Normalizing Vitamin D Levels May Be Protective

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From the annual meeting of the American College of Cardiology

ATLANTA — Vitamin D—deficient patients who reached normal levels had significantly lower cardiovascular event rates than did patients whose levels remained deficient, based on a large prospective observational study.

"Since testing for vitamin D is simple and relatively inexpensive, and therapy is safe and easily administered, patients with low levels should be considered for supplementation," Dr. Tami L. Bair concluded at the meeting.

She reported on relative risk for events in 9,491 patients with serum vitamin D

Major Finding: During an average follow-up of 1.2 years, patients whose serum vitamin D levels rose from less than 30 ng/mL to at least 44 ng/mL had the lowest rates of death or new-onset diabetes, CAD, MI, heart failure, depression, and renal failure.

Data Source: An observational follow-up study of 9,491 patients, 78% women, with a mean baseline serum vitamin D of 19.3 ng/mL.

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levels of 30 ng/mL or less. Their average age was 57 years, 78% were women, and their mean baseline serum vitamin D was 19.3 ng/mL.

During up to 6 years of prospective follow-up, nearly half (47%) of the group boosted their serum vitamin D levels to normal values above 30 ng/mL.

Those patients who boosted their levels had significantly lower rates of myocardial infarctions, heart failure, coronary artery disease, and renal failure.

In addition, among those who normalized their serum vitamin D levels, there was a trend for a lower mortality risk during follow-up compared with patients whose vitamin D levels remained deficient.

Significantly higher rates of events were seen in 1,256 patients with serum vitamin D levels of 10-19 ng/mL, compared with 1,670 patients who increased their levels to 44 ng/mL or more, according to Dr. Bair.

Regarding coronary artery disease, there was a 27% increase in events; for heart failure, a 32% increase; for MI, a 59% increase; for renal failure, a 51% increase.

For skeletal disease, there was a 71% increase; for anemia, a 30% increase.

The differences in all-cause mortality fell short of significance. A 42% increase was seen in the group whose vitamin D levels remained at 10-19 ng/mL, noted Dr. Bair of the Intermountain Medical Center Heart Institute in Murray, Utah.

This was not a randomized trial, she cautioned. Investigators do not know how patients increased their serum vitamin D levels.

However, the results certainly make a case for conducting randomized trials of vitamin D supplementation to boost low serum vitamin D as a means of preventing cardiovascular events, Dr. Bair added.

Event rates were lowest in the 1,670

patients who boosted their serum vitamin D levels to 44 ng/mL or more.

The choice of the 44-ng/mL cutpoint was based on results of a separate 31,289-patient study presented at the meeting by Dr. Bair's colleague. Heidi T. May, Ph.D., concluded that rates of seven of nine adverse outcomes were significantly lower in the 3,387 study participants whose baseline serum vitamin D level was at least 44 ng/mL.

During an average follow-up of 1.2 years, patients with a serum vitamin D of 44 ng/mL or more had the lowest rates of death or new-onset diabetes, CAD, MI, heart failure, depression, and renal failure. However, patients with optimal vitamin D levels did not have lower rates of new-onset hypertension or cerebrovascular events compared with patients with low or very low vitamin D levels.

