The Pediatric Infectious Disease Journal® Newsletter

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A NEW PEDIATRIC HIV/AIDS SECTION During the past several years we have published many articles on HIV infections in infants and children from many areas of the world. The number of submitted manuscripts has steadily increased, prompting us to formalize our commitment to this important area of pediatrics. Starting in December 2011 each issue of the journal will feature a section dedicated to pediatric HIV topics. This section will be edited by Dr. George K. Siberry, Medical Officer, Pediatric, Adolescent, and Maternal AIDS (PAMA) Branch, Eunice Kennedy Shriver National Institutes of Child Health and Human Development, Bethesda, MD. The section will solicit high-quality, high-impact original articles and brief reports of epidemiologic, clinical, translational and implementation science studies pertaining to the prevention, treatment and outcomes of HIV infection in infants, children, and adolescents. The submitted manuscripts will undergo peer review and the final decision for publication will be made by Dr. Siberry and the Chief Editors.

ANOTHER NEW FEATURE IN THE JOURNAL The Pediatric Infectious Disease Journal is directed at clinicians so we, as Chief Editors, select articles for publication that we believe have applicability to office and hospital practice. At times we receive submissions about antimicrobials or vaccines that are in development but not yet approved for general use. There are also studies of novel uses of drugs or vaccines that are clinically available. These fall into the categories of Phase II, III or IV studies. Infectious disease specialists in academic positions are not the only ones interested in such reports; many other physicians like to keep abreast of new developments and want to read about things on the therapeutic horizon. Beginning with the January 2012 issue we will have a section called Drug and Vaccine Phase II-IV Reports. These studies are invariably sponsored by pharmaceutical and vaccine manufacturers but they go through the same rigorous peer review process as other research reports. We are limited by our publisher to a specified number of pages per issue. To ensure that Phase II-IV reports do not displace other worthwhile articles, there will be page charges for the Phase II-IV reports. This allows us to provide as many valuable articles as possible in the space allowed each month.

AGAMMAGLOBULINEMIA A 16-month-old male with a recent history of MRSA skin abscesses and pneumococcal mastoiditis was admitted to our hospital because of high fever and skin lesions on the lower extremities and right palm. The hand lesion had developed a dark violaceous center, which was drained. The cloudy material obtained grew *Pseudomonas aeruginosa* and *Candida albicans* on culture. After admission, he developed septic shock, had a positive blood culture for *P. aeruginosa* and was transferred to the intensive care unit. His absolute neutrophil count was 117 cells/m^3 and immunoglobulin concentrations were profoundly low. He was successfully treated with 3 doses of IVIG and with cefepime and fluconazole for approximately 3 weeks. Immunologic evaluation revealed a hemizygous mutation in exon 2 of the Bruton protein kinase gene, leading to a stop codon confirming the diagnosis of sex-linked agammaglobulinemia (XLA). This is the first patient we have seen with XLA who presented with *Pseudomonas* sepsis and we were surprised to learn it is the single most common etiology of sepsis in this disease. In a review of 201 patients with XLA 21 had at least one episode of sepsis; 6 (29%) of these had *Pseudomonas* and 5 (24%) had *Streptococcus pneumoniae* as the etiology. In 6 patients no organism was recovered from blood culture (**Medicine** 2006;5:193–202). The associated neutropenia and repeated administration of antimicrobials for skin and sinus infections might explain why this organism,

not usually part of the normal intestinal or respir atory flora, caused sepsis in our patient.

INFLUENZA VACCINE 2011–2012 The 2011–2012 U.S. seasonal influenza vaccine virus strains are identical to those contained in the 2010–11 vaccine. These include A/California/7/2009 (H1N1)-like, A/Perth/16/2009 (H3N2)-like, and B/Brisbane/60/2008-like antigens (**MMWR** 60(32);1073–7, August 19, 2011). Because post-vaccination antibody titers decline during the course of a year annual vaccination is recommended for optimal protection for all persons 6 months of age and older. Those with underlying cardiac and pulmonary conditions or with other chronic diseases should receive the vaccine as soon as it becomes available. Infants and children who are 6 months through 8 years of age require 2 doses of influenza vaccine, administered a minimum of 4 weeks apart, during their first season of vaccination to optimize the immune response; by contrast, a single dose suffices in the second season. The live attenuated influenza virus vaccine, LAIV (Flumist®, MedImmune) is available for healthy ind ividuals from 2 to 49 years of age. Recent evidence suggests that unlike the inactivated vaccine, LAIV induces influenza-specific $CD4^+$, $CD8^+$, and $\gamma\delta$ T cells, including T cells specific for highly conserved influenza peptides. This could account for its greater effectiveness in children than TIV. A new intradermally administered TIV preparation, Fluzone Intradermal®, was licensed in May 2011. This vaccine is indicated for persons 18 through 64 years of age and contains less antigen than intramuscular TIV preparations (9 μg rather than 15 μg of each strain per dose) in a smaller volume (0.1mL rather than 0.5 mL). A vaccine containing 60 μg of hemagglutinin per vaccine strain (rather than 15 μg per strain as in other intramuscular TIV preparations), Fluzone High-Dose® (Sanofi Pasteur), is again available as an alternative TIV for those 65 years of age and older. No preference is indicated for this TIV versus other TIV preparations.

STUTTERING AND VIRUSES In a letter to **Emerging Infectious Diseases** (2011;17:1567) Mickail, Klein and Cunha at State University of New York in Stony Brook recount the tale of a 39 year-old woman with a severe headache and new onset of stuttering. The illness began with a severe generalized headache followed in a few days by fever and intermittent stuttering. There were no other findings on physical and neurologic examinations. The main laboratory finding was 37 WBC/cu mm (78% lymphocytes) in the cerebrospinal fluid. Virologic tests of serum and CSF confirmed West Nile virus infection. (She had a history of many mosquito bites.) Fever and headache resolved and stuttering ceased. The authors point out that WNV resembles Japanese encephalitis virus which has been reported in the Chinese language literature to cause stuttering. (They cite that article for Chinese-fluent readers.) The speculation is that myoclonic contractions of the tongue or other elements of vocalization might cause the stuttering. We like to see items of medical trivia such as this recorded. Has anyone out there in readerland encountered stuttering associated with other viral infections?

THE CENTENARY OF SALVARSAN In 1911 an article in the **Boston Medical and Surgical Journal** (1911;164:381) introduced American physicians to Paul Ehrlich's treatment of syphilis with anarsenobenzol that he called Salvarsan 606. The previous standard (and quite ineffective) therapy had been mercury salts (**New Engl J Med** 2011;365:291). It received the popular cognomens of "the magic bullet" or "the silver bullet." The use of arsenic compounds to treat many ailments antedates Hippocrates. Ehrlich's concept of chemotherapy (a word he coined) was that arsenic could be combined with a dye that was selectively taken up by the target cells that were causing the disease. Ehrlich, Sahachiro Hata and Alfred Bertheim worked for years to develop a compound with increased potency and decreased toxicity. Arsphenamine was the 606th compound they tested, hence the name Salvarsan 606. Further refinement in the 1930s led to Mapharsen, which became the drug of choice for treating syphilis until the advent of penicillin in the 1940s. As a concept (i.e. chemotherapy) Salvarsan and Mapharsen were great. As therapeutic agents they left a lot to be desired. They did not work for late manifestations of syphilis and relapses were common as were toxic effects (fever, rash, seizures, renal failure, optic neuritis). But they were better than the mercury salts that had been the prior mainstay of therapy. Progress not perfection, as is the case with so much of medicine.