Oral Vitamin D May Avert Lupus Inflammation

Vitamin D supplements lower levels of inflammatory and hemostatic biomarkers.

BY DIANA MAHONEY

 SAN FRANCISCO – Talking to patients after they start an antiresorptive drug for osteoporosis is better than laboratory testing to convince them to stay on therapy, according to Dr. Douglas C. Bauer.

Bone mineral density testing determines the need for antiresorptive medication, but it’s less helpful in monitoring the effects of treatment or adherence to therapy than is talking to patients. A test showing bone loss in the first year of treatment can confuse patients and does not necessarily mean they are not responding to treatment, said Dr. Bauer, professor of medicine and of epidemiology and biostatistics at the University of California, San Francisco.

Besides, talking to patients who stop osteoporosis therapy within 3 years do so within the first few months of treatment, so annual bone density testing is unlikely to improve adherence, he added.

Biochemical markers of bone turnover eventually may become the standard for monitoring treatment, but “we’re not there yet,” he said at the meeting, sponsored by the university.

Studies have shown that follow-up discussions after a patient starts antiresorptive medication is the factor that improves adherence, not measuring bone density or bone turnover markers.

Dr. Bauer said he tells patients not to expect routine follow-up bone turnover tests within 1 year and asks about and encourages adherence at every patient visit. If a patient develops a fracture while on therapy or is considering discontinuing treatment, he said he considers offering follow-up bone mineral density testing. “There’s a caveat: This may not be the right algorithm for tertiary care centers with severe or complex patients,” said Dr. Bauer.

Although bone mineral density measurements are very precise, small differences in position or “noise” in the measures can produce apparent changes that are not clinically meaningful. To assess whether a change in bone density is “real,” he recommended a useful equation called the “least significant change” equation:

\[ \text{change is } 4.5\% \]

The least significant change is 4.5%. If a patient lost 3% in bone density, there is approximately a 10% chance that there was no change in bone density, he said.

“A somewhat more fundamen tal question is not just whether the measurements [are] real, but are they meaningful?” Dr. Bauer said.

Analyses of data from the Fracture Intervention Tri al (FIT) show that patients on alendronate who lost up to 4% in total hip bone density in the 1-2 years of treatment still had 53% fewer vertebral fractures compared with their counterparts on placebo who lost similar amounts of bone density. Patients who lost up to 4% in spine density had 60% fewer vertebral fractures compared with their counterparts on placebo (Osteoporos. Int. 2005;16:842-8).

Then there’s the “regression to the mean” argument that patients with an unusual response in the first year of antiresorptive therapy are more typical responders if treatment is continued, he said. A separate analysis of FIT data showed that 92% of patients who lost up to 4% of hip bone density in the first year of therapy gained a mean of nearly 5% in bone density in the second year of treatment (JAMA 2000;283:1318-21).

A more recent analysis of annual bone mineral density data in FIT showed that variation in the change in bone density over a 3-year period was mainly measured-related, within-person variation.

“Treatment-related, between-person variation played a much smaller role (BMJ 2009;338:b2266).”

That helps explain how patients can “lose” bone density but still have fewer fractures, Dr. Bauer said. “It’s reassuring that 98% on alendronate gained more than 0.02 g/cm^2” in FIT.

Antiresorptive therapy decreases biochemical markers of bone turnover, but there is a lot of biologic variability and no clear threshold for efficacy. Biochemical marker measurements could be used to identify nonadherence to treatment, but “it’s cheaper just to ask,” he said.

In a study of 2,382 osteoporotic women starting a year of risedronate therapy, the women were randomized to get bone turnover markers measured at weeks 13 and 25 or to routine visits without marker measurements. The results showed no difference in adherence rates between the groups (J. Clin. Endocrinol. Metab. 2007;92.1296-304). In the marker measurement group, the adherence was 125% worse than in the control group if the marker results suggested a “bad” response to therapy (less than a 30% decrease in marker levels).

“That was unexpected,” Dr. Bauer said. “Bone turnover markers by themselves are not helpful for increasing adherence” to therapy.

A separate randomized study of 75 women starting risedronate therapy for low bone density randomized them to no monitoring; nurse visits at months 3, 6, and 9; or nurse visits plus bone turnover marker measurements. The nurse visits improved adherence to therapy compared with no monitoring, but biomarker measurements did not add anything to the nurse visits (J. Clin. Endocrinol. Metab. 2004;89:1117-1123). In general, approximately 30%-40% of patients stop taking antiresorptive drugs within 1 year, he said.

Dr. Bauer said he has received research funding from Amgen, Novartis, and Procter & Gamble.

MD Encouragement Improves Antiresorptive Tx Adherence

BY SHERRY BOSCHERT

EXPERT ANALYSIS FROM A MEETING ON OSTEOPOROSIS

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