Low Bone Mass, Pediatric SLE Duration Linked

BY HEIDI SPLETE
Senior Writer

Low bone mineral density in children and teens with systemic lupus erythematosus was more closely linked to longer disease duration than to the cumulative use of corticosteroids, reported Dr. Sandrine Compeyrot-Lacassagne and colleagues at the Hospital for Sick Children in Toronto.

The common practice of using high-dose corticosteroids to treat chronic inflammation may place at risk the bone health of children who have systemic lupus erythematosus (SLE), the study's researchers noted.

To determine the prevalence of and risk factors for low bone mineral density in juvenile SLE patients, Dr. Compeyrot-Lacassagne and colleagues reviewed 64 consecutive patients younger than 18 years who met the American College of Rheumatology criteria for SLE and had undergone dual x-ray absorptiometry (DXA) scanning between January 2001 and July 2004. The DXA scans were performed an average of 3 years after SLE diagnosis in all but five patients who underwent scans when they were first diagnosed (Arthritis Rheum. 2007;56;1966-73).

Overall, osteopenia at the lumbar spine appeared in 24 (38%) of the patients; osteoporosis at the lumbar spine appeared in 13 (20%); and decreased bone mineral density (BMD) at the hip (a BMD less than 80%) appeared in 12 patients (19%). Because these findings were similar to the prevalence rates in studies of adults with SLE, the researchers recommended using the same definitions of osteopenia (BMD less than –1 and greater than or equal to –2.5) and osteoporosis (BMD less than –2.5) that are used in adults.

Cumulative corticosteroid use was the only significant predictor of lumbar spine osteopenia, but disease duration was the only significant predictor of both lumbar spine osteoporosis and a hip BMD less than 80% in a multivariate analysis.

The lower odds ratio of cumulative corticosteroid use compared with disease duration suggests a lesser contribution of corticosteroids to BMD, the researchers noted. In addition, lupus nephritis was associated with lumbar spine osteoporosis, but the association fell short of statistical significance in the multivariate analysis.

Osteoporosis was significantly associated with disease duration, cumulative corticosteroid dose, duration of corticosteroid use, and lupus nephritis, according to the findings of a univariate analysis. Similarly, both osteopenia and decreased hip BMD were significantly associated with disease duration, cumulative corticosteroid dose, and duration of corticosteroid use.

Additional studies are needed to confirm a lack of association between corticosteroid use and osteoporosis, the researchers said. ■

fMRI Showed Brain Damage in Lupus

BY KATE JOHNSON
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TORONTO — Cognitive impairment in childhood-onset systemic lupus erythematosus can be identified with functional magnetic resonance imaging, Svetlana Lvovich, D.O., reported in a poster at the annual meeting of the Pediatric Academic Societies.

The pilot study included 10 patients with SLE, 5 of whom had cognitive impairment (CI) and 5 of whom did not. Patients completed three tasks during functional magnetic resonance imaging (fMRI) designed to evaluate attention, working memory, and language processing. "They need to recruit more neurons to do the task," said Dr. Lvovich in an interview.

The preferred method for diagnosing CI in SLE patients is neuropsychiatric testing, which is time consuming and requires extensive training, said Dr. Lvovich of the Cincinnati Children's Hospital Medical Center. In contrast, fMRI is quick and easy to perform.

There also were subtle fMRI differences seen between SLE patients with normal cognition, compared with healthy controls, "suggesting that SLE-specific processes contribute to CI rather than the long-term use of steroids," she noted. "However, to determine this, we will need to look at patients who are on steroids but don't have SLE."

"We think fMRI may be useful to investigate and identify cortical roots of cognitive impairment in children with SLE," she concluded. ■