Lupus Patients Need 2,000 IU Daily Vitamin D

VITALS

Major Finding: Five of six black lupus patients who were given 2,000 IU vitamin D daily repleted serum 25-hydroxyvitamin D to 30 ng/mL or more at 3 months.

Data Source: A phase 1 study of 18 patients.

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BY M. ALEXANDER OTTO

FROM THE INTERNATIONAL CONGRESS ON SYSTEMIC LUPUS ERYTHEMATOSUS

VANCOUVER, B.C. — A daily dose of at least 2,000 IU of vitamin D is required to elevate serum 25-hydroxyvitamin D levels above 30 ng/mL, the minimum threshold for optimal immune health, according to results from an open-label, phase I study of vitamin D repletion in 18 black patients with lupus.

Starting from a baseline mean 25-hydroxyvitamin D (25[OH]D) level of 13.3 ng/mL, six patients received 800 IU vitamin D once daily; six received 2,000 IU once daily; and six received 4,000 IU once daily, reported Dr. Diane Kamen, a rheumatologist at the Medical University of South Carolina in Charleston.

After 12 weeks, 67% (four patients) in the 800-IU group, 83% (five) in the 2,000-IU group, and 67% (four) in the 4,000-IU group repleted to 30 ng/mL or greater.

In the 4,000-IU group, levels in 33% (two patients) rose above 40 ng/mL. That level was not reached at the lower doses.

The results are important, Dr. Kamen said in an interview after the meeting, because although there is growing awareness that such high doses of vitamin D are needed to restore 25(OH)D levels in patients with autoimmune disease, the rheumatology literature still contains recommendations for doses of 600-800 IU/day.

"That's just not going to cut it; 2,000 IU a day is the minimum effective dose for repletion," especially if patients avoid the sun to prevent lupus flares, Dr. Kamen said.

Physicians "need to know to recommend those higher doses, and to monitor levels" of 25(OH)D to make sure they are maintained, she said.

The 18 patients were enrolled from a population of blacks living on the Sea Islands of South Carolina and Georgia, a population known as the Gullah in whom there is a high incidence of lupus.

An earlier Gullah study found that 43% of 187 subjects had 25(OH)D levels below 10 ng/mL; in some, levels were undetectable.

Lower levels correlated with higher SLEDAI (Systemic Lupus Erythematosus Disease Activity Index) scores and higher anti-dsDNA antibody levels, Dr. Kamen said.

The mean age in the phase I study was 44 years; the mean prednisone dose 4.3 mg/day, and the mean SLEDAI score 2.4. In all, 17 of 18 of the subjects were women, 50% (9) took hydroxychloroquine, and 50% (9) were anti-dsDNA antibody positive.

Compliance with the treatment regimen was 99%, by pill count. The doses were very well tolerated and safe, Dr. Kamen said.

Although 2,000 IU per day elevated 25(OH)D levels in most patients to at least 30 ng/mL, there's debate about whether target blood levels should be higher in lupus patients.

"We know that 30 ng/mL is the minimum accepted as normal," Dr. Kamen said, noting that secondary hyperparathyroidism can begin below that level.

"I tell my patients at high risk for conditions influenced by vitamin D, such as osteoporosis and inflammatory conditions, that we want them to stay between 40 and 60 ng/mL," she said, but "it's a gray zone" that awaits further research.

Levels of 25(OH)D are known to be low in lupus patients, but no one can say for sure whether that is a cause or a consequence of the disease, or if it results from the medications that are used to treat it, such as prednisone and hydroxychloroquine. ■