Vitamin D Supplementation May Up Heart Risks

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.

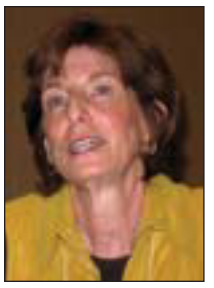
One of these concerns is that not all of the extra calcium absorption promoted by boosting vitamin D is going into bone to prevent fractures. Some of it may actually be taken up by atherosclerotic plaque, increasing the risk of cardiovascular events, Dr. Lenore M. Buckley cautioned at a symposium sponsored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

Discussing findings from a recent cross-sectional study involving 340 blacks 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. Endo. Metab. 2010 Jan. 8 [Epub ahead of print]).

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 changing its policy such that vitamin D tests for screening purposes would no longer be covered, according to Dr. Buckley.

There is solid evidence that vitamin D supplementation reduces fracture risk in the elderly, especially in those with low serum levels. But that's not what's driving the astounding recent growth in serum vitamin D screening and supplementation. The impetus for the upsurge in screening is the hope that it might protect against a broad range of chronic diseases, including cancers, dementia, autoimmune diseases, and cardiovascular disease.



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DR. BUCKLEY

The trouble is, 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 that 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% in the 7-12 age bracket (Pediatrics Sept. 2009 [doi:10-1542/peds.2009-0051]).

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 than do whites?

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

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

Dr. Buckley said she generally tries to get patients into the 20- to 29-ng/mL range, but in black patients and those 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 who are at high risk for fracture or fall. That's where there is supporting evidence of benefit. There is no evidence to support supplementation in young or middle-aged patients, whose increased fracture risk is decades away.

Fresh guidance in the form of updated recommendations on vitamin D from the Institute of Medicine is forthcoming. Rumor has it that the IOM report, due this spring, will recommend an increase in the currently recommended supplemental 400 IU/day for 50- to 70-year-olds who are not getting sufficient vitamin D from the sun. Her hope is the IOM will address the thorny issues of who should receive supplementation, and how fast it should be done. ■

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

To watch a video interview of Dr. Buckley, go to www.youtube.com/rheumatologynews.

TALK BACK

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

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FRAX, Vitamin D Considered Key to Osteoporosis Care

BY DOUG BRUNK

The FRAX tool to calculate the risk of major osteoporotic fracture and recommendations increasing vitamin D_3 intake are key components of the North American Menopause Society's updated position statement on the management of osteoporosis in postmenopausal women.

Last updated in 2006, the 2010 statement (www.menopause.org/aboutmeno/consensus.aspx) is meant to be a guide for clinicians regarding the diagnosis, prevention, and treatment of postmenopausal osteoporosis. "It's the most current and practice-oriented, evidence-based statement that's out at the moment," Dr. Wulf H. Utian, executive director emeritus of NAMS, said in an interview.

Among the new recommendations is the use of the World Health Organization's FRAX (Fracture Risk Assessment) tool to calculate a patient's 10-year risk of major osteoporotic fracture (hip, shoulder, wrist, and spine). Developed by researchers led by Dr. John A. Kanis of the University of Sheffield (England), FRAX is based on individual patient models that integrate the fracture risks associated with clinical risk factors as well as bone mineral density at the femoral neck. "People have been intimidated by the language associated with bone density reports over the years," Dr. Steven T. Harris, a member of the editorial board that drafted the updated position statement, said in an interview. "It's distressing to be told that you have osteopenia or osteoporosis. To be able to use the FRAX tool to reduce that to a number—some reasonable estimate of fracture risk—is very helpful."

Dr. Utian, a member of the 2008-2009 NAMS Board of Trustees who reviewed the position statement, said that FRAX was included because clinicians have come to realize "some of the limitations of DXA and the overuse of DXA, which could lead to inappropriate therapies. While DXA is a valuable tool, the FRAX gives you an ability to speak to individuals and actually give them an idea of what their risk is. It also gives health care organizations the ability to set parameters at what level of risk they would consider therapy to be indicated."

According to the statement, drug therapy is indicated for postmenopausal women with osteoporotic vertebral or hip fracture; BMD values consistent with osteoporosis (a T score of –2.5 or lower); or a T score from –1.0 to –2.5 and a 10-year FRAX risk of major osteoporotic fracture (hip, shoulder, wrist, and spine) of at least 20% or hip fracture of at least 3%.

Another new part of the NAMS statement recommends that postmenopausal women obtain 800-1,000 IU/day of vitamin D_3, up from the recommended dosage of 400-600 IU/day contained in the 2006 statement. "There is more and more evidence that even in temperate areas, there isn't enough sun exposure to guarantee vitamin D sufficiency, particularly during the winter months," said Dr. Harris of the University of California, San Francisco. "I think that the recommended allowance of 800-1,000 IU/day will be increased again at some point, but I think it's a reasonable starting point."

As for choice of a specific osteoporosis therapy, the statement emphasizes that no head-to-head trials comparing the effectiveness of pharmacologic therapies to reduce fracture risk have been conducted. Current approved treatment options include bisphosphonates, selective estrogen-receptor modulators (SERMs), parathyroid hormone, estrogens, and calcitonin.

According to the statement, bisphosphonates "are the first-line drugs for treating postmenopausal women with osteoporosis. They have reduced the risk of vertebral fractures by 40%-70% and reduced the incidence of nonvertebral fracture, including hip fracture, by about half this amount."

The SERM raloxifene "prevents bone loss and reduces the risk of vertebral fractures, but its effectiveness in reducing other fractures is uncertain. Extraskeletal risks and benefits are important when considering raloxifene therapy." ■

Disclosures: *The development of the statement was supported by an unrestricted educational grant from the Alliance for Better Bone Health, a collaboration between Warner Chilcott and its affiliates and Sanofi-Aventis US. Dr. Utian and Dr. Harris disclosed relationships with multiple pharmaceutical firms.*