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WHAT'S NEW

Doubts Emerge About Widespread Use of Vitamin D Supplementation

'What does that low serum vitamin D level mean? Is it the thing that predisposes, or is it somehow a byproduct of illness?'

BY BRUCE JANCIN

SNOWMASS, COLO. — Serious questions exist about the safety and efficacy of the popular practice of high-dose vitamin D supplementation across a broad swath of the population.

One of these concerns is that not all of the extra calcium absorption promoted by boosting vitamin D is going into bone to prevent fractures. Some of it may actually be taken up by atherosclerotic plaque, increasing the risk of cardiovascular events, Dr. Lenore M. Buckley cautioned at a symposium sponsored by the American College of Rheumatology.

This is of particular concern in patients with known coronary disease and for those at high risk, including individuals with rheumatoid arthritis, systemic lupus erythematosus, diabetes, or psoriasis, added Dr. Buckley, a professor of internal medicine at Virginia Commonwealth University, Richmond.

Discussing findings from a recent cross-sectional study involving 340 African American patients with type 2 diabetes, Dr. Buckley said that serum 25-hydroxyvitamin D levels were positively associated with increased calcified atherosclerotic plaque in the aorta and carotid arteries (J. Clin. Endocrinol. Metab. 2010 Jan. 8 [doi:10.1210/jc.2009-1797]).

"The effects of supplementing vitamin D to raise the serum 25-hydroxyvitamin D level on atherosclerosis in African Americans are unknown. Prospective trials are needed," the investigators said.

A recent prospective randomized trial assessed the effects of using calcium supplements on vascular event rates, but it did not involve African Americans. The trial involved 1,471 healthy postmenopausal New Zealand women who were randomized to receive either supple-

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WORLD WIDE MED

GLOBAL PERSPECTIVES ON MEDICAL PRACTICE

Medical Volunteers Save Lives in Haiti

The Jan. 12 earthquake that devastated much of Haiti created a medical emergency on a massive scale, and physicians and other medical personnel from many nations soon rushed to the island nation to help care for the thousands of injured Haitians.

One of them was Dr. David Mudd, who spent 10 days in the town of Milot, Haiti, treating victims of the earthquake. An internist in Brockton, Mass., where he is the president of the medical staff at Good Samaritan Medical Center, Dr. Mudd jumped at the chance to be a true Good Samaritan. His medical background and his many years of studying French served him well, said Dr. Mudd, who earned his medical degree at Tufts University, Boston, in 1989 and completed his internal medicine residency at St. Elizabeth's Medical Center, also in Boston.

He plans to return to Haiti later this year, along with his son, a premed student who has experience as an emergency medical technician, and his wife, who is a gynecologic nurse practitioner.

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COURTESY DR. DAVID MUDD

Dr. David Mudd (upper left) helps treat an earthquake victim in a field hospital in Milot, Haiti. About 350 patients received treatment during his 10-day visit.

Ideal Levels May Vary by Race

Vitamin D *from page 1*

mental calcium or placebo. By 5 years of follow-up, there were a total of 101 myocardial infarctions, strokes, and sudden deaths in 69 women in the supplemental calcium group, and 54 such events in 42 controls (BMJ 2008;336:262-6).

The numbers needed to treat (NNT) were "particularly disturbing," in Dr. Buckley's view. The NNT required for 5 years of supplemental calcium to cause one additional MI, compared with placebo, was 44. The NNT for one stroke was 56. And the NNT to cause one additional cardiovascular event was 29. In contrast, the NNT to prevent one symptomatic fracture was 50.

The vascular event rate was higher in women with high compliance with calcium supplementation. The event rate was also higher during months 30-60 of follow-up, which is consistent with an initial latent period during which undetected vascular damage may occur.

There is a noticeable, if anecdotal, increase in the number of physicians ordering serum vitamin D tests to screen for deficiency. The vitamin D assay has become one of the most-ordered lab tests in the United States, despite the assay's questionable reliability, its $40-$200 cost, and considerable unresolved debate as to what constitutes an optimal blood level. Medicare is considering denying coverage of vitamin D tests for screening purposes, according to Dr. Buckley.

The vitamin D assay is one of the most-ordered tests, despite questions about its reliability.

DR. BUCKLEY

There is solid evidence that vitamin D supplementation reduces fracture risk in the elderly, especially in those with low serum levels. But the impetus for the upsurge in serum vitamin D screening and supplementation is the hope that it might protect against many chronic diseases, including cancers, dementia, autoimmune diseases, and cardiovascular disease.

However, that hope is driven mostly by epidemiologic data, which must be viewed as hypothesis-generating rather than definitive. The classic example of how misleading epidemiologic associations can be is the expectation that estrogen replacement would reduce cardiovascular risk in postmenopausal women; when the Women's Health Initiative and other prospective trials were eventually carried out, it turned out just the opposite was true, Dr. Buckley noted.

"The question we have to ask is: What does that low serum vitamin D level mean? Is it the thing that predisposes, or is it somehow a byproduct of illness?" she continued.

There is intriguing evidence to indicate that the optimal level of vitamin D to promote bone health, muscle strength, immunity, and other key functions may vary by race. Data from the National Health and Nutrition Examination Survey show that very few white children aged 1-12 years are vitamin D deficient using the classic threshold of 15 ng/mL. In contrast, about 10% of non-Hispanic black 1- to 6-year-olds are vitamin D deficient, as are close to 30% of those in the 7- to 12-year age bracket (Pediatrics 2009;124:e362-70).

Many observers see this racial disparity as a public health problem reflecting unequal access to services. But there is a conundrum here: If vitamin D deficiency is rampant in black children, why do they have greater bone strength and muscle mass, on average, than white children?

"It makes one wonder whether the definition of normal levels should vary by race," the rheumatologist said.

Support for this theory comes from studies showing that pushing serum vitamin D levels to 30 ng/mL or higher in whites reduces their parathyroid hormone levels, while pushing levels above 20 ng/mL in African Americans—young or old—doesn't further decrease parathyroid hormone or increase bone density.

Asked by audience members what she does about vitamin D in her own practice, Dr. Buckley said she generally tries to get patients into the 20-29 ng/mL range, while in African Americans and patients with known cardiovascular disease, she aims for 15 ng/mL or slightly more—"and I worry that might be too high sometimes."

She reserves expedited supplementation—50,000 IU weekly for 8 weeks—mainly for vitamin D–deficient elderly patients at high risk for fracture or fall. There is no evidence to support supplementation in young or middle-aged patients, whose increased fracture risk is decades away.

Updated recommendations on vitamin D from the Institute of Medicine, due this spring, will likely recommend an increase in the currently recommended supplemental 400 IU/day for 50- to 70-year-olds not getting sufficient vitamin D from the sun. Dr. Buckley said she hopes the IOM will address the thorny issues of who should receive supplementation, and how quickly. ■

A related video is at www.youtube.com/InternalMedicineNews (search for 72224).

Disclosures: *Dr. Buckley reported having no relevant financial relationships.*

TALK BACK

What is your approach to advising patients about vitamin D and calcium supplementation?

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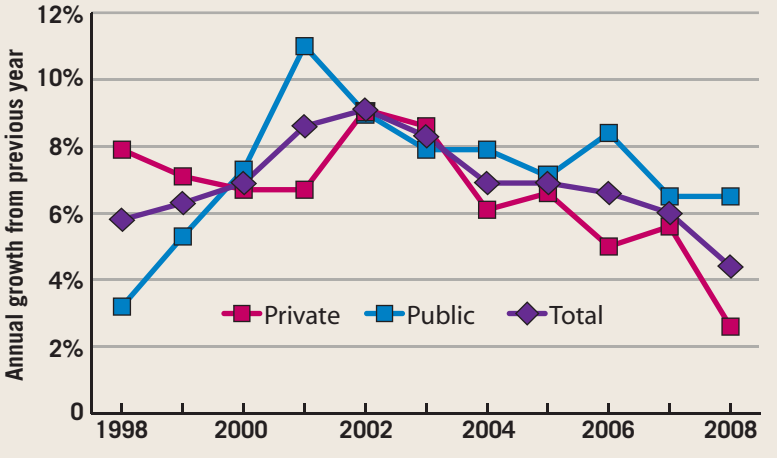

Source: Centers for Medicare and Medicaid Services