Ages at menarche and menopause and reproductive lifespan as predictors of exceptional longevity in women: the Women’s Health Initiative

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Abstract

Objective: The aim of the present study was to investigate associations between reproductive factors and survival to age 90 years.

Methods: This was a prospective study of postmenopausal women from the Women’s Health Initiative recruited from 1993 to 1998 and followed until the last outcomes evaluation on August 29, 2014. Participants included 16,251 women born on or before August 29, 1924 for whom survival to age 90 during follow-up was ascertained. Women were classified as having survived to age 90 (exceptional longevity) or died before age 90. Multivariable logistic regression models were used to evaluate associations of ages at menarche and menopause (natural or surgical) and reproductive lifespan with longevity, adjusting for demographic, lifestyle, and reproductive characteristics.

Results: Participants were on average aged 74.7 years (range, 69-81 y) at baseline. Of 16,251 women, 8,892 (55%) survived to age 90. Women aged at least 12 years at menarche had modestly increased odds of longevity (odds ratio [OR], 1.09; 95% CI, 1.00-1.19). There was a significant trend toward increased longevity for later age at menopause (natural or surgical; \( P_{\text{trend}} = 0.01 \)), with ORs (95% CIs) of 1.19 (1.04-1.36) and 1.18 (1.02-1.36) for 50 to 54 and at least 55 compared with less than 40 years, respectively. Later age at natural menopause as a separate exposure was also significantly associated with increased longevity \( (P_{\text{trend}} = 0.02) \). Longer reproductive lifespan was significantly associated with increased longevity \( (P_{\text{trend}} = 0.008) \). The odds of longevity were 13% (OR 1.13; 95% CI, 1.03-1.25) higher in women with more than 40 compared with less than 33 reproductive years.

Conclusions: Reproductive characteristics were associated with late-age survival in older women.

Key Words: Aging – Lifespan – Longevity – Menarche – Menopause.
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