 10.1(2.8) and 9.6(2.7) years respectively. The percentage fat mass (%FM) increased with increasing SD levels. One way ANOVA was used to assess whether the %FM in each SD group differ significantly from each other. For body weight SD and BMI SD groups the fat content of the groups below the median differed from values above the median. The 4 levels below the median did not show difference from each other. Children in 0 +2SD group, although considered normal have significantly different body compositions. Furthermore they have very high levels of %FM. Conclusions This study shows that Sri Lankan children have very high fat content in their body. Children at higher SD levels, despite being designated as normal, have higher levels of fat that could be associated with disease states. Therefore the effort to put a child onto a higher SD score could be largely due to accumulation of fat. Preferred could be to let a child to grow along its growth trajectory irrespective of the SD position on the chart. This needs further evaluation. In a time where non communicable diseases are on the rise and excess weight is more important than ever before, we may have to seriously consider whether population base anthropometric measures should be used or direct body composition techniques should be developed.

P0977

Title: Oral insulin supplementation in pediatric short bowel disease. A pilot observational study

Raanan Shamir 1, Sanja Kolacek 2, Sibylle Koletzko 3, Irit Tavori 4, Igor Sukhotnik 5, Naim Shehadeh 6
1) Institute of Gastroenterology, Hepatology and Nutrition, Schneider Children’s Medical Center, Tel-Aviv University, Petach-Tiqva, Israel 2) Children's Hospital, Zagreb Medical University, Zagreb, Croatia 3) Division of Gastroenterology, Dr. v. Haunersches Kinderspital, Ludwig Maximillians University, Munich, Germany 4) Department of Neonatology, Edith Wolfson Medical Center, Holon, Israel 5) Department of Pediatric Surgery, Bnai Zion Medical Center, Haifa, Israel 6) Department of Pediatrics A and Pediatric Diabetes, Meyer Children's Hospital, Technion, Institute of Technology, Haifa,
Isreal

Summary:
Introduction and study aim: Insulin is present in human milk and oral insulin supplementation causes a dramatic adaptive gut growth in a rat model of short bowel syndrome (SBS). We conducted an open label pilot observational study to examine whether oral insulin supplementation to pediatric patients with SBS decreases the need for parenteral nutrition. Patients and Methods: Between April 2004 and March 2006, 10 premature infants and children were recruited from 8 Pediatric Gastroenterology centers in Israel, Croatia and Germany. Enrolled subjects received 1 unit of insulin (Actrapid, Novonordisk, Denmark)/kg body weight per dose x 4/day (every 6 hours) for 28 days. We monitored glucose blood levels, weight, enteral and parenteral intake of calories, carbohydrates, and lipids. In addition, blood levels of albumin, ALT, AST, GGT, ALP, total cholesterol, triglycerides, and anti-insulin antibodies were recorded. Results: On average, enteral intake increased from 45.6± 30.6% to 58.9± 28.2% (not statistically significant), and ALT blood levels decreased from 194±128U to 136± 79U (not statistically significant). Two (2/10) infants were weaned of parenteral nutrition. None of the children developed insulin antibodies. Conclusion: Oral insulin supplementation in pediatric short bowel disease is safe. The overall effect was modest, although a clinical significant effect could be observed in a subset of children. The efficacy of oral insulin remains to be determined in a double blind manner using a preparation that is resistant to degradation in the stomach.

P0978

Title: THE APPARENT MACRONUTRIENTS DIGESTION IN CYSTIC FIBROSIS CHILDREN

Rafal W Wojciak 1, Jaroslaw Walkowiak 2
1) Dpt. of Food Hygiene and Human Nutrition, Nature Sciences University of Poznan, Poznan, Poland 2) First Chair of Paediatrics, Poznan University of Medical Sciences, Poznan, Poland

Summary:
Cystic fibrosis (CF) is the most common lethal genetic disorder of Caucasians. The disease is caused by a mutation in the cystic fibrosis transmembrane conductance regulator that is responsible for the transport of chloride and sodium ions. Alterations in influx and efflux of these ions result in changes in the osmolarity of mucus and other exocrine glands secretions. Thus, CF patients have greater nutritional needs in fighting infections and providing energy for respiration because their absorption of nutrients is impaired. The aim of presented preliminary study was to assess the apparent protein, fat and carbohydrates digestion in CF children. The study was made with randomizing selected twelve CF patients (six boys and six girls, aged respectively 12.2 ± 2.4 and 12.3 ± 3.3 years) during their hospitalization. In the ten days of the study, the daily food rations and faecal excretions were collected. In the samples of food rations and faeces the total protein, fat and carbohydrates levels were measured by respectively Kjehdahl, Soxhlet and calculated methods. The procedures used in this study were approved by children, their parents as well as were accepted by Local Ethics Committee by Poznan University of Medical Sciences. Apparent ingredients digestion was calculated as a percentage of total ingredient excretion of total ingredient intake [(ingredient intake – ingredient excretion)/ingredient intake x 100%]. The mean intake of studying nutrition ingredient in CF children were following: protein – 57, fat – 59, and carbohydrates – 285 g/day. In differences to sex the intake of protein, fat and carbohydrates in girls and boys were respectively following: protein – 64 and 55; fat – 50 and 62; carbohydrates – 286 and 285 g/day. The mean faecal excretion of ingredients were in girls: protein – 6,5; fat – 6,8, carbohydrates – 9,1 g per day; in boys: protein – 7,5; fat – 9,5; carbohydrates – 10,2 g per day; in total: protein – 7,1; fat – 8,4; carbohydrates – 9,8 g per day. After a calculation apparent digestion of protein was in girls, boys and total on the level of 87%; of fat respectively: 86, 85 and 86%; of carbohydrates respectively: 97, 96 and 97%. According to the literature data the apparent digestions of protein, fat and carbohydrates in CF children were lower than in healthy subjects and were not depended on sex.

P0979

Title: THE FREE-WILL STARVATION AS A METHOD OF WEIGHT LOSS IN EARLY ADOLESCENT GIRLS

Rafal W Wojciak 1
1) Dpt. of Food Hygiene and Human Nutrition, Nature Sciences Un. of Poznan, Poznan, Poland

Summary:
More than 50% of women are not satisfied with their body shape including very young and early adolescent girls. Although many popular articles deal with healthy influence of free-will starvation, there are no scientific data on this method as well as about the range and frequency of starvation in the lifespan. The aim of this preliminary study was to assess free-will starvation occurrence in the subpopulation of girls in the age of early adolescence and characterisation of this method as a method of weight loss. The questionnaire study was carried out on 123 girls aged 14-17 years representing college students (general and nutrition profiles of that, respectively 74 and 49 subjects). More than 80% of subjects independently of school profile declared they tried different methods of weight loss although once a year such as alternative diets (vegetarian, fruits, Atkin’s etc.),
increasing of physical activity, decreasing in daily food rations intake or excluding some products (reach in fat or sugar). The 57% of sliming girls declared regular diets join with physical activity as a common health lifespan keeping. The 47% of sliming girls applied free-will starvation as a method of weight loss from a few days a year to one or even two days a week. The wider study on free-will starvation to eliminate nutritional errors and deep malnutrition as a consequence of uncontrolled sliming are necessary. However, younger and younger persons use starvation as a simple way to lost a overweight, we still don’t understand the physiological reaction of human organism on this method. The not published data of our team suggested that the regular starvation one day a week after 48 days is negative correlated with iron management as well as physical common activity and immunity. It can influence not only on the current health status but also on the all life of slimming girls, especially in the latest time to the being a mother.

P0980

Title: DIETARY FIBRE INTAKE IN CHILDREN WITH DIGESTIVE FUNCTIONAL DISORDERS

Liliana Ladino Meléndez 1, Rafael Guerrero-Lozano 1
1) Universidad Nacional de Colombia, Bogota, Colombia

Summary:
Aim: To evaluate the dietary fibre intake in children with digestive functional disorders. Methods: Ninety eight children (67% girls) with an age of 9.6±3.7 years, from the gastroenterology clinic were included; 84 had functional disorders (Rome II) and 14 other conditions (liver disease, pancreatitis, obesity). Independently from medical consultation, a blind nutritional evaluation was performed. From the former, data regarding age, weight, height and diagnosis were obtained; from the latter, the amount and frequency of fluids and foods, based on a 24 hour intake analysis. Dietary fibre was determined upon data by CYTED and compared with daily intakes suggested by AAP. For analysis, children were divided as follows: a) constipation (n=30); b) improved constipation (n=13); c) irritable bowel (n=12); d) recurrent abdominal pain (n=4); e) dyspepsia without constipation (n=20); f) dyspepsia with constipation (n=5); g) others. They were also classified as constipated (a,c,f) and not constipated (b,d,e,g). Results: No significant differences were found (Pearson´s Chi square) regarding fibre intake, which was adequate or high in 59%. The amount of fluids in relation with ingested fibre was low in 95%. Conclusion: No matter the diagnosis, children with functional disorders eat similar amounts of dietary fibre, adequate in more than half of them. Nevertheless, the amount of fluids is proportionally low.

P0981

Title: ENERGY BALANCE: RESTING ENERGY EXPENDITURE AND POSTPRANDIAL THERMOGENESIS IN OBESE CHILDREN.

PAZ REDONDO* 1, BEATRIZ DE MATEO 1, JUAN MANUEL BARTOLOME 2, JOSE MANUEL MARUGAN 2, MARIA JOSE MARTINEZ 2, MARGARITA ALONSO FRANCH 1
1) F. de MEDICINA. U. VALLADOLID, VALLADOLID, SPAIN 2) HOSPITAL CLINICO UNIVERSITARIO.U. VALLADOLID, VALLADOLID, SPAIN

Summary
BACKGROUND: Pediatric obesity is increasing worlwide. This problem is the result of persistant adverses changes in lifestyle, food intake and energy expenditure (EE). Factors related to EE could be as important as dietary factors in the genesis of the obesity epidemic. We hypothesized that differences in energy metabolism between non-obese and obese children are attributable to differences in EE components, postprandial thermogenesis and physical activity. OBJECTIVE: Investigate the factors which are involved in energetic balance (imbalance between consumed and expended energy) in a group of obese children. METHODS: Analytic study with equivalent-control group (quasi-experimental design); 47 obese and non-overweight children, aged 6 to 18 years. Anthropometry was performed by standard techniques; total body fat free mass (FFM) and fat mass (FM) were determined by bioelectrical impedance analysis (RJL Sistem); REE and postprandial thermogenesis by indirect calorimetry under standarized conditions (Deltatrac); maturation, diet (3-day prospective registry), physical activity (diary activity factors (FA) FAO/OMS) and biochemical profile (fasting blood glucose, insulin and lipids) using standard laboratory techniques. Weight status was defined as obesity, based on the 95th percentile for body mass index (BMI), establishing a z-score higher +2. RESULTS: Table 1:OBESE/NON-OVERWEIGHT (mean, confidence interval 95% (IC 95%) AGE 12,11 (11,10:13,12)/12,29(10,92;13,65) ZBMI* 3,11(2,47;3,93)/0,17(-0,85;0,5) % FM* 39,87(37,33;42,41)/21,97(17,77;26,16) REE 1575(1485-1840)/1290 (1207,50-1527,50) % EE POSTPRANDIAL over REE* 5,76(2,17-8,62)/10,61(7,12-13,33) PHYSICAL ACTIVITY (FA)* 1,49(1,44-1,56)/1,68(1,55-1,73) ENERGY INTAKE (Kcal) 2123,25(1812,23-2434,27)/2195,54(1692,95-2281,14) GLLCOSE 89,53(84,51-94,55)/88,00(84,04-91,96) INSULIN* 12,20(9,70-18,75)/ 7,40(5,70-10,50) CHOLESTEROL TOTAL 152,06(142,19-161,92)/163(150,73-185,05) HDLC* 56,00 (50,00-66,00)/72,00(64,00-79,00) TRIGLYCERIDES 66,00(50,00-93,50)/53,00 (47,00-64,50) CONCLUSION: REE were higher in obese children REE adjusting for body composition, diet, fasting blood glucose and general biochemical profile did not differ between groups. Anthropometry, FM and fasting insulin were significantly higher in obese children. Physical activity and postprandial thermogenesis were lower in obese group Substrate utilitation did not differ between groups.

P0982
Title: Distinct effect of early childhood diarrhea and stunting on cognitive performance in later childhood: a cohort prospective study in northeastern Brazilian children.

Relana Pinkerton 1 , Aldo Lima 2 , Sean Moore 1 , Mark Niehaus 1 , Reinaldo Oria 2 , Richard L. Guerrant 1
1) University of Virginia, Charlottesville, USA 2) Federal University of Ceara, Fortaleza, Brazil

Summary:
Objective. Some studies have reported an effect of early childhood diarrhea (ECD) on later cognition and numerous studies have demonstrated effects of malnutrition on later cognition. ECD has also been shown to lead to long term stunting. To assess the independent contribution of ECD and stunting on cognitive impairment in later childhood. Methods. A cohort of 131 children from a favela community in Fortaleza, CE, Brazil was monitored since birth for diarrhea and anthropometric status. Cognitive assessments including non-verbal intelligence (TONI), coding tasks (WISC-III) and verbal fluency (NEPSY) were completed when children were an average of 9 (range 6 to 13) years of age. Scores were adjusted for child age. SPSS (v.15) was used to construct multivariate ANOVA models to assess the individual as well as combined effects of ECD and stunting on later childhood cognitive performance. Family background including number of household incomes, maternal education, child sex, child birth weight and breastfeeding were included as a covariates in final models. Results. ECD, HAZ at 24 mo. and WAZ at 24 mo. were sig. univariate predictors of the studies three cognitive outcomes: TONI, coding and verbal performance (P<0.05). The single exception was that HAZ at 24 mo. failed to sig. predict Verbal performance (P=0.10). The multivariate models showed that ECD remained a sig. predictor, after adjusting for the effect of 24 mo. HAZ and WAZ, for both TONI (w/24 mo. HAZ, P=0.029 and w/WAZ 24 mo, P=0.006) and Coding (w/24 mo. HAZ, P=0.025 and w/WAZ 24 mo, P=0.036) scores. Twenty-four month WAZ and HAZ were also sig. predictors after adjusting for ECD. WAZ at 24 mo. was the only sig. predictor of Verbal performance. Among all the covariates, only number of household incomes was sig. related to Coding and consequently was included as a covariate in the ANOVA for which Coding was the dependent variable. ECD remained a significant predictor of Coding after number of household incomes was considered (P=0.006). Conclusion. The results showed that ECD and stunting have independent effects on children’s intellectual function well into later childhood. These findings suggest intervention efforts directed at both ECD and malnutrition are needed to improve cognitive outcomes for children in developing countries. Financial support: CNPq, FIC and ICIDR, NIH.

Title: Alimentary Guide for children with cow’s milk allergy

Pinotti-Alves, R 1 , Pinotti-Alves, R 1 , Coelho, AC 1 , Malinverni, AP 1 , Lopes, EE 1
1) University Methodist of São Paulo, São Paulo, Brazil

Summary:
Objective: To make an Alimentary Guide for children with cow’s milk allergy. Methods: The proposed guideline is based on the Brazilian Guideline for children under two years old and the Brazilian Alimentary Pyramid for children between two and three years old. The recommended intake of macro and micronutrients were based on Dietary Recommended Intake. The menus were calculated by Nutrition Program – NutWin. A list of food substitution was prepared based on their caloric equivalence. Free cow’s milk products were suggested to the patients. Results: For children with no soy allergies, cow’s milk-based special formulas were substituted by soy-containing food or soy beverages supplemented with calcium. However, soy allergic patients are recommended to use hypoallergenic formulas or the respective caloric food substitute with calcium supplementation. Vitamin D was lower than the recommended levels from DRI for children with more than six month restricted diet. However, Brazil is a tropical country and vitamin D deficiency is not common. It was possible to elaborate the alimentary plan attending to the recommended nourishment for these children. The recommended calcium can’t be found in children without milk formula substitute. In these cases, it is necessary calcium supplementation intake. Conclusion: The Alimentary Guideline was elaborated based on the recommended nutrition for children with cow’s milk allergies; menu options and food substitute list makes easier to help patients to follow the restricted diet and leads to more success full treatment.

Title: Characterization of soy allergic Brazilian patients using a microarray technique for detection of multiple IgE reactivity

Renata R. Cocco 1 , Dirceu Sole 1 , Marcia Mallozi 1 , Cristina M. Jacob 2 , Neusa F. Wandalsen 3 , Sigrid Sjolander 4
1) Federal University of São Paulo, Sao Paulo, Brazil 2) University of Sao Paulo, Sao Paulo, Brazil 3) ABC Faculty of Medicine Foundation, Santo Andre, Brazil 4) Phadia AB, Uppsala, Sweden

Summary:
Rationale: Since soy allergy is established as one of the most common food allergies, we decided to analyze the profile of Brazilian soy allergic patients, regarding their IgE recognition to different soy allergens, soy containing foods and allergens derived from peanut and relevant inhalants.

Methods: Patients (N=9) with immediate symptoms after ingestion of soy formula (failing oral food challenge) and IgE reactivity to soy extract as well as a control group (+ve IgE to soy but no symptoms) were selected. Their IgE responses to a number of purified proteins and protein mixes were analysed in a multiplexed capillary-flow based microarray assay. Results: α-conglycinin was the most recognized soy protein among the challenge positive patients although reactivity towards other soy proteins also was detected. For soy containing foods and food additives IgE recognition was directly correlated to the IgE reactivity to soy extract. The major peanut allergens also demonstrated correlation to IgE binding to the soy extract. IgE reactivity against pollen allergens was demonstrated in a majority of the patients and high CCD levels were shown in almost half of the patients.

Conclusions: A major difference in IgE reactivity pattern was observed between the allergic patients and the control group. The allergic patients showed high reactivity to major allergens in peanut and soy and a lower response towards inhalants. In this group the major IgE reactivity to soy was directed to α-conglycinin. The microarray technology offers a convenient tool to simultaneously study of different IgE specificities in allergic and sensitized individuals.

P0985

Title: Is IgE reactivity to cross-reactive carbohydrate determinants (CCD) totally clinically negligible? – case report

Renata R. Cocco 1, Dirceu Sole 1, Marcia Mallozi 1, Cristina M. Jacob 2, Neusa F. Wandalsen 3, Sigrid Sjolander 4

1) Federal University of São Paulo, Sao Paulo, Brazil 2) University of Sao Paulo, Sao Paulo, Brazil 3) ABC Faculty of Medicine Foundation, Santo Andre, Brazil 4) Phadia AB, Uppsala, Sweden

Summary:

Rationale: Although IgE antibodies directed to Carbohydrate Cross-reactive Determinants (CCD) are not supposed to have impact on clinical relevance, this case report shows a multiple food allergic patient who presents with very high levels of IgE to CCD and several foods and with a therapy resistant atopic dermatitis (AD). Methods: IgE levels to CCD and plant related foods (soy, peanut) were measured in serum from a 5yo girl using the ImmunoCAP™ System. In order to check the degree of cross-reactivity the serum was inhibited with purified CCD followed by analysis of the remaining IgE reactivity to CCD, soy and peanut. Results: Analysis of IgE reactivity showed an unusually high level to CCD (76 kUA/L). The levels to peanut and soy were equally high (114 and 75 kUA/L respectively). Inhibition with CCD reduced the IgE binding by 95% for CCD and 23% and 68% for peanut and soy respectively. Conclusions: After inhibition with CCD the IgE reactivity to peanut and soy was mutually reduced but not abolished. This point to the presence of IgE antibodies directed to both protein- and carbohydrate structures present on the allergens. However, the question still remains if this particularly high level of anti-CCD IgE could influence or maybe impair the clinical symptoms.

P0986

Title: Effect of prototype formulas enriched in sialic acid, gangliosides and phospholipids, and containing fructooligosaccharides on diarrhea and feeding tolerance in piglets

María Ramírez 1, Enrique Vázquez 1, M Luisa Jiménez 1, Pedro A Prieto 2, Margaret H Dohnalek 3, Ricardo Rueda 1

1) Discovery Technology R&D, Abbott Nutrition, Granada, Spain 2) Discovery Technology R&D, Abbott Nutrition, Columbus - OH, USA 3) Discovery Technology R&D, Abbott Nutrition, Chicago - IL, USA

Summary:

Objective: To study tolerance-related parameters: incidence and duration of diarrhea, fecal color and consistency in piglets fed a control or prototype formulas containing fructooligosaccharides (FOS) and a higher content of sialic acid (SA), gangliosides (GS) and phospholipids (PL). Method: Domestic piglets (4-5-day old) were fed with an adapted pig diet, according to their nutritional requirements. They were divided into 3 groups that were fed with a control formula (diet A) or two prototypes formulas containing FOS and enriched in the above mentioned active compounds (diet B and C). These diets were based on the macronutrient composition of a regular infant formula, but were adapted in terms of minerals and vitamins to the special requirements of piglets. All the formulas contained long-chain-polyunsaturated fatty acids (formula A and B, medium levels, and formula C, low levels). Animals were sacrificed after 8-9, 15-16, and 29-30 days of feeding. Dietary intake and weight gain were recorded. Fecal color and consistency were scored according to a nominal scale. The incidence and duration of diarrhea was recorded and evaluated. Statistical analyses were: GEE models with exchangeable correlation matrix and pair wise comparisons using the Bonferroni correction for body weight and food intake, one-way ANOVA and post-hoc comparisons by the same method for duration of diarrhea, and Chi-squared test for incidence of diarrhea and stool patterns. Results: The incidence of diarrhea was not significantly different among study groups (65, 67 and 57% for groups A, B and C respectively). However, the duration of diarrhea was shorter in groups B and C than in group A (3.8±1.5, 2.9±1.3 and 5.0±1.8 days, mean±SD). This difference was significantly different between groups A and B and was borderline significant between groups A and C (p=0.0681). Evolution of body weight and food efficiency was similar in all the groups. No differences were found in stool consistency pattern. Regarding stool color, group C had lower score.
Changes in nutritional status of children hospitalized at a 3th level institution.

Margarita García-Campos 1, Margarita García-Campos 1, Kira Alvarado-Aguilar 1, Kira Alvarado-Aguilar 1, Luisa Díaz-García 1, Luisa Díaz-García 1, Roberto Cervantes-Bustamante 1, Roberto Cervantes-Bustamante 1, Ericka Montijo-Barrios 1, Ericka Montijo-Barrios 1, Jaime Ramirez-Mayans 1, Jaime Ramirez-Mayans 1
1) Instituto Nacional de Pediatría, Mexico City, Mexico

Summary:
Background. Undernutrition prevalence in hospitalized children rates between 30-55%. Therefore, the importance of performing nutritional assessments including: anthropometric, dietetic, clinical and biochemical parameters. Hypothesis. Deterioration of nutritional status during hospitalization modifies biochemical and anthropometric parameters, among others. Aim. To determine some parameters related to nutritional status in hospitalized children in order to perform opportune interventions. Method. Children less than 5 years, hospitalized at the INP for more than six days were included. Nutritional assessments were done at entrance and discharge considering: weight for height (W/H), height for age (H/A), middle arm circumference (MAC), tricipital skinfold (TSF), physical exam, protein and energy consumption and biochemical parameters (hemoglobin, iron, total proteins, globulins, albumin, prealbumin, transferrin). Results. 50 patients were evaluated; 58% were male. Demographic data:(table) 60% of patients increase weight nevertheless, weight for height by z score do not improve. % of undernourished children increased: by H/A 4%, MAC 2% and TSF 6% (considering entrance versus discharge). Transferrin and albumin increased during hospitalization, 70% and 92% respectively. 50% of the children consumed their basal energy requirements, while 32% their minimum protein requirement. Comparing well nourished versus undernourished children, those with an adequate nutritional status consumed more energy than undernourished, who consumed more protein; both results statistical significant (p=0.035, p=0.005 respectively). Undernourished patients reported higher levels of: transferrin at entrance, and total proteins at discharge, with a significant tendency. Conclusions. There is a high prevalence of undernutrition, similar to reports by other authors. Weight gain and increase in transferrin and prealbumin levels do not impact body composition. Undernourished children consumed less energy and more protein than expected. Dietetic support should be improved.
Title: Postnatal development of intestine in small birth weight piglets as a model of IUGR neonates

Romain D’INCA 1, Christele GRAS-LE GUEN 2, Gaëlle BOUDRY 1, Isabelle LE HUEROU-LURON 1
1) INRA, UMR1079, Rennes, France 2) CHU, Nantes, France

Summary:
Objectives: Animal models of intra uterine growth retardation (IUGR) are useful to define nutritional strategies that would ensure adequate growth and development of IUGR neonates and prevent deleterious consequences. Spontaneous occurrence of small birth weight piglets in the pig species, mainly caused by placental insufficiency, provides a natural model of IUGR. However no data on intestinal maturation and its microbiota are currently available on piglets weighing between 0.8 and 1.0 kg at birth (<10th percentile), which would best reflect human IUGR neonates. We aimed to characterize the intestinal anatomy, physiology and microbiology of small birth weight (SW) versus normal birth weight (NW) piglets at different ages after birth. Methods: Pairs of SW (0.92±0.07 kg) and NW (weighing the average birth weight of the herd, 1.35±0.05 kg) piglets, regardless of gender, were selected in each litter. At sacrifice (2 hr, 2, 5 and 19 d after birth) digestive contents and mucosa were sampled from the jejunum, ileum and colon for bacteria count and measurement of morphometry, brush border enzyme activities and expression of a peptide transporter (PepT1). Bacterial translocation was estimated from mesenteric lymph nodes from the upper and lower intestine and spleen. Results: Relative length of the intestine (at d 2 and 5) and its water content (at d 19) were higher (p<0.05) in SW than in NW, whereas its weight per unit of length was lower (p<0.05 at 2, 5 and 19 d). Main differences in morphometrical and enzymatic parameters (decreased villous sizes by 35 % and saccharase activities by 40 % in IUGR) observed in jenunum and ileum at 2 d disappeared later on. The increase aminopeptidase activity associated with a higher expression of PepT1 in ileum (p<0.05) suggests a higher capacity of peptidic absorption between d 2 and 5. The counts of E. coli, Enterococci and Lactobacillus was higher in the mucosa and a tendency of an increased bacterial translocation in the spleen was observed in 2 d-old SW (4/6 and 1/6 positive bacterial counts in SW and NW, respectively). Conclusion: Although few significant differences were observed at birth, kinetic of intestinal maturation in IUGR neonates is subject to profound modifications during the first days of life. Outcomes on intestinal functionality require further investigations.

Title: Transcriptomic analysis of the colon in intra uterine growth restricted piglets

Romain D’INCA 1, Maela KLOAREG 2, Christele GRAS-LE GUEN 3, Isabelle LE HUEROU-LURON 1
1) INRA, UMR1079, Rennes, France 2) IRMAR UMR 6625 CNRS Agrocampus, Rennes, France 3) CHU, Nantes, France

Summary:
Objectives: Intra uterine growth restriction (IUGR) occurs spontaneously in the pig species and piglets weighing between 0.8 and 1 kg at birth (<10th percentile) can be used as model for human IUGR neonates. Although differences in intestinal maturity have been described at birth, the mid-term consequences of the in utero nutritional restriction are not known. The aim of our study was to investigate IUGR-induced effects on gene profiling of colon at the end of the suckling period. Methods: Ten 19 day-old sow’s milk fed piglets were divided into two groups according to their birth weight (IUGR: 0.92±0.07 kg and Normal Birth Weight (NBW): 1.35±0.05 kg). After sacrifice digestive content and mucosa were sampled from the colon for bacteria count and transcriptomic analysis using 20K oligonucleotide microarrays (Arizona University, USA). Differential analysis taking into account animals pairing was performed using the software package R. Genes were considered differentially expressed in IUGR vs. NBW when p <0.01 and the fold change >2. Functional relationships between candidate genes were generated using Ingenuity Pathways Analysis software. Results: Among 90 differentially expressed genes, 27 were included in two major pathways. The first pathway showed modification of expression of 10 genes involved in the protection of the mucosa, including the upregulation of SOD2, MUC1, KL, TAP2 and the downregulation of TLR3, VIM and CES3. This upregulation suggests an activation of the protective process in the colon of IUGR piglets. The NFêB-mediated activation of STAT5, LSP1 and TAP2 observed in the first pathway and the upregulation of PLC1, ITGAL and IKZF2 in the second pathway indicated an activation of the immune response in IUGR. The higher count of Gram- bacteria E. coli in the digestive content of the colon of IUGR (8.71 +/- 1.24 Log CFU vs. 7.66 +/- 0.80 Log CFU in NBW, p<0.1) and therefore the higher LPS production may activate NFêB, TNF and/or TGFâ signalling cascades, leading to a stimulation of immune response. Conclusion: Although few significant differences were observed at birth, kinetic of intestinal maturation in IUGR neonates is subject to profound modifications during the first days of life. Outcomes on intestinal functionality require further investigations.

Title: Transcriptomic analysis of the distal small intestine in intra uterine growth retarded piglets

Romain D’INCA 1, Maëla KLOAREG 2, Christele GRAS-LE GUEN 3, Isabelle LE HUEROU-LURON 1
1) INRA, UMR1079, Rennes, France 2) IRMAR UMR 6625 CNRS Agrocampus, Rennes, France 3) CHU, Nantes, France
**P0993**

**Title:**
**UTILITY OF THE INDIRECT CALORIMETRY IN THE CLINICAL HANDLING OF OBESITY**

DIANA MADRUGA 1, ROSA ANA MUÑOZ CODOCCEO 1, MARCIANO SANCHEZ BAYLE 1, PILAR QUIJADA 1, BEATRIZ GARCIA ALCOLEA 1, ANA BEGOÑA FERNANDEZ 1
1) HOSPITAL UNIVERSITARIO NIÑO JESUS, MADRID, SPAIN

**Summary:**
Objectives: The morbidity and the quality of life for children and adolescents with obesity is associated with late diagnosis, incorrect treatment, and poor adherence to therapy. In order to improve the quality of care given to these patients, it is important to have the knowledge of how to manage the therapy that is given to them.

Methods: We conducted a descriptive study in a public hospital of the city of Madrid, between January 2008 and January 2010. We reviewed the medical records of children and adolescents with obesity (body mass index > 95th percentile) admitted to our hospital during the study period, related to the therapy they received and the results of the follow-up. We also collected data on the characteristics of these patients.

Results: We included a total of 120 patients. The mean age was 14.7 years (range: 5.5-20.2 years). The most common comorbidity was hypertension (33.3%), followed by diabetes (22.5%) and dyslipidemia (20%). The most common treatment was lifestyle intervention (72.5%), followed by pharmacological therapy (33.3%) and surgery (2.5%). The follow-up was 12 months in 90% of cases. At the end of the follow-up, 60% of patients had lost weight, 75% of patients had improved their quality of life, and 50% of patients had improved their medical complications.

Conclusions: The therapy given to children and adolescents with obesity is associated with the management of the disease, and the follow-up is important to achieve good clinical outcomes.

**P0992**

**Title:**
**The morbidity of overweight (above 85th percentile) in the first two years of life**

Rana Shibli 1, Lisa Rubin 2, Hannah Akons 2, Ron Shaoul 1
1) Bnai Zion Medical Center, Haifa, Israel 2) Ministry of Health, Haifa, Israel

**Summary:**
Background: Increasing attention in the literature is devoted to childhood obesity and its related morbidity. However, the morbidity in overweight infants and young children, as expressed in hospital admissions and illnesses has not been studied. Our hypothesis was that morbidity related to overweight/obesity is already evident in infants and young toddlers. The major objectives of this study were therefore: 1) to assess the prevalence of morbidity in a sample of hospitalized infants. 2) to assess the prevalence of morbidity in overweight infants in a community based sample.

Methods: 1) Hospital admissions The study population included 2139 infants, 24 months and younger, admitted for any reason to the Pediatric Department at the Bnai Zion Medical Center between 2004-2005. We did not include babies born prematurely or with congenital, genetic or chronic illness. 2) Community based sample. We identified overweight babies (age<24 months) (weight for height percentile above 85 in at least 2 measurements, at least 3 months apart) in 8 mother and child health care facilities in Haifa subdistrict of Israel. Parents of infants were interviewed using a structured questionnaire. Results: Infants above the 95th percentile, had more admissions than expected, as well as a higher number of repeated admissions. In the second part of the study we found that developmental delay (mainly delayed gross motor skills) and snoring were significantly higher in infants above the 85th percentile. In addition, although not statistically significant, infants with overweight suffered more frequently from breathing problems, such as asthma and stridor. When the mothers were asked to assess whether their child is overweight or not only 31.6% of mothers of overweight children thought that the child was overweight. Conclusions: Although the consequences of infant and childhood excess body weight may appear to manifest in later years, this perception is inaccurate. The high admission rates of babies above the 95th percentile and the high incidence of respiratory morbidity, snoring and delayed gross motor skills in overweight infants, supports our hypothesis regarding early morbidity associated with overweight. Our findings indicate a need to actively intervene during these critical years by adopting proper eating habits, active life styles appropriate for this age and increasing the parents awareness of the importance of adhering to normal weight even in this early age group.

**P0993**

**Title:**
**UTILITY OF THE INDIRECT CALORIMETRY IN THE CLINICAL HANDLING OF OBESITY**

DIANA MADRUGA 1, ROSA ANA MUÑOZ CODOCCEO 1, MARCIANO SANCHEZ BAYLE 1, PILAR QUIJADA 1, BEATRIZ GARCIA ALCOLEA 1, ANA BEGOÑA FERNANDEZ 1
1) HOSPITAL UNIVERSITARIO NIÑO JESUS, MADRID, SPAIN

**Summary:**
Objectives: The morbidity and the quality of life for children and adolescents with obesity is associated with late diagnosis, incorrect treatment, and poor adherence to therapy. In order to improve the quality of care given to these patients, it is important to have the knowledge of how to manage the therapy that is given to them.

Methods: We conducted a descriptive study in a public hospital of the city of Madrid, between January 2008 and January 2010. We reviewed the medical records of children and adolescents with obesity (body mass index > 95th percentile) admitted to our hospital during the study period, related to the therapy they received and the results of the follow-up. We also collected data on the characteristics of these patients.

Results: We included a total of 120 patients. The mean age was 14.7 years (range: 5.5-20.2 years). The most common comorbidity was hypertension (33.3%), followed by diabetes (22.5%) and dyslipidemia (20%). The most common treatment was lifestyle intervention (72.5%), followed by pharmacological therapy (33.3%) and surgery (2.5%). The follow-up was 12 months in 90% of cases. At the end of the follow-up, 60% of patients had lost weight, 75% of patients had improved their quality of life, and 50% of patients had improved their medical complications.

Conclusions: The therapy given to children and adolescents with obesity is associated with the management of the disease, and the follow-up is important to achieve good clinical outcomes.
Summary:
Introduction. Obesity implies an alteration of the energy balance. For its treatment a correct evaluation of the resting energy expenditure (REE) is needed. Diet differences due to the use of energy substrates can be measured by indirect calorimetry (IC). Usually, predictive theoretical equations are used, but they not always reflect the real REE. Aims: 1. To estimate the REE in a pediatric population with obesity. 2. To make a comparative assessment of methods used to determine REE (IC and theoretical equations). Material and Methods: We made a transverse descriptive study calculating REE by IC in 56 patients with obesity (30 males and 26 women). The clinic nutritional evaluation was made by anthropometric indexes and a dietetic survey for three days. For REE determination a Deltatrac II calorimeter was used, backed by theoretical equations ((Schofield (Sch), WHO, and Harris Benedict (H-B)). Oxidation of nutrients was calculated using Weir equation. Data statistical analysis was made using SPSS 11.0 software. Results: The sample average age was 12.70 ± 3.10 years (3.41 to 18 range). Average REE determined by IC was 1934 ± 530 kcal/day. The metabolic index was 107.8 ± 27.8%. REE calculated by theoretical equations was from H-B, 1646 ± 517 kcal/day; FAO-OMS, 1972 ± 433 kcal/day and Sch. 1909 ± 438 kcal/day. The use of energy substrates as measured by IC was: lipids 113, 1 ± 6.1 g/day (60.5 ± 2.27%), proteins 67.03 ± 3.3 g/day (16.5 ± 0.7%) and CH 98.3 ± 11 g/day (23 ± 2.19%), showing a positive correlation with the three days nutritional survey. Determined REE values by IC were compared with theoretical results, finding greater average values from WHO equation (average: 54.41; 95% confidence interval (c): 137.21 to -28.39) but without statistical meaning (p=0.193). The only theoretical results showing significant differences (p<0.0001) with experimental determinations came from HB eq. but gave lower average values. The best agreement with IC results came from WHO (correlation coefficient intraclass: 0.856; p<0.0001). Conclusions: Indirect calorimetry is an effective method for REE determination. REE estimations from WHO equation gave the best fit to REE results determined by IC. The use of energy substrates in obesity treatment is going to allow adjustments in the quantitative composition of the hypocaloric diets, diminishing those substrates with smaller catabolism and increasing those with greater metabolism.

P0994
Title:
Mother’s knowledge, behaviour and practices about vitamin D supplementation in Tunisian infants.

Sonia Mazigh Mrad 1, Olfa Bouyahia 1, Lamia Ghasallah 1, Nadia Kasdalli 1, Samir Boukthir 1, Azza Sammoud 1
1) Children Hospital of Tunis, Tunis, Tunisia

Summary:
In our country, the prevention of rickets is based on daily vitamin D intake from birth to eighteen months. In our hospital practice, it seems that there is a decrease in this intake. Objectives: To study mother knowledge, attitude about vitamin D and factors that influenced them and to define target population who needs further education. Methods: A predefined questionnaire was submitted to 116 mothers of children aged from two months to three years and were hospitalised for acute disease in Tunis children hospital. The questionnaire was filled by the paediatrician. He included as well questions on vitamin D supplementation and questions on socio-demographics characteristics. Statistical analysis was made with statistical software program SPSS for windows version 11 using the shi 2 test. Statistical significance was set at the 0.05 level. Results: Sixty eight per cent of the infants had received vitamin D. The significant factors which influenced the knowledge about vitamin D were father and mother unemployment, low education level, and the living in a poor area. The factors that influenced significantly the practices were the one parity and the living at a distance ahead five kilometres from a primary health care. Conclusion: Given that the supplementation of vitamin D is recommended for all infants in our country, our study demonstrates that supplementation prevalence is unsatisfactorily low. Various risks factors were identified. In view of the new evidence emerging on additional preventive properties of vitamin D and of the resurgence of the hypocaloric diets, diminishing those substrates with smaller catabolism and increasing those with greater metabolism.

P0995
Title:
Risk factors of obesity in Tunisian elementary schoolchildren

Leila Essadam 1, Olfa Bouyahia 1, Ines Brini 2, Bechir Zouari 3, Monia Abdennebi 4, Samir Boukthir 1
1) UR06SP16, Tunis, Tunisia 2) Service de Médecine Infantile A. Hôpital d’enfants, Tunis, Tunisia 3) Service d’Epidémiologie. Faculté de Médecine, Tunis, Tunisia 4) 04/UR/08-03, Tunis, Tunisia

Summary:
Prevalence of obesity has increased worldwide but there is still no local data about this emergent pathology in Africa. Aim: To assess the prevalence of obesity and to investigate the association with possible risk factors in a group of 6-12 year-old schoolchildren in Tunis, Tunisia. Methods: A descriptive transversal study including a sample of 1335 elementary schoolchildren (637 males, 698 Females) (6-12 years; mean age: 9.71 ± 1.53 years) was conducted in Tunis. Personal data such as age, sex, birth weight, breastfeeding history and parental data including parental weights and heights, parental education level and occupation were collected by questionnaires completed by parents. Frequency, amount and composition of food, snack and soft drink consumption and amount of time spent in activities and exercise were collected by interviews. Height and weight were measured and body mass index (BMI; kg/m2) was calculated. The prevalence of overweight and obesity was defined based on international agreed cut-off points. Results: The overall prevalence of overweight and obese children was 10.98% and 5.96% in boys and 16.67% and 5.58% in girls (p=0.01). On splitting the study group into obese and non-obese subgroups, no significant difference was found in birth weight, breastfeeding
duration, soft drink consumption and amount of time spent in activities and exercise, nibbling and its composition. Factors associated with obesity were: mother’s overweight (28.17 ± 21.71 versus (vs) 26.4 ± 4.01) (p=0.029), high degree-educated mother and father: 26% vs 17.4% (p=0.002) (OR=1.48; 95% CI: 1.17-1.89) and 17.3% vs 11.7% (p=0.015) (OR=1.42; 95% CI: 1.08-1.88), respectively. Compared with non obese children, obese schoolchildren had at midmorning snack a significantly consumption of sorghum (19.7% vs 11.9%) (p=0.042), of slices of bread and butter (43.4% vs 32.0%) (p=0.040), of fruits (43.8% vs 28.6%) (p=0.006) and of pastry (39.7% vs 28.9%) (p=0.049). Conclusion: In Tunisian schoolchildren, overall prevalence of obesity is 5.8%. Substantial differences in food choices at midmorning snack are among dietary factors contributing to obesity development in schoolchildren. Mother’s BMI and their education level can also have influence on children’s eating behaviours. These results must be taken into account in order to design preventive strategies to counteract the increasing prevalence of obesity in schoolchildren.

P0996

Title: MULTICENTRE OPEN RANDOMISED STUDY OF THE EFFECT OF PREBIOTIC INFANT FORMULA ON SOME IMMUNE MARKERS IN TERM INFANTS

Serhiy L Nyankovskyy 1, Olena S Ivakhnenko 1, Dmytro D Dobryansky 1, Oleg G Shadrin 2, Vyacheslav V Berezhnych 3, Mykola L Arava 4
1) National Medical University, L’viv, Ukraine 2) Institute of Paediatrics, Obstetrics and Gynecology AMS of Ukraine, Kyiv, Ukraine 3) National Medical Academy of Post-graduate Education, Kyiv, Ukraine 4) National Medical University, Odesa, Ukraine

Summary:
Objective: To examine the effect of a standard infant formula enriched with a specific mixture of oligosaccharides on the saliva SIgA, alpha-defensins HNP1-3 and faecal lysozyme levels. Methods: Within 2 weeks of life infants of whom the mothers had decided not to breastfeed were randomly allocated to one of 2 groups. 80 infants in the intervention group received prebiotic formula containing a specific mixture of 0.8 g galacto-oligosaccharides (GOS)/fructo-oligosaccharides (FOS) per 100 ml. 80 infants in the control group were fed with the same formula but without GOS/FOS. The reference group of 80 breastfed infants was used for comparison of the results. Saliva and faecal samples were taken on the day of inclusion into the study and after 2 months of exclusive feeding with selected formula or breast milk. Saliva SIgA, alpha-defensins HNP1-3 and faecal lysozyme were determined by ELISA testing. Gut microbiota composition was assessed in 2 months after onset of the study using standard bacteriological methods. Growth parameters (weight, length, head circumference and BMI) were determined at enrolment and in 1 and 2 months. Results: The groups were not different in terms of average birth weight, length, head circumference, BMI, Apgar scores, age and growth parameters at enrolment. Feeding with breast milk or specific formula did not produce any reliable effect on growth within the period of observation. Both the bifidobacteria and lactobacillus numbers in faeces were higher in children fed enriched formula than in babies consuming standard formula with no difference in comparison with the reference group data. Comparing with the control group infants received prebiotic formula showed reliably higher saliva content of SIgA (45,62±37,54 vs.33,36±27,54 mcg/ml; p=0.04) and faecal concentration of lysozyme (0,48 [0-3,32] vs. 0,14 [0-1,28] mcg/ml; p<0,001). At the same time saliva alpha-defensin levels were significantly lower in the infants of intervention group in comparison with the control values (8,055 [0-23,32] vs. 14,81 [0-88,67] pg/ml; p<0,01). With the exception of faecal lysozyme content no differences were found between SIgA and alpha-defensin values in the intervention and reference groups. Conclusion: Our data suggest that formula supplementation with a GOS/FOS mixture influences infant’s immune response in the way which is similar to the effect produced by breast milk that may be beneficial for the infant’s health.

P0997

Title: Actual Protein Intakes Are Less than Assumed Intakes in Preterm Infants Fed Fortified Human Milk

Sertac Arslanoglu 1, Ekhard E. Ziegler 2, Guido E. Moro 1
1) Center for Infant Nutrition, Macedonio Melloni Hospital, University of Milan, Milan, Italy 2) Fomon Infant Nutrition Unit, Department of Pediatrics, University of Iowa, Iowa City, US

Summary:
Background: Fortified human milk (HM) is the preferred feeding for VLBW infants, however nutrient intakes achieved with fortified HM fall short of meeting nutrient needs due to enormous variability in composition of expressed HM. Despite this variability, HM fortification is still done based on the assumptions of average-fix values for the nutrient composition of HM. Objective: To compare assumed and actual (measured) protein and energy intakes in preterm infants fed fortified HM. The study tested the hypothesis that infants fed fortified HM, in fact, may not being provided with the assumed protein and energy intakes. Methods: The data in this study were collected in a previous randomized controlled trial assessing the effects of an adjustable human milk fortification regimen on protein intake and growth of a group of preterm infants. Infants with birth weights between 600-1750 grams and gestational ages between 26-34 weeks were fed their own mother’s milk or banked donor milk and then randomly assigned to either the new adjustable fortification regimen (ADF) or the standard regimen (STD). For the current evaluation, the primary outcomes were protein content and intake (assumed and actual), with energy density and intake as secondary outcomes. Assumed protein and energy intakes were calculated based on volume intake, and fortifier amount added to HM, assuming a fix-average nutrient content for HM. Actual protein and
energy intakes were obtained by macronutrient analysis of the fortified milk samples of each baby collected to form weekly pools. Results: The data of 32 infants were evaluated for the current analysis (16 ADJ, 16 STD). The measurement of nutrient composition of milk samples showed that actual protein intakes were significantly and consistently lower at all times than assumed protein intakes in both groups throughout the study. The mean assumed vs actual protein intakes were 3.5, 3.5, 3.5 vs 2.9, 2.9 and 2.8 g/kg/d in the STD; and 3.7, 4.0, 4.2 vs 2.9, 3.2, 3.4 g/kg/d, in the ADJ group (study weeks 1, 2, and 3 respectively) (p<0.0000001). Conclusion: Standard HM fortification based on assumptions is very far from matching the high protein needs of preterm infants. Our results bring the concrete evidence that, in practice the protein content of HM during the fortification period is lower than that assumed and variable. Individualized fortification may be the solution of the problem of protein undernutrition.

P0998

Title:
Elemental Diet (ED) Reverses Gastrointestinal (GI) and Dermatologic Morbidity in an Infant with Epidermolysis Bullosa (EB)

Simon S Rabinowitz 1, Yumei Ding 1
1) Richmond University Med Center, Staten Island, USA

Summary:
Objective: To describe the clinical course of a newborn with diarrhea, failure to thrive, and blistering disease that responded to ED Methods: Retrospective case review of medical record. Results: The proband was a full term, AGA, Afro-American born to a 33-year mother after an unremarkable gestation. He spent nine days in the NICU because of multiple neonatal skin blisters and was clinically diagnosed as EB. He was readmitted at 21 days of life (having gained only 20z) and three additional times in the next three months for recurrent diarrhea, poor feeding, decreased urine output, hyponatremia, hypoalbuminemia, hematocrit, and failure to thrive. A regional EB center obtained two skin biopsies that suggested then confirmed the diagnosis of simplex type epidermolysis bullosa. The blisters were typical of EB throughout his body and easily ruptured when touched. They were painful, pruritic, and most prominent on the back, extremities and diaper area. He had loose stools 7-8 times per day, and shortly before the second visit to the regional EB center, they became bloody and they recommended a gastrostomy tube. While waiting, he was then started on ED because of the bloody diarrhea. There was a rapid improvement in his diarrhea, hematocrit, serum Na, and albumin. He quickly began to gain weight, achieve catch up growth, and never received the feeding tube. Unexpectedly, there was also a dramatic improvement in his blisters and a markedly decreased number of new blisters. He has now been on ED for 2.5 years with restriction of dietary antigens in his solid food diet. There has been sustained growth, normal stools, no further hospitalizations, and infrequent, minor new bullae. His family has moved and his new physicians questioned the initial diagnosis of EB after examining the child’s skin. Conclusions: EB is a rare genetic disease resulting from mutations in proteins that anchor the epidermis and dermis layers. Even more unusual is epidermolysis bullosa acquisita (EBA), an autoimmune condition in which autoantibodies react against various anchoring proteins. About 25 cases of childhood onset EBA have been reported with the earliest onset at 3 months. This report either describes a case of neonatal sensitization and EBA or suggests that EB itself may require both a genetic mutation and an environmental trigger to become phenotypically active. The potential value of a trial of ED for all infants with EB is a provocative question.

P0999

Title:
Dietary pattern, height, weight centile and BMI of affluent school children and adolescent from three major cities of Pakistan

sina aziz 1, umme rubab 1,rukhsana majeed 2, wajeeha noorulain 1, kehkanash hossain 3, shaheena manzoor 4
1) Dow university of health science, karachi, pakistan 2) bolan medical college, quetta, pakistan 3) sindh institute of urology transplantattin, karachi, pakistan 4) institute of public health, lahore, pakistan

Summary:
Objective: Comparison of dietary pattern, height, weight centile and BMI of affluent school children and adolescent from three major cities of Pakistan Methods: This study is part of an ongoing nationwide project of Higher Education Commission (HEC) Pakistan, to develop growth centile charts. A multistage stratified sampling design was employed covering private schools of three major cities Karachi, Quetta and Lahore from Sindh, Baluchistan and Punjab, the three major provinces of Pakistan. Survey was done in 4 months. Stratification was performed according to type of school, age level and sex. Socio-economic group was based on income, computer, fridge, TV, car etc. Students from Class 1-10 representing age of 6 to 17 years were included; children were divided into groups A, B, and C representing age of 6-9, 10-13, and 14-17 years respectively. Data of 652 school children is presented. Pretested questionnaires were used to interview the children to obtain information on their dietary pattern. The children included were healthy with no history of chronic infection or frequent hospitalization and immunization up to date as per schedule of the EPI program of the country. Height and weight were recorded using international standards and a 24 hour diet chart was obtained using specially designed questionnaires. The reference definitions used were those given by Center for Disease Control (CDC). Food records were subjected to USDA food exchange list. The master files of the various forms were used as inputs to generate the necessary tables using the Statistical Package for social sciences (SPSS) for Window 6.0. Results: In girls: Total calories, carbohydrates and protein intake of group A and B from Quetta was low
(p<.005) compared to other cities. In group C no significant difference in three cities. Fat intake was same in all groups. In boys: Total caloric intake, carbohydrates and protein intake of group A, Quetta was significant compared to Karachi and Lahore (p<.005). In group B and C no significant difference in three cities Height and weight of majority of children and adolescent (girls and boys) from Group A and B, on NCHS centile, was 50-90 centile while group C were 25-50 centile. BMI (kg/m2) of girls and boys of group A of 3 major cities was not markedly different from each other. In group B, BMI was highest in girls of Quetta, mean 22±5, while in group C BMI was in boys of Quetta 25±4

P1000

Title:
Effect of teacher education on prevalence of obesity in kindergarten children

Suntaree Ratanachu-ek 1, Pranee Muengnoi 1
1) Queen Sirikit National Institute of Child Health, Bangkok, Thailand

Summary:
Effect of teacher education on prevalence of obesity in kindergarten children Suntaree Ratanachu-ek MD, MS, Pranee Muengnoi MD Department of Pediatrics, Queen Sirikit National Institute of Child Health, Bangkok Abstract Background: Childhood obesity is increasing worldwide and becoming an important health problem nowadays. Providing the knowledge regarding obesity to teachers should reduce the severity of obesity and prevent childhood obesity. Objectives: To monitor the prevalence of over-nutrition and obesity in the kindergarten children over a 3-year period, and the effects of teacher education. Material and Method: Kindergarten children from 7 schools in Bangkok were enrolled in this cohort study between the years 2005-2007. Three school groups were classified by number of obesity-informed teachers, as follow: group I (uninformed teacher), group II (few informed teachers), and group III (all informed teachers). Nutritional status was assessed by % weight for height (%W/H), using Thai Growth Reference, 1999. After first measurement, all teachers of group III were given information regarding childhood obesity. After second measurement, the uninformed teachers were informed. The prevalence of over-nutrition and obesity are compared over 3 years, and within 3 groups, using Chi-square test. Results: A total of 1,232 kindergarten children were enrolled initially. The prevalence of over-nutrition and obesity were 33% and 17.4% in 2005; 32.8% and 17.2% in 2006; 28.8% and 15.3% in 2007, respectively. The prevalence of over-nutrition in the third year decreased significantly from the first 2 years. Comparing within 3 groups, the prevalence of over-nutrition decreased significantly in group III by the year 2006; but decreased insignificantly by the year 2007; because of the teacher education. The prevalence of over-nutrition decreased insignificantly in each group over 3 years. The prevalence of obesity decreased insignificantly within 3 groups and over 3 years. Conclusion: The teacher education has a significant effect on reducing the prevalence of over-nutrition in the kindergarten children. Granted from Queen Sirikit National Institute of Child Health

P1001

Title:
High sodium and low iron: nutritional composition of home made meals for infants and young children determined by chemical analyses

Pérola Ribeiro 1, Dirce Maria Sigulem 1, Lisie Ferreira 1, Tania Beninga Morais 1
1) Federal University of São Paulo, São Paulo, Brazil

Summary:
Objectives: Home-prepared foods do not always have an adequate nutritional profile. The aim of this study was to evaluate the nutritional composition of home-made meals (HMM) for children from 7 to 18 months old of a low income population of São Paulo, Brazil. Methods: Sixty children were selected from families registered in a primary health care center. Samples of the children’s day meal were taken for chemical analyses to determine their protein, iron, sodium and energy values. The chemical analyses results were compared to guidelines for commercial baby foods (European Community Directive and ANVISA, Brazil): Protein= minimum 3.0g/100Kcal; Iron= 6mg/100g; Sodium=maximum 200mg/100g; Energy = minimum 70Kcal/100g. The children’s weight-for-age (WFA) and height-for-age (HFA) indexes were assessed and hemoglobin concentration was measured. Results: The table shows the chemical results of the HMM, according to the age. No significant differences were seen in the nutritional quality of HMM, according to age. All samples of HMM had iron values lower than the recommended value while all samples had sodium values higher than the recommended. Energy density and protein values were lower than the recommended in 67% and 11% of the samples, respectively. For WFA and HFA indexes, 98% and 87% of the children, respectively, had Z scores between -2 and +2. Sixty per cent of them had hemoglobin concentration lower than 11.0 g/dl. Conclusions: HMM did not have an adequate nutritional profile. Low energy density, low iron contents and high sodium concentration were the main nutritional inadequacies. Even though most of the children showed nutritional status within the normal limits, the prevalence of anemia was alarming.

P1002

Title:
Nutritional quality and osmolality of home-made enteral diets and their effect on growth parameters in pediatric patients in home enteral nutrition therapy

Valdired Francisca Neves Santos 1, Tania Beninga Morais 1
1) Food Quality Control Laboratory - Federal University of São Paulo, São Paulo, Brazil

Summary:
Objectives: Nutritional quality and osmolality of home-made enteral diets for pediatric patients are unknown. The aim of this study was to evaluate the nutritional quality of home-made enteral diets and their effect on growth parameters. Methods: Thirty pediatric patients, cared by three private home-care firms, requiring enteral nutrition and receiving home-made enteral diets were enrolled in this study. Enteral diets consisted of three milk-based feeds, two soup-based feeds and one fruit juice daily. Samples of the milk-based (MBD) and soup-based (SBD) prescribed diets were taken for chemical analyses to determine their macronutrients, fiber, energy and osmolality values. The children's weight-for-age (WFA) and height-for-age (HFA) indexes were assessed at the time of entry into home nutritional therapy (HNT) and at the moment of the study. Results: The primary diagnoses were hypoxic encephalopathy, microcephaly, hydrocephalus, GM1-gangliosidosis, mitochondrial disorder, cleft palate, progressive muscular dystrophy, bronchopulmonary dysplasia, metachromatic leukodystrophy and the syndromes of Alpers, Cushing, LADD, Leigh, Sturge-Weber, Pena-Shokeir, Miller-Dieker and West. Nutrients were delivered through a gastrostomy in 28 patients. All patients were bed-fast, 27 required mechanical ventilation. The median duration of the HNT was 24 months. The patients' mean age was 7 years. SBD had macronutrients, fiber and energy values significantly lower when compared to MBD. The osmolality of SBD was significantly lower (medians of 310 and 580 mOsm/Kg, respectively). The mean percentual ratios of expected values/measured values of macronutrients and energy for the MBD corresponded to approximately 70% of the prescribed values. Conversely, for the SBD the measured values corresponded to less than 50% of the prescribed values, except for the carbohydrate values. During the HNT the children's WFA index was within the normal limits (Z scores medians = -1.0 and -0.9, at the entry into HNT and at the moment of the study, respectively) while the HFA index showed a negative evolution (Z scores medians = -1.6 and -2.1, at the entry and at the moment of the study, respectively). Conclusions: Home-made enteral diets rendered inconsistent levels of macronutrients and energy. However, they had no negative effect on the children's weight. Further studies are needed to assess whether the failure on linear growth can be attributed to home-made diets.

P1003
Title: Protein Energy Malnutrition in village of Yetti, Muscat
Tawfiq Taki Al-Lawati 1
1) Royal Hospital, Muscat, Oman

Summary:
Protein Energy Malnutrition (PEM) is a common problem in Oman in spite of great governmental efforts to reduce its prevalence. In Muscat 13% of children under age of 5 years have severe PEM. The highest prevalence was 26% in some areas of the country. Concerns were raised by local clinicians about high prevalence of PEM in children in Yetti. Aims: To evaluate the nutritional status of children aged 12-35 months in the village of Yetti. Objectives: 1) To study the prevalence of malnutrition in children aged 12-35 months in Yetti, 2) Study the macro and micronutrient intake of children with PEM 3) Examine the dietary habits and some socio-economic factors influencing malnutrition in Yetti. Methods: Cross sectional community based study using immunization register to identify children in the desired age range. Verbal consent was obtained form the parents of the selected children. A questionnaire was filled in by the mothers of the enrolled children regarding child's health, dietary habits and socioeconomic status of the family. Height and weight of the children were taken along with 2 sets of 24-hour dietary recall. Biochemical analysis of 24 hour food intake was done using FOODWORKS software. Results: 50 children fell in the selected age range. The prevalence of malnutrition in children aged 1-3 years was 26% for underweight, 20% for stunting and 14% for wasting. The mean Z score for the selected population was -1.39 for weight for age, -0.96 for height for age and -0.95 for weight for height. The mean caloric intake for the 50 children was 1107 KCal/day while that of wasted children was 800 KCal/day. All of vitamin A, calcium, folate and zinc were consumed in significantly lower amounts than recommended by FAO/WHO. There was no association between financial status of the family, birth weight of the child, breast-feeding, method of child feeding and PEM. Positively associated factors with malnutrition included; maternal illiteracy, inappropriate maternal assessment of child's intake, child having 2 or less snacks a day, having 2 or less air conditioners in the house and having more than 4 children in the house. Conclusion: There is a large burden of macro and micronutrient deficiencies in children aged 1-3 years in Yetti. More efforts are needed to educate the society about complementary and weaning foods. Wider introduction of fortified milk formula in areas affected with malnutrition will help in decreasing the burden of malnutrition.
Summary:
The objective of this work was to determine plasmatic Zn, leukocyte Zn and reduced erythrocyte glutathione levels and to evaluate the nutritional state and the Zn dietary intake in children and adolescents with autoimmune hepatitis. Casuistry included patients with autoimmune hepatitis between 10 and 18 years of age admitted to the Clinic of Pediatric Hepatology of the School Hospital of the State University of Campinas –HC/Unicamp and controls with similar age. The nutritional state of the patients was evaluated by means of anthropometry and electric bioimpedance. Dietary intake was obtained using the three-day food diary technique. Statistical analysis was performed using the SPSS Program with Mann-Whitney test for non-parametric variables, t-Student test for parametric variables and Pearson test to evaluate correlation. The level of significance adopted was of 5%. Twenty-two patients and 22 controls with age an average of years 13.30±2.05 and 13.07±2.06, respectively were evaluated. The average value of leukocyte Zn (pmol/1000000 cells) was of 225.89±171.94 in the patient group and of 249.21±254.59 in the control group with no significant difference. The average of plasmatic Zn values (mcg/dl) in the patient group was 71.52±12.22, while the value in the control group was 79.56±11.56 with significant difference. Correlation between leukocyte Zn and plasmatic Zn was not found, nor was a correlation found between Zn dietary intake with leukocyte Zn and plasmatic Zn. The average daily Zn intake was of 9.47±3.67 mg between patients and 10.92±4.58 mg in the control group with no significant difference. The result of reduced glutathione dosage (mg%Ht) was of 59.18±26.44 in the patient group and 53.34±22.30 in the control group with no significant difference. The comparison of the percentage of fat surveyed for the method of the sum of skinfolds revealed a higher value for the patient group (26.16±9.5%) in relation to the control group (19.09±6.6%) with significant difference. In conclusion, reduction of plasmatic Zn levels, absence of stress oxidative and increase of body fat percentage was observed in patients with autoimmune hepatitis.

P1005

Title:
THE QUALITY OF PROBIOTIC SUPPLEMENTS

Vaidotas Urbonas 1, Jadvyga Jurseniene 2
1) Vilnius University Children’s Hospital, Vilnius, Lithuania 2) National Health Investigation Centre, Vilnius, Lithuania

Summary:
Objective. Consumption of probiotic supplements is increasing worldwide. Sometimes the quality of these product is not good and the public and health professionals should be aware that the labelling of some probiotics may be misleading, in terms of both the microbiological content and possible beneficial effects. Methods. The purpose of the study was to assess the survival of lactobacteria and bifidobacteria in different formulations after exposing the product to 0,1N HCl for 1 respectively 2 hours followed by addition of phosphate buffer to obtain a neutral pH. We investigated the microbiological content of 7 brands of probiotics bought in the pharmacy in Vilnius. Microbiological investigation was performed from probiotic capsules or tablets. The preparations were cultured on tomato juice agar (OXOID CM 0113). Results. After 1 hour of incubation in 0,1N HCl probiotic bacteria decrease from 10.2% to 99.6% and from one product there was no growth at all (Table1). After 2 hours of incubation the decrease of probiotic bacteria decrease from 10.2% to 99.5% and from one product there was no growth at all (Table1). Conclusions. 1. Gastric acid could substantially decrease the growth of probiotic bacteria. 2. The quality of some probiotic supplements may be insufficient.

P1006

Title: Composition of snacks taken to school by students from 04 to 06 years, registered in private schools of Santos, SP, Brasil

Dafni Paiva Gomes 1, Vera Regina M Dishchekenian 1, Domingos Palma 1, Maria Arlete M S Escrivão 1, Fábio Ancona Lopes 1
1) UNIFESP - Federal University of São Paulo, São Paulo, Brasil

Summary:
Objective: Evaluate the nutritional composition of the snacks taken to school by students from 04 to 06 years, admitted to four private schools in Santos, SP, Brasil. The data has been collected by the researcher during the school routine of break time, using an observational questionnaire. The records received statistics analysis by Epi info Program, version 6.04. The nutritional adequacy of carbohydrate, protein, calcium, iron and fiber, followed DRI’s (Diet Reference intake/2002) guidelines and the composition of total fat, saturated fat and trans fatty acids has been evaluated according to American Heart Association AHA/2006). Results: It has been observed that there was a quality and amount inadequacy of food taken by the students to the school. There was an excessive consume of manufactured products, besides a low offering of fruits and natural products. Most of the students surpassed the recommended amounts of carbohydrates and fats (95%), saturated fats (65%), sodium (70,8%) and trans fatty acids (27,5%) of the studied meal. On the other hand, 79,2% of the students hasn’t reached the at least 70% from the advice of protein and 82,5% hasn’t attained 70% from the advice of fibers. It has been observed that the exaggerated size of the packages refers to portions that exceed children’s
needs in about 3.5 times. Conclusion: It is suggested a better supervision of manufactured products content, defining the portion size and its indication to every age. Guiding families to be conscious about industrialized products quality is fundamental to prepare citizen as consumers, preventing chronic diseases like Obesity, Dyslipidemia and Diabetes.

Keywords: school snacks, manufactured food, nutritional adequacy

P1007

Title: Nutritional assessment of Trans-fatty acids in labels of sandwich cookies.

Camila Pugliese 1, Vera Regina Mello Dishchekenian 1, Fernanda Cobayashi 1, Rose Vega Patin 1, Maria Arlete Meil Schimmith Escrivão 1, Fernanda Luisa Ceragioli Oliveira 1
1) Federal University of São Paulo, São Paulo, Brazil

Summary
This study aimed to compare different brands of sandwich cookies, according to their prices and their content of Trans-fatty acids. We evaluated the composition of total fat, saturated fat and Trans-fatty acids presented, according to the current legislation of nutrients and ingredients shown on product labels. There is also a comparison between the average amounts of fat and the prices of each cookie. We collected data from the nutrition facts table presented on the package of thirty one different brands of sweet filled sandwich cookies. These brands were randomly identified by a number, not following any criterion. The collection of information was made through visits to several supermarkets, mini-markets and also through the research made on manufacturers’ websites and calls to the customer service of their products. The results of this study demonstrate that there were no significant differences regarding the content of Trans-fatty acids among “cheaper” cookies and “more expensive” cookies; that the frequency of hydrogenated vegetable fat as an ingredient for preparation of the product was higher among “cheaper” brands and the amount of total and saturated fat was higher in “more expensive” cookies. It is important to have constant governmental surveillance on the labeling of products, since many of these are very likely to be questioned about the information presented.

P1008

Title: Risk factors for nutritional changes in children attended at the clinic of Clinical Nutrition and Dietetics, Federal University of São Paulo, São Paulo State, Brazil.

Cristiane Chiantelli Cláudio 1, Vera R. M. Dishchekenian 1, Domingos Palma 1, Maria Arlete Meil Schimmith Escrivão 1
1) Federal University of São Paulo, São Paulo, Brazil

Summary: The influence of socioeconomic and demographic factors such as family income, education, house conditions, basic sanitation and access to health care are crucial on children’s health and nutrition. The present study aims to verify the nutritional status, health characteristics, socioeconomic levels, eating habits and family history of patients from 0 to 16 years old, both gender, attended at the clinic of Clinical Nutrition and Dietetics, Discipline of Nutrology, Department of Pediatrics, Federal University of São Paulo, São Paulo State, Brazil, from January to December 2006. A questionnaire was made concerning questions with relevant answers. The records were analyzed, data were collected and the questionnaire was filled in. For the analysis, Epi info version 6.04 was used. There was a prevalence of overweight. The educational level of both mothers and fathers were similar. The prevalent income was R$1050,00 (U$ 487,00). Most often, families had 3 to 5 members and lived in houses up to 4 rooms. Maternal conditions during pregnancy were considered good and most of the children were born with weight more than 3 kg and lenght of 48 cm. The exclusive breast feeding was prevalent and the introduction of food did not follow the recommendations from WHO. We concluded that changes in nutritional status as malnutrition and overweight is associated with social cultural and economic factors.

P1009

Title: Prevalence, impact and management of malnutrition in pediatrics unit

Véronique Groleau 1, Corentin Babakissa 1
1) Centre hospitalier universitaire Sherbrooke, Sherbrooke, Canada

Summary: Dr Véronique Groleau, Dr Corentin Babakissa Department of pediatrics, Sherbrooke, Quebec, Canada Objective: Many studies suggest that malnutrition is frequent in pediatric admissions. Malnutrition is known to have an important impact on the prognosis of sick children and hospitalisation length and thus, on health system costs. The under evaluation of this problematic is probably due to the lack of knowledge about nutritional risk in
pediatrics. No study has been reported yet on this topic in province of Quebec. The objectives of this study were to establish prevalence of nutritional risk and malnutrition in pediatric admissions, define the impact of malnutrition on hospitalisation length and evaluate its management in hospital settings. Methods: A prospective cohort of hospitalised children (0 to 18 yoa) on yard or intensive care at the “Centre Hospitalier Universitaire de Sherbrooke” was studied from June 1st to July 31th 2007. Prevalence of nutritional risk was evaluated at admission with a nutritional pediatric risk score published in 2000. Prevalence of malnutrition was defined according to Canadian Pediatric Society’s (CPS) recommendations and Waterlow classification. Impact of malnutrition was evaluated by correlating hospitalisation length and nutritional status at admission. Nutritional management was evaluated with evolution of nutritional status during hospitalisation and comparison of nutritional intake received vs. recommended. Results: In the 173 patients enrolled, 79.8% were at risk for malnutrition on admission. Prevalence of malnutrition according to CPS and Waterlow was respectively 28 and 35%. Length of stay was significantly correlated to nutritional status (r = -0.268; p<0.05). Skin folds significantly decreased during hospitalisation (28 ±9.9 vs 24 ±7.8mm; p<0.01). Children received 71% of caloric and 132% of protein recommended. Children with nutritional risk received a significantly lower caloric intake during hospitalisation (66 ±26 vs 88 ±37%; p<0.01). Conclusion: We report a high prevalence of nutritional risk and malnutrition in pediatric admissions. Our results suggest a prolonged length of stay due to malnutrition, an insufficient nutritional management and a degradation of nutritional status during hospitalisation. Application of CPS recommendations and the intervention of a nutrition team would improve patient’s nutritional management.

P1010

Title:
Breast milk transforming growth factor-£¿2 attenuates inflammatory responses in immature human intestinal epithelial cells by inhibiting the ERK pathway through a SMAD6-dependent mechanism

Samuli Rautava 1,   N. Nanda Nanthakumar 1,   Alix Dubert-Ferrandon 1,   Lei Lu 1,   W. Allan Walker 1
1) Mucosal Immunology Laboratory of the Massachusetts General Hospital for Children, Boston, Massachusetts, USA

Summary:
Objective Necrotizing enterocolitis (NEC), a devastating intestinal inflammatory condition affecting premature neonates, results in part from the immaturity of mucosal immune responses. Breast milk is known to protect from NEC. We hypothesized that transforming growth factor-£¿2, an immunoregulatory cytokine abundant in breast milk, may have a direct anti-inflammatory effect on immature intestinal epithelial cells (IECs). Methods As a model for inflammation, the human fetal small intestinal epithelial cell line H4 was stimulated with 1 ng/ml IL-1£¿ with or without TGF-£¿2 at the breast milk concentration 3 ng/ml. The pro-inflammatory cytokines IL-8 and IL-6 mRNA and protein were measured by qRT-PCR and ELISA, respectively. Cytokine concentrations were standardized to total cellular protein. Results Stimulation with IL-1£¿ resulted in a 6800-fold increase in IL-8 mRNA and secreted IL-8 protein from 0 to 3639 (b186) ng/mg protein. TGF-£¿2 reduced IL-1£¿-induced IL-8 mRNA response by 79% (p=0.048) and secreted IL-8 protein by 23% (p=0.006). Similarly, IL-6 mRNA was increased 69 fold by IL-1£¿ and this response was reduced 83% by TGF-£¿2 (p=0.025). Secreted IL-6 protein increased from 61 (b10) to 2107 (b138) ng/mg protein in response to IL-1£¿ and the response was reduced 48% by TGF-£¿2 (p=0.0004). Immunoblotting was implemented to determine the signaling pathway mediating the effects of TGF-£¿2. Stimulation with IL-1£¿ lead to rapid phosphorylation of ERK, which was markedly inhibited by TGF-£¿2. To assess whether ERK activation is necessary for the response to IL-1£¿, ERK signaling was blocked by the specific inhibitor PD 98.059. Under this condition, IL-1£¿-induced IL-8 and IL-6 production was reduced 37% (p=0.0006) and 28% (p=0.007), respectively. Since SMAD6, an inhibitor of intracellular signaling, is activated by TGF-£¿2, the role of SMAD6 in inhibiting IL-1£¿ responses was investigated by siRNA knockdown. Knockdown efficiency was confirmed by qRT-PCR. The inhibitory effect of TGF-£¿2 on IL-1£¿-induced IL-8 and IL-6 production was totally abrogated after knockdown of SMAD6 by siRNA. Conclusion TGF-£¿2 attenuates IL-1£¿-induced pro-inflammatory cytokine production in immature human IECs by inhibiting activation of the ERK pathway. The anti-inflammatory effect of TGF-£¿2 is dependent on SMAD6. The protective effect of breast milk against development of NEC may be mediated by TGF-£¿2, which might provide a novel means to prevent NEC in premature neonates.

P1011

Title:
Direct immuno-modulatory properties of galacto-oligosaccharides on TNF£¿D mediated inflammation in human intestinal epithelial cells.

A. Dubert-Ferrandon 1,   N. Nanthakumar 1,   S. Rautava 1,   L. Lu 1,   W.A. Walker 1,   D.S. Newburg 1
1) Massachusetts General Hospital, Charlestown, MA, USA

Summary:
The non-digestible prebiotic galacto-oligosaccharides (GOS) are believed to modulate bacterial composition and stimulate beneficial gut microbiota. They are found in human milk; they promote bifidobacteria growth in the infant gut and have been shown to have beneficial immune effects in infants. However it is not clear whether this effect of GOS is by indirect modulation of the microbiota or direct stimulation of the innate system of the intestinal mucosa. This project aims to determine the potential direct immuno-modulatory properties of GOS in adult human colonic NCM-460 cells. Confluent NCM-460 cells were stimulated with TNF-£¿N in the presence or absence of GOS and assayed for IL-8 and MIP-3£¿N stimulation, mRNA
P1012

Title:
ENTERAL NUTRITION BY GASTROSTOMY IN PEDIATRIC PATIENTS: EXPERIENCE IN A HOSPITAL OF COLOMBIA

Wilson Daza 1, Silvana Dadán 2, Jackeline Mejía 3, Claudia Romero 3, Laritza Olarte 3
1) Clínica del Niño JB, Bogotá, Colombia 2) Universidad El Bosque, Bogotá, Colombia 3) Universidad San Martín, Bogotá, Colombia

Summary:
Objective: to characterize the group of patients with gastrostomy and evaluate their nutritional response. Patients and Methods: a descriptive and retrospective study was made in 84 patients in order to analyze their clinical record in the Pediatric Nutrition & Gastroenterology Department at Clínica del Niño JB; Bogotá, Colombia, between August 1996 and May 2007. Results: Male gender predominated (54%), 30% were infants, 29% preschoolers and 19% adolescents. The gastrostomy was most frequent in neurologopathological patients (77%), followed by obstruction of the digestive tract (17%) and Cystic Fibrosis (5%). The tubes used were foley in 20 patients (25%), silicone in 18 patients (22%), polyurethane in 17 patients (21%) and gastrostomy button in 3 patients (4%). The diameter used more frequently was 18 french (26.9%) and the least used was 10 french (1%). The complications were more frequent in children under 6 months old and in the post-operative period (Chi2= 8.93 p < 0.05; RR = 2.4 CI of 95%). The greatest number of complications (34%) occurred with foley tubes. Among them: infection, fistulas, dilatation of the gastrostomy orifice, exit and obstruction of the tube. The patients’ nutritional status (n=74) according to W/A in the moment of gastrostomy was malnutrition in 68.9%, risk of malnutrition in 8.1% and normal in 23%. 37.9 months post-gastrostomy, 60.9% of the children continued malnourished. Conclusion: gastrostomy is the enteral nutrition method ideal for children with cerebral palsy that have feeding difficulties or for children with pathology requiring greater ingest and are not capable to achieve it through the mouth. It is important to implement vigilance and control measures, supervised by a multidisciplinary team to prevent the appearance of complications. It is important to avoid the Foley tubes in gastrostomy, since they proved to be responsible for the majority of the complications in our Hospital, both infectious and mechanical in the place of gastrostomy.

P1013

Title:
PARENTERAL NUTRITION BETTER THAN ENTERAL NUTRITION IN PEDIATRIC INTENSIVE CARE UNIT?

Wilson Daza 1, Wilson Daza 2, Carolina Ortega 2
1) Head of Pediatrics Nutrition & Gastroenterology Department, Clínica del Niño JB, Bogotá, Colombia 2) Pediatrics Gastroenterology & Pediatrics Department, Universidad El Bosque, Bogotá, Colombia

Summary:
Objective: We compared both clinical and biochemical parameters in children that received parenteral nutrition and the ones with enteral nutrition in pediatric intensive care unit (PICU) to describe the outcome and complications in each one group. Patients and methods: 121 hospitalized patients due to different causes (ages: 1 month - 17 years old); male (53,3%) and female (47,7%) were analyzed in PICU (January 2003 – December 2003) through a descriptive and retrospective study. Results: 56 patients received parenteral nutrition (PN) and 65 with enteral nutrition (EN). The indications from PN were mostly gastrointestinal tract diseases and their complications (42%) while the EN was mainly in patients with respiratory (54%) and neurological (45%) diseases. The central vein access (97%) was the most used in the PN and the naso-duodenal tract (91%) in patients with EN. The mortality was of 11% in the EN vs. 32% in the PN. There were significant differences in the entry and exit values of lymphocytes count in the EN group as well as in the PN group (NE, p = 0.036, 1 student; NP p = 0.042, 1 student). Nevertheless, there were not any differences related to lymphocytes count between PN and EN (entry p = 0.633; exit p = 0.24). We observed a greater number of metabolic complications (hypotremia, hypokalemia, hypoglycemia, hyperglycemia, hypercholesterolemia and hypertriglyceridemia) in patients with PN. The average duration of EN was 10 days (DE +/- 8.5) and 7 days (DE +/- 5.5) in patients with PN. Conclusion: There was not any change in the weight, independent of the type of nutrional support (EN/PN) and in both, the limphocytes count improved. EN and PN are appropriate, however, EN presents less metabolic complications.
PREVALENCE OF FOOD ALLERGY TO BEEF IN GREEK CHILDREN WITH IGE MEDIATED ALLERGY TO COW’S MILK

Ioannis Xinias 1, Antigoni Mavroudi 1, Antonis Platnaris 1, Olga Vrani 1, Kleomenis Spirogliou 1, Theodouli Papastavrou 1
1) 3rd Pediatric Clinic, Aristotle University, Thessaloniki, Greece

Summary:
Introduction: Allergy to cow’s milk protein (CMA) is estimated from 2-5% of children. The coexistent cross-reacting allergy to beef is reported from 13-20% worldwide. However, this prevalence in Greece has not been investigated. Aim and patients: The aim of this study is to investigate the prevalence of beef allergy in children with known cow’s milk allergy in Greece. Patients and methods: we studied 51 children in total (27 boys, 24 girls) with IgE mediated cow’s milk allergy. The diagnosis has been based on clinical and laboratory criteria (specific IgE, typical or atypical clinical manifestations of CMA). Total IgE was determined, as well as specific IgE against beef’s protein was, by using the method of Unicap system (Diagnostic, Uppsala, Sweden). Also, symptoms and manifestations that might be related to beef allergy were reported. Results: beef allergy has been diagnosed in 3 children (5.9%) based on clinical criteria. Total IgE in all children was fluctuating from 2 to 1000 iu/ml and it was higher in children with multiple food allergies. From these 3 patients, one had multiple food allergy, whereas the other two had CMA and beef allergy. Total IgE in these three cases was: >1000, 161 and 274 iu/ml respectively. Conclusions: in Greek children with IgE mediated allergy to cow’s milk, beef allergy seems to be less frequent than previous reports in other countries (3.9% vs ~16% respectively, p<0.05). This could attributed to the Greek habit of well cooking beef meat, which alters the antigenity of beef proteins (bovine) and reduces beef allergy.

An oral sensitization food allergy model in Brown-Norway rats: assessment of the sensitivity of ELISA and PCA in detecting ovalbumin-specific IgE

Juan Huang 2, Yan Zhong 1, Wei Cai 2, Hong-bo Zhang 2
1) Department of Nutrition, School of medicine, Shanghai Jiaotong University, Shanghai, China 2) Clinical Nutrition Center, Shanghai Xin Hua Hospital, Shanghai, China

Summary:
Objective: To develop an oral-sensitized animal model of food allergy using Brown-Norway (BN) rats and evaluate the sensitivity of ELISA and passive cutaneous anaphylaxis (PCA) in detecting ovalbumin-specific IgE antibody (OVA-IgE) level in sensitized animal. Methods: Sixteen 3-week old female BN rats were randomly distributed into 3 groups: study group (n=6) sensitized by daily gavage of 1mg/d ovalbumin (OVA) for 9 weeks, negative control group (n=5) gavaged with saline for 9 weeks, and positive control group (n=5) sensitized by intraperitoneal injection of 0.1mg/d OVA at day 1, 2, 4, 7, 9, 11 and 0.2ml 25mg/ml aluminum hydroxide adjuvant was injected at day 1. OVA-IgE was analyzed by ELISA and PCA at week 4, 5, 6, 7, 8 and 9. At week 13, OVA-IgE level was analyzed after orally challenged by 1.0ml of 100mg/ml OVA. Results: The ELISA result showed that the OVA-IgE level in study group was significantly increased at week 6 (3.11±1.36), 7 (2.90±0.85) and 8 (2.47±1.08) compared with negative control group (1.59±0.31) (P<0.05), and the highest level was found at week 6. The OVA-IgE level in positive control group (3.19±0.80) was significantly higher than negative control group at week 7 (P<0.01). There was no significant difference between study group and positive control group (Figure 1). The sensitization rate in study group was 60% at week 6, 80% at week 7, and 80% at week 8, which was similar to positive control group (Table 1). The PCA result in positive control group was positive, and the range of OVA-IgE titer was 0~1:8, which was coincident with the result of ELISA. But in study group, all PCA results were negative (Figure 2). Conclusion: Oral sensitized animal model is more suitable for the investigation of food allergy compared with model sensitized by intraperitoneal injection, which is more comparable with the natural sensitization process in food allergy patients and avoids the interference of adjuvant. ELISA method is more sensitive in detecting OVA-IgE level in oral sensitized animal model than PCA method. Key word: oral sensitization, food allergy, Brown-Norway rats, animal model
**Extraterine Growth Retardation in Premature**

Hong-mei Shan 1, Wei Cai 2, Yun Cao 3, Ying-ying Shi 4, Bing-hua Fang 5, Yi Feng 1

1) Shanghai Children’s Medical Center, Shanghai, China 2) Xin Hua Hospital, Shanghai, China 3) Children’s Hospital of Fudan University, Shanghai, China 4) Shanghai International Peace Maternity and Child Health Hospital, Shanghai, China 5) Children’s Hospital, Shanghai Jiao Tong University, Shanghai, China

**Summary:**

Objective: To assess the incidences of intrauterine growth retardation (IUGR) and extraterine growth retardation (EUGR) in premature neonates in Shanghai region and their correlated factors. Methods: Data collected from the neonates discharged from 5 hospitals in Shanghai region were reviewed from January 1, 2003 to December 31, 2006. The criteria for enrollment were: 1) gestation age < 37 weeks. 2) Admitted less than 24 hours after birth, and discharged from the same hospital. 3) Hospitalization duration was ≥ 7 days. The criteria for exclusion were: died or with a malformation. The growth value on discharge in each patient was compared to the expected values based on the intrauterine growth data and postmenstrual day on discharge. Growth retardation was defined according to growth value measured (weight) ≤ 10th percentile of the value expected (growth expectation based on estimated postmenstrual age). The growth curves used for assessing birth weight for neonates in different gestation age was published in 1986. Results: The samples included 2771 premature neonates in the five hospitals in Shanghai region (1622 boys and 1149 girls). The incidence of EUGR was 52.1% assessed by weight, while the incidence of IUGR was 24.0%. When the incidence of EUGR increased with the decreased birth weight, the incidence of EUGR in VLBWI was 68.4%. There was a significant correlation between EUGR and non-EUGR in the nutrition support teams (NSTs) and non-NSTs (χ²=42.106, P=0.000). The relationship between EUGR and some risk factors was analyzed with Logistic regression model. In assessment according to the weight, the following 4 factors were related to EUGR: sex, gestation age on birth, the initial day of EN, the day of total EN and hospitals. Conclusions: Extraterine growth retardation remains to be a serious problem in premature neonates in Shanghai. This study showed that the incidence of EUGR in premature neonates was significantly higher than the data reported in other countries.

**P1017**

Title: Levels of Antioxidant Vitamins in Children with Intestinal Failure

Yi Feng 2, Wei Cai 1, Qing-ya Tang 1, Jiang Wu 1, Ning Tang 3

1) Xin Hua Hospital, Shanghai, China 2) Shanghai Children’s Medical Center, Shanghai, China 3) Shanghai Institute for Pediatric Research, Shanghai, China

**Summary:**

Objective: To assess the levels of antioxidant vitamins (vitamin A, E and ß-carotene) in different clinical situation of children with intestinal failure. Methods: Medical records of 22 children with intestinal failure from January 1, 1988 to December 31, 2007 were reviewed. Children were classified in four clinical situations as malnutrition or non-malnutrition, as parenteral nutrition on or off, as the residual small bowel ≤ 60cm or > 60cm, and as with or without glutamine and rhGH. Their plasma vitamin A, E, and ß-carotene concentration were measured by high performance liquid chromatography (HPLC). Results: The total incidences of below the reference values of vitamin A, E and ß-carotene were 31.8%, 31.8% and 59.0%, respectively. 6 patients were malnutrition and 13 patients wean from PN. The residual small bowel ≤ 60cm was in 10 cases. 16 cases were administrated glutamine and rhGH. The table shows that the incidences of below the reference values of antioxidant vitamins in different situation of intestinal failure. The incidence of below ß-carotene reference value was significantly higher in patients with PN than that of patients without PN (88.9% vs 38.5%, P=0.031). Patients with glutamine and rhGH had a higher incidence of ß-carotene deficiency compared to those patients without glutamine and rhGH (75% vs 16.7%, P=0.023). No clinical symptoms resulting from antioxidant vitamins deficiencies were found in our population. Conclusion: Vitamin supplements should be emphasized for children with intestinal failure, especially for patients with malnutrition and the intestinal length ≤ 60cm. Moreover, they may require higher doses of vitamins than the recommended daily allowance (RDA).

**P1018**

Title: Study on Energy Metabolism in Children with Malignant Solid Tumor

YE XUAN TAO 2, LI NA LU 1, YI FENG 1, WEI CAI 2

1) XIN HUA HOSPITAL, SCHOOL OF MEDICINE, SHANGHAI JIAO TONG UNIVERSITY, SHANGHAI, CHINA 2) SHANGHAI INSTITUTE FOR PEDIATRIC RESEARCH, SHANGHAI, CHINA

**Summary:**

Purposes: To evaluate the energy metabolism in malignant pediatric patients before and after surgery, and to explore the probable impact factors on host’s energy expenditure. Subjects and Methods: Patients with newly diagnosis solid tumor admitted to the department of pediatric surgery between Oct 2001 and June 2007 were recruited. Indirect calorimetry was used to measure REE of all the patients before operation and in 7 days or
late after operation. Clinical data were collected. Parents were asked if children’s recent dietary intake decreased or not. Patients were arranged as benign group or malignant group according to their histopathologic diagnosis. Based on resection degree, the malignant patients were subdivided into with curative tumor resection group (MCTR group) and partial tumor resection group (MPTR group). Data of measured energy expenditure was expressed as percentage of the estimated value of basal metabolic ratio which calculated according to the Schofield-HTWT equations (measured REE/predicted REE \* 100%, PEE). Results: Thirty patients completed pre and post operative REE measurement. There were 8, 14, 8 patients in benign group, MCTR group and MPTR group, respectively. Seven patients’ preoperative PEE was higher than 110%. Data on patients’ PEE before and after operation were showed in table1. The PEE change before and after operation of the 2 malignant groups were significantly different (Nonparametric test: Z=2.116, P=0.035). In dietary intake decreasing stratum, there was no significant difference between the MCTR group and MPTR group, no matter of pre and postoperative PEE. While among patients without resent dietary intake decreasing, postoperative PEE of patients with partial resection was significant higher than patients with curative resection (Zpre= 0.566, Ppre=0.6350; Zpost=2.263, Ppre=0.024; ZD PEE =-2.121 PD PEE =-0.036). Conclusions: Energy expenditure varied individually, secondary to the synchronous effects of tumor and declined dietary intake. Tumor metabolism increased host’s energy expenditure, while declined dietary intake decreased host’s energy expenditure.

P1019

Title:
Effect of ethanol exposure beginning at an early age on acetate metabolism.

Yoshihisa Urita 1, Toshiyasu Watanabe 1, Tsunehiko Imai 2, Kazuo Hike 1, Yasuyuki Miura 1, Motonobu Sugimoto 1
1) Department of General Medicine and Emergency Care, Toho University, Tokyo, Japan 2) Department of Environmental and Occupational Health, Toho University, Tokyo, Japan

Summary:
Objectives: Chronic ethanol consumption results in decreased fatty acid oxidation and leads to fatty liver in the absence of nutritional deficiencies. It was previously reported that ethanol oxidation results in elevated serum concentrations of acetate and presumably increased tissue acetate pools in vivo. However, it has been unknown whether decreased fatty acid oxidation is found in vivo because the experimental animals are not given ethanol for 15 hours before death and serum acetate normalizes by the time of death. The aim of this study is to evaluate exogenous fatty acid oxidation in vivo in ethanol-fed rats by 13C-acetate breath test using the new breath-test system for experimental animals. Methods: Twelve female rats of the F344 strain aged 1, 8, and 14 months were used. Seven rats were fed on a commercial mash food with 16% ethanol solution (Japanese Sake) as drinking-fluid since at 29 days of age (ethanol group). They drank a 16% ethanol solution with net ethanol 9.7g/kg body weight on average. The remaining five rats were fed on a nutrient-matched isocaloric diet with water as drinking-fluid (control group). After 24-hr fasting, rats are orally administered 1cc of water containing sodium 13C-acetate (100mg/kg) and housed in an animal chamber. The expired air in the chamber is collected in a breath-sampling bag using a tube and aspiration pump. The 13CO2 level increased gradually and peaked at 30 min. 13CO2 excretion is increasing with time and peaked 30 min in control rats after administration of 13C-acetate at all three different ages. In pump. The 13CO2 concentration is measured using an infrared spectrometer at 10-min interval for 120 min and expressed as delta per mil. Results: The breath 13CO2 level increased gradually and peaked at 30 min. 13CO2 excretion is increasing with time and peaked 30 min in control rats after administration of 13C-acetate at all three different ages. In pump. The 13CO2 concentration is measured using an infrared spectrometer at 10-min interval for 120 min and expressed as delta per mil. Results: Thirty patients completed pre and post operative REE measurement. There were 8, 14, 8 patients in benign group, MCTR group and MPTR group, respectively. Seven patients’ preoperative PEE was higher than 110%. Data on patients’ PEE before and after operation were showed in table1. The PEE change before and after operation of the 2 malignant groups were significantly different (Nonparametric test: Z=2.116, P=0.035). In dietary intake decreasing stratum, there was no significant difference between the MCTR group and MPTR group, no matter of pre and postoperative PEE. While among patients without resent dietary intake decreasing, postoperative PEE of patients with partial resection was significant higher than patients with curative resection (Zpre= 0.566, Ppre=0.6350; Zpost=2.263, Ppre=0.024; ZD PEE =-2.121 PD PEE =-0.036). Conclusions: Energy expenditure varied individually, secondary to the synchronous effects of tumor and declined dietary intake. Tumor metabolism increased host’s energy expenditure, while declined dietary intake decreased host’s energy expenditure.

P1020

Title:
Ovarectomy affects the aging process of acetate metabolism.

Yoshihisa Urita 1, Toshiyasu Watanabe 1, Tsunehiko Imai 2, Tadashi Maeda 1, Kazuo Hike 1, Motonobu Sugimoto 1
1) Department of General Medicine and Emergency Care, Toho University, Tokyo, Japan 2) Department of Environmental and Occupational Health, Toho University, Tokyo, Japan

Summary:
Objective: Gastrointestinal function is well preserved with aging regarding the digestion and absorption of macronutrients, whereas it has been reported that the aging modifies metabolism. For example, ovarian hormones play an important role on metabolism. They regulate body composition in female rats, and the removal of ovarian hormones by ovariectomy causes an increase in both body lipid and protein content. It is also reported that ovariectomy led to a significant increase in leptin levels. The aim of this study is to evaluate metabolism of acetate in rats progress- ing through their life stages and the influence of ovariectomy on their change. Methods: Fourteen female rats of the F344 strain were used, and the remaining seven rats were ovariectomized at three weeks of age (ovariectomy group) and housed in an animal chamber. The expired air in the chamber is collected in a breath-sampling bag using a tube and aspiration pump. The 13CO2 concentration is measured using an infrared spectrometer at 10-min interval for 120 min and expressed as delta per mil. Results: Thirty patients completed pre and post operative REE measurement. There were 8, 14, 8 patients in benign group, MCTR group and MPTR group, respectively. Seven patients’ preoperative PEE was higher than 110%. Data on patients’ PEE before and after operation were showed in table1. The PEE change before and after operation of the 2 malignant groups were significantly different (Nonparametric test: Z=2.116, P=0.035). In dietary intake decreasing stratum, there was no significant difference between the MCTR group and MPTR group, no matter of pre and postoperative PEE. While among patients without resent dietary intake decreasing, postoperative PEE of patients with partial resection was significant higher than patients with curative resection (Zpre= 0.566, Ppre=0.6350; Zpost=2.263, Ppre=0.024; ZD PEE =-2.121 PD PEE =-0.036). Conclusions: Energy expenditure varied individually, secondary to the synchronous effects of tumor and declined dietary intake. Tumor metabolism increased host’s energy expenditure, while declined dietary intake decreased host’s energy expenditure.
ovariectomized rats, the peak time of 13CO2 excretion was prolonged to 40 min at 7 and 13 months of age. The maximum value of 13CO2 excretion is significantly higher in ovariectomized rats than in control rats at 2 months of age, and those values of two groups became equal at 7 months of age. At 13 months of age, those values were lower in ovariectomized rats than in control rats. In control rats, 13CO2 excretion at 7 months of age was equal to that at 13 months. In contrast, 13CO2 excretion was lower at 13 months of age than that at 7 months of age. Conclusion: Effect of age on acetate oxidation is changed remarkably by ovariectomy. From the viewpoint of acetate metabolism, removal of ovarian hormones might make rats to be precocious ones and accelerate aging.

P1021

Title:
Investigation of regurgitation and other symptoms of GER in Indonesian infants

Hegar Badriul 1, Aswitha Boediarso 1, Agus Firmansyah 1, Yvan Vandenplas 2
1) Department of Pediatrics, University of Indonesia, Cipto Mangunkusumo Hospital, Jakarta, Indonesia 2) UZ Brussel Kinderen, Brussels, Belgium

Summary:
Objectives: to evaluate the incidence of regurgitation and other symptoms of gastroesophageal reflux in Indonesian infants. Materials and methods: In a cross-sectional study at the University outpatient clinic for vaccination in Jakarta, 138 mothers of healthy infants of less than 12 month old were prospectively asked to report the frequency of regurgitation. Results: Whatever the age, some infants do not regurgitate (from 10 % during the first month of life to 67 % in 1-year old infants). Regurgitation of at least one episode a day was reported in 77 % of infants younger than 3 months. Daily regurgitation decreased to 12 % in the 9-12 month old group. Reported peak prevalence was 81 % (26/32) during the first month of life. Regurgitation decreased sharply between the 4-6 and 7-9 month old groups (from 44 % to 9 %). The longer regurgitation persisted, the more frequently the mother perceived regurgitation as a problem. Volume and frequency of regurgitation, back arching, irritability, crying and refusal of feeding were the symptoms causing maternal anxiety. The longer regurgitation persists, the more frequently it is viewed by mothers as a health problem. Conclusions: Regurgitation occurs frequently in Indonesian infants, and is a frequent cause of concern to mothers.

P1022

Title:
Infant Formula Nucleotides: A Comparison of Two Supplementation Levels.

Galina Ling 1, Jaber Abu-Abed 1, Ahmed Nassassa 1, Ahmed Alsheikh 1, Zvi Weizman 1
1) Soroka University Medical Center, Beer-Sheva, Israel

Summary:
Human milk has a higher concentration of nucleotides (N) (5.1-7.2 mg/100 ml) than bovine milk. Dietary N have potential benefits to somatic growth, gut development and immunity. European authorities recommend to limit infant formula N supplementation to 3.4 mg/100 ml. Studies comparing effects of various N levels in infant formula are not available. Objective: This study investigates the safety of two different N supplementation levels, and their effects on growth, stooling, behavior parameters and rate of acute illnesses. Methods: In a prospective double-blind trial healthy term neonates (n=155) were randomly assigned to be fed one of the three following formulas for four weeks. Results: are demonstrated in the table (values are means±SD). No significant differences between groups were detected regarding growth, stooling, behavior parameters and rate of acute illnesses. Side effects were not noticed in any of the participants. Conclusion: We conclude that these two different levels of nucleotides supplementation of infant formula have no apparent short-term adverse effects in neonates. Further large-scale long-term research is required.