Atypical Fractures Rise With Bisphosphonate Use

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TORONTO – Patients with osteoporosis who are on bisphosphonate therapy clearly face an increased treatment-linked rate of atypical fractures, said Dr. Elizabeth Shane, a professor of medicine at Columbia University in New York and co-chair of the task force.

The largest and most comprehensive look at atypical fracture rates came from data compiled from the 2.6 million beneficiaries older than 45 years enrolled in Kaiser California. During January 2007-December 2009, 15,819 people had femur fractures, excluding those from major trauma, those secondary to Paget’s disease or metastatic lesions, or perioper- thotic fractures. The researchers reviewed the radiographs for 1,448 of these fractures located in the diaphyseal region.

Of the reviewed fractures, the researchers identified 135 as atypical. Dr. Susan Ott of the University of Washington, Seattle, reported at the meeting. The 135 patients with atypical fractures were 98% women, with an average age of 71 years and an average body mass index of 26.6 kg/m². The fracture patients had a modest, 2% mortality rate during the year following the event. In atypical fracture patients who had bone density information available, the T scores averaged –2.2.

All but 4% of the atypical fracture patients received a bisphosphonate at the time of fracture, and were on their regimen for an average of 6 years. Two-thirds had prodromal thigh pain, and 26% had bilateral atypical fractures. In all, 60% of the fractures occurred in the femur shaft, and 40% were in the subtrochanteric region.

The most common age at fracture was 65-69 years, with a majority of atypical fracture patients aged 65 or older. The fracture rate rose steadily with increasing years of bisphosphonate use, with most fractures occurring in patients who had used the drugs for at least 5 years, even though these long-term users represented a small minority of all Kaiser patients who used a bisphosphonate during the 3 years studied. The number of fractures per 100,000 people exposed rose steadily with increasing years of use, reaching 50 per 100,000 when bisphosphonate use continued for 5 years and 100 fractures per 100,000 patients in those using the drug for 6 years, and then continuing to rise steadily with added years of use, reaching a high of nearly 250 fractures for every 100,000 patients exposed.

“These data do not suggest you should stop using bisphosphonates, especially in women with osteoporosis. Bisphosphonates look pretty safe for the first few years,” Dr. Ott said. But, she added, “the data argue that if a patient does not have osteoporosis, then bisphosphonates are not the appropriate drug.”

The ASBMR task force reviewed Dr. Ott’s data before issuing its recommendations. The analysis suggested that bisphosphonate use is associated with a small but statistically significant increase in subtrochanteric fractures. The new data present no direct evidence for a role of bisphosphonate use in causing subtrochanteric hip fractures, which along with femoral shaft fractures constitute the “atypical” category. But the temporal link between the steady increase in bisphosphonate use among elderly American women during 1996-2007 and the concurrent rise in subtrochanteric fractures also in elderly women strongly suggests that a causal link exists, Dr. Wang said.

He analyzed data on U.S. subtrochanteric fracture rates from the Nationwide Inpatient Sample from 1996 to 2007, along with data on U.S. bisphosphonate use from the Medical Expenditure Panel Survey. The analysis suggested that bisphosphonate use led to one subtrochanteric fracture for every 100 typical hip fractures prevented, according to analysis of national data during 1996-2007. The new data present no direct evidence for a role of bisphosphonate use in causing subtrochanteric hip fractures, which along with femoral shaft fractures constitute the “atypical” category. But the temporal link between the steady increase in bisphosphonate use...