Children With Epilepsy Already at Risk for Fractures

BY DIANA MAHONEY
New England Bureau

LOS ANGELES — Children with treated epilepsy show significant osteopenia, placing them at high risk for pathological fractures, early results from an ongoing prospective study have shown.

The findings suggest that epilepsy and/or its treatment either induce accelerated bone loss or are primary determinants of failure to accrue normal bone mineral density, according to Dr. Marc K. Drezner, a professor of medicine at the University of Wisconsin, Madison.

While older patients with treated epilepsy have osteopenia and pathologic fractures at a significantly higher rate than the general population, controversy exists over whether the osteopathy results from epilepsy and its treatments or reflects age-dependent bone disease, Dr. Drezner said in a poster presentation at the annual meeting of the Child Neurology Society.

Dr. Drezner and his associates compared age-normalized total body bone mineral density (BMD) *z* scores of 8- to 18-year-old patients with treated epilepsy and healthy controls, excluding epilepsy patients who were non-ambulatory, had chronic diseases other than epilepsy, or were taking medications with known adverse bone effects.

The investigation included 34 treated epilepsy patients and 24 healthy controls (mean age 13) with comparable gender and weight distributions, calcium intake, and activity levels.

The mean BMD *z* scores were –0.31 for the epilepsy patients and 0.71 for the control group, a statistically significant difference, Dr. Drezner stated. Of the 34 epilepsy patients, 8 had BMD measures more than one standard deviation below normal, indicating osteopenia, while none of the healthy controls had osteopenic measures. Also, 8 of the control patients had BMD measures more than one standard deviation above normal, compared with only 5 of the epilepsy patients.

This study, which is still enrolling patients, is supported by a grant from GlaxoSmithKline. ■

Genes Hold Key To Nonresponse To Biologics in JIA

VIENNA — The day is fast approaching when physicians will be able to forecast which juvenile idiopathic arthritis patients will respond to anti–tumor necrosis factor–α therapy based upon gene-expression profiling conducted after just a few days of treatment, Dr. Joern Kekow predicted at the annual European congress of rheumatology.

About 30% of JIA patients prove to be nonresponders to anti–TNF-α therapy. The ability to selectively target it to those most likely to benefit while sparing others from needless exposure to side effects and expense will be a most welcome development, observed Dr. Kekow of the University of Magdeburg (Germany).

Promising targets include: uPAR, GADD34, ICAM-1, TNF-α, interferon-1 β, and MIP-1α.

DR. KEKOW

She reported on nine patients, mean age 15, with JIA—five with oligoarthritis, three with enthesis-related arthritis, and one with psoriatic arthritis—who underwent microarray analysis of the expression of 22,000 of their genes prior to and again 72 hours after starting etanercept or infliximab therapy.

Expression of roughly 500 genes proved to be significantly upregulated or downregulated in at least five of the nine patients within the first 3 days of anti–TNF-α therapy. Changes in the expression of a subgroup of these genes correlated strongly with clinical outcomes as assessed at 3 months.

The promising candidates include uPAR, GADD34, ICAM-1, TNF-α, interferon-1β, MIP-1α, manganese superoxide dismutase, COX-2, PBEF, and GRO-α, she said at the meeting, sponsored by the European League Against Rheumatism.

—Bruce Jancin