Bone Loss in Teens on DMPA Tied to Vitamin D

VITALS

Major Finding: In a substudy of 15 adolescent girls with significant bone loss while using depot medroxyprogesterone acetate, only 1 participant had a "sufficient" serum vitamin D level of greater than 30 ng/mL.

Data Source: Subset of a prospective study of 181 adolescent girls on depot medroxyprogesterone acetate.

Disclosures: The study was sponsored by Pfizer/Pharmacia, and one of the investigators was employed by that company. Dr. Harel disclosed financial relationships with Merck, Teva/Duramed, Ortho-McNeil, GlaxoSmithKline, Novartis, and Warner Chilcott.

BY ROBERT FINN

FROM THE ANNUAL CLINICAL MEETING OF THE NORTH AMERICAN SOCIETY FOR PEDIATRIC AND ADOLESCENT GYNECOLOGY

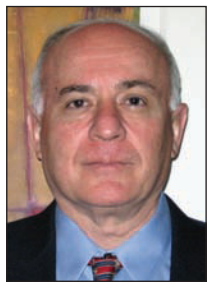
LAS VEGAS — Abnormally low levels of vitamin D were seen in a subset of 15 adolescent girls who had substantial losses in bone mineral density while using depot medroxyprogesterone acetate for contraception, according to preliminary results from a prospective study.

The girls were among 181 teens using depot medroxyprogesterone acetate (Depo-Provera, Pfizer) in a prospective study. Bone mineral density (BMD) losses of 5% or more were seen at the lumbar spine in 25% and at the hip in 50% of the study participants.

The relative estrogen deficiency associated with depot medroxyprogesterone acetate (DMPA) did not correlate with the size of the BMD loss, said Dr. Zeev Harel of Brown University, Providence, R.I.

Moreover, serum estradiol remained above 40-50 pg/mL in almost all participants, Dr. Harel said. This level is considered to be sufficient to conserve bone in elderly women.

He and his colleagues looked at 15 young women who lost at least 5% of BMD from baseline. Their mean age was 17 years, and they were an average of 61 months post menarche. Their BMIs were within the normal range, and none was obese. Their ethnicity was diverse, and they resided in various U.S. locations.



The mean serum 25(OH)D level among the participants was about 25 ng/mL, in the insufficient range.

DR. HAREL

The investigators noted BMD losses in the majority of the 15 girls after two or three DMPA injections, but some participants did not exhibit BMD losses until after their 10th or 13th injection.

Serum 25-hydroxyvitamin D (25[OH]D) levels were available for 14 of the 15 girls, and all but 1 had low levels of vitamin D. Levels above 30 ng/mL are considered sufficient, levels between 20 and 30 ng/mL are referred to as "insufficient," and levels below 20 ng/mL are referred to as "deficient." Seven of the 14 participants (50%) were vitamin D insufficient, 6 (43%) were vitamin D deficient, and 1 (7%) had normal levels of vitamin D. The mean serum 25(OH)D level among the participants was about 25 ng/mL, in the insufficient range. Mean levels of parathyroid hormone, on the other hand, were in the normal range.

In an interview, Dr. Harel expressed surprise at these results. "I was expecting probably less than 30% [of the participants would have low levels of vitamin D]," he said "We were surprised specifically because when we drew the blood we did it at the end of the summer. Typically we absorb vitamin D from the sun. Also, most of the patients were Caucasian. We know that vitamin D deficiency is common in African Americans and Hispanics. Also, they were not extremely obese. We know we can find vitamin D deficiency in obesity. And we also had representatives from states that were really sunny, California for example."

Dr. Harel said the results were worrisome enough for him to recommend measuring total 25(OH)D in adolescent girls using depot medroxyprogesterone acetate. "And if it's low—deficient or insufficient—treat it accordingly." ■