From Medscape Medical News

Women With High Vitamin D Had Lower Risk for Early-Onset AMD

Laurie Barclay, MD
Authors and Disclosures

April 12, 2011 — High vitamin D blood levels appear to be associated with a decreased risk for the development of early age-related macular degeneration (AMD) among women younger than 75 years, according to the results of a study reported in the April issue of the *Archives of Ophthalmology*.

"...AMD, a chronic, late-onset disease that results in degeneration of the macula, is the leading cause of adult irreversible vision loss in developed countries," write Amy E. Millen, PhD, from the School of Public Health and Health Professions, University at Buffalo, New York, and colleagues. "Age-related macular degeneration affects approximately 9 percent (8.5 million) of Americans aged 40 years and older."

Using stereoscopic fundus photographs taken from 2001 to 2004, the investigators studied the association between serum 25-hydroxyvitamin D (25[OH]D) concentrations (nmol/L) and the prevalence of early AMD among 1313 participants of the Carotenoids in Age-Related Eye Disease Study (CAREDS). These women had complete ocular and risk factor data and serum samples drawn at baseline (1993-1998) for 25(OH)D assays.

Logistic regression allowed determination of odds ratios (ORs) and 95% confidence intervals (CIs) for early AMD (n = 241) of 1287 women without advanced disease, after adjustment for age, smoking, iris pigmentation, family history of AMD, cardiovascular disease, diabetes, and use of hormone therapy.

No significant overall association was detected in multivariate models between early AMD and 25(OH)D levels, with an OR for quintile 5 vs quintile 1 of 0.79 (95% CI, 0.50 - 1.24; *P* for trend = .47). However, there was a significant age interaction (*P* = .002), suggesting a selective mortality bias in women 75 years and older. In women younger than 75 years (n = 968), serum 25(OH)D levels were associated with a decreased risk for early AMD (OR for quintile 5 vs quintile 1, 0.52; 95% CI, 0.29 - 0.91; *P* for trend = .02), whereas this risk was increased in women 75 years or older (n = 319; OR, 1.76; 95% CI, 0.77 - 4.13; *P* for trend = .05).

In women younger than 75 years, the observed association between serum 25(OH)D levels and a decreased risk for early AMD was attenuated by further adjustment for body mass index and recreational physical activity, which are predictors of 25(OH)D. Multivariate models showed that in this age group, intake of vitamin D from foods and supplements, but not self-reported time spent in direct sunlight, was related to decreased odds of early AMD.

"High serum 25(OH)D concentrations may protect against early AMD in women younger than 75 years," the study authors write.

Limitations of this study include possible selection bias.

"This is the second study to present an association between AMD status and 25(OH)D, and our data support the previous observation that vitamin D status may potentially protect against development of AMD," the study authors conclude. "More studies are needed to verify this association prospectively as well as to better understand the potential interaction between vitamin D status and genetic and lifestyle factors with respect to risk of early AMD."

The National Institutes of Health and Research to Prevent Blindness supported this study. CAREDS is an ancillary study of the Women's Health Initiative, which is funded by the National Heart, Lung, and Blood Institute, National Institutes of Health, and the US Department of Health and Human Services. One of the study authors (Karen M. Gehrs, MD) is currently serving as a consultant for Sequenome.

Arch Ophthalmol. 2011;129:481-489. Abstract

Print This Email this Share

MORE ON THIS TOPIC

- Nutrition
- AMD and Retinal Disease Resource Center
- Integrative Medicine Resource Center