Low Vitamin D Posed No Stroke Risk in Blacks

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CHICAGO – Vitamin D deficiency is an independent risk factor for fatal stroke in whites but not in blacks.

This finding in a study of nearly 8,000 white and black adults followed for more than 14 years came as a surprise. It's well established that both stroke rates and vitamin D deficiency are markedly higher in blacks than in whites. The study hypothesis was that low vitamin D levels contribute to the increased risk of stroke in the black population. Not so, Dr. Erin D. Michos reported at the meeting.

The study involved a nationally representative group of 7,981 white and black participants in the Third National Health and Nutrition Examination Survey (NHANES III) conducted during 1988-1994. At that time, vitamin D deficiency as defined by a serum 25-hydroxyvitamin D level less than 15 ng/mL was present in 32% of blacks and 7% of whites.

Death certificate data accrued during a median 14.1 years of follow-up listed stroke as the cause of death in 116 whites and 60 blacks. As expected, blacks had a higher rate of fatal stroke, with a 65% increased risk after adjustment for traditional stroke risk factors and socioeconomic variables.

In a multivariate analysis adjusted for the standard cardiovascular and stroke risk factors, vitamin D deficiency in whites was associated with a 2.2-fold increased risk of fatal stroke compared with whites who had adequate vitamin D levels. Unexpectedly, however, vitamin D–deficient blacks had an adjusted 6% lower risk of fatal stroke than did blacks with adequate vitamin D levels, a nonsignificant difference, said Dr. Michos, a cardiologist at Johns Hopkins University, Baltimore.

"We were surprised by this finding," she said. "Blacks may have an adaptive resistance to the adverse effects of low vitamin D. For example, even though blacks have lower vitamin D levels, they are less likely to have fractures and osteoporosis than whites."

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DR. MICHOS

Limitations of this study include the fact that the one-time measurements of serum vitamin D at baseline may not reflect lifetime vitamin D status, and only fatal strokes were assessed.

What's needed now is clinical trial data to show whether identification and treatment of vitamin D deficiency actually prevent strokes and heart disease, Dr. Michos noted. Fortunately, such a trial is underway. The National Institutes of Health–sponsored Vitamin D and Omega-3 Trial (VITAL), led by investigators at Brigham and Women's Hospital in Boston, is randomizing 20,000 older adults without a history of heart disease, stroke, or cancer to 2,000 IU/day of vitamin D, fish oil, or placebo in a 2x2 factorial design to learn if these supplements prevent the development of these diseases over a planned 5-year follow-up.

"I'm not sure that they're going to be able to show that one dose fits all. Blood levels of vitamin D vary in response to a given dose based on sun exposure, genetics, and body mass index. But I'm glad that we're finally having a clinical trial because this is an important question," Dr. Michos said.

While awaiting the VITAL outcomes data, screen for vitamin D deficiency, she recommended.

"Vitamin D deficiency is very common. Doses of 1,000-2,000 IU/day appear safe, with little downside, and we know it has good benefits for the bones. So I tell my patients, 'We think we're helping with your bones, and we may also be helping with your heart,' " she said.

The NHANES III study was sponsored by the Centers for Disease Control and Prevention. Dr. Michos declared having no conflicts of interest. ■