Repeat BMD Test of No Value for Older Women

BY MARY ANN MOON
Contributing Writer

Repeat bone mineral density testing 8 years after initial measurement does not improve the ability to predict fractures in healthy elderly women, according to Dr. Teresa A. Hillier and her associates.

Repeat BMD testing is done "commonly" in clinical practice, even though "there is little evidence evaluating the additional value of repeat BMD testing for fracture risk," the investigators reported (Arch. Intern. Med. 2007;167:155-60).

The Study of Osteoporotic Fractures included 9,704 white women aged 65 years and older who were living in four regions of the United States. Of the women, 4,124 underwent initial BMD measurement in 1989-1990 and then had a repeat BMD measurement a mean of 8 years later, forming the sample for the current study, said Dr. Hillier of Kaiser Permanente Center for Health Research Northwest, Portland, Ore., and her associates.

The subjects were followed for an additional 5 years to track the incidence of fractures. The BMD measurements were taken at the proximal femur, intertrochanter, trochanter, femoral neck, and Ward's triangle. The 513 subjects who sustained a fracture between the initial and the repeat BMD assessments were excluded from the study.

Both measurements of BMD were significant predictors of hip fracture and nonspinal fracture risks. "Each standard deviation lower in either initial or repeat BMD was associated with a 55%-61% increased risk of incident nonspine fracture, a 102%-121% increased risk of incident hip fracture, and a 75%-86% increased risk of spine fracture," Dr. Hillier and her associates reported.

However, the repeat BMD did not add to the overall predictive value for any type of fracture risk. These results persisted in subgroup analyses of women who used estrogen or bisphosphonate, compared with those who did not.

Their findings do not imply that repeat BMD measurement may not be useful for certain individual patients, "particularly if intervening clinical factors are present that would likely accelerate BMD loss greater than average," Dr. Hillier and her associates noted.

"However, our results do suggest that, for the average healthy older woman … a repeat BMD measurement has little or no value in classifying risk for future fracture—even for the average older woman who has osteoporosis by initial BMD measure, or high BMD loss," they wrote, noting this study did not address BMD testing to monitor osteoporosis treatment response. These results may not be generalizable to men, nonwhite women, or women younger than 65. ■

Moderate Kidney Dysfunction Ups Risk for Hip Fractures in Women

BY MARY ANN MOON
Contributing Writer

Moderate renal impairment raises the risk of hip fracture, particularly trochanter fracture, in older white women, reported Dr. Kristine E. Ensrud, and her associates in the Study of Osteoporotic Fractures.

"These findings suggest that clinicians should consider including renal function as part of the risk assessment for hip fracture in elderly women," the researchers reported. An increased rate of hip fractures has been reported in patients with end-stage renal disease, those undergoing dialysis, and those who have received a renal transplant. However, this is the first longitudinal study of the link between hip fracture and mild to moderate renal insufficiency, according to Dr. Ensrud of the Veterans Affairs Medical Center, Minneapolis, and her associates.

They conducted a case-cohort study within the Study of Osteoporotic Fractures, a prospective study of over 9,700 women living in four U.S. regions that were aged 65 and older when enrolled in 1986-1988. The investigators assessed 149 white patients randomly selected from among those who sustained hip fractures during a mean follow-up of 6 years, and 377 without hip fractures.

A decreased estimated glomerular filtration (GFR) rate was significantly associated with an increased risk for hip fracture, even after the data were adjusted to account for traditional risk factors, the researchers reported (Arch. Intern. Med. 2007;167:133-9). In patients with a mildly decreased GFR the hazard ratio for hip fracture was 1.7, and in those with a moderately decreased GFR the hazard ratio was 2.3, compared with subjects who had a normal GFR.

Similarly, in subjects with a mildly decreased GFR the risk of trochanteric fracture in particular was increased nearly fourfold, and in those with moderately decreased GFR it was increased fivefold, compared with those who had a normal GFR. The underlying mechanisms for these associations are not yet understood. Abnormalities in phosphorous, calcium, and vitamin D metabolism occur in even mild renal insufficiency. And moderate renal dysfunction has been linked with increased inflammation, impaired coagulation, anemia, and malnutrition, Dr. Ensrud and her associates noted.

In an editorial comment accompanying the report, Dr. Stuart M. Sprague of Northwestern University, Chicago, said that "a staggering 19.2 million Americans, or 11% of the adult population," currently have chronic kidney disease (CKD).

The study findings "are potentially very important, as they support the concept that a diagnosis of osteoporosis based on [bmd] criteria should not be made in patients with CKD and used as a predictor of fracture outcome," Dr. Sprague wrote (Arch. Intern Med. 2007;167:115-6). ■

Ask the Expert

Bisphosphonates and Jaw Osteonecrosis

Over the past decade, bisphosphonates have revolutionized the treatment of osteoporosis. The synthetic pyrophosphate analogues reduce bone loss, increase bone mineral density, and reduce the risk of fracture of the spine and hip in many patients. Additionally, bisphosphonates are commonly used to suppress abnormal bone mineral density loss in a range of other nonmalignant and malignant bone conditions.

BY LINDA A. RUSSELL, M.D.

With the exception of gastrointestinal complications in some patients, bisphosphonates have been thought to be generally well tolerated by patients. Recent reports, however, have linked these drugs to osteonecrosis of the jaw.

According to the findings of a recent meta-analysis, this outcome has been seen mainly in patients receiving high-dose intravenous bisphosphonate therapy for the treatment of bone malignancies; however, a small percentage of reported cases has occurred in patients receiving oral bisphosphonates for osteoporosis and Paget's disease (Ann. Intern. Med. 2006;144:753-61).

Although the risk of jaw osteonecrosis appears to be relatively low among patients receiving oral bisphosphonates, the possibility of this outcome should be discussed with osteoporosis patients, according to rheumatologt Linda A. Russell. In this month's column, she discusses the link between jaw osteonecrosis and bisphosphonates, including information on prevention and treatment.

Rheumatology News: What is the presumed mechanism by which bisphosphonates make the jaw vulnerable to osteonecrosis?

Dr. Russell: Bisphosphonates are toxic to osteoclasts and work by preventing the resorption of old bone. The reduction in bone turnover may be more critical in the jaw. A vulnerable patient may have a low-grade infection in his or her mouth, often as a result of dental extraction or other dental surgery. Because the bisphosphonate impedes bone turnover, healing in these patients is slowed, potentially leading to osteonecrosis.

RN: What are some of the factors that increase an individual's risk of developing jaw osteonecrosis?

Dr. Russell: Patients who have cancer usually receive significantly higher dosages of bisphosphonates than do patients taking the drugs for osteoporosis, and most investigators feel the increased risk of jaw osteonecrosis is due primarily to the increased dose. Additionally, patients with metastatic cancer may pay less attention to dental hygiene than would other patients, as a consequence of their priorities, and thus may be more prone to infection. Also, patients with poor oral health are more likely than are those with fastidious dental hygiene to have chronic mouth infections that in turn make them more vulnerable to jaw necrosis.

RN: How is the condition diagnosed?

Dr. Russell: Dentists or oral surgeons are usually the first to identify osteonecrosis in the jaw. Unfortunately, the condition is newly recognized and not all dentists are comfortable with this diagnosis.

RN: What are the clinical signs and symptoms that rheumatologists should be aware of?

Dr. Russell: Rheumatologists should be alerted to any patient on a bisphosphonate who complains of jaw or mouth pain, a nonhealing sore in the mouth, or a need for dental work.

RN: Can the process of jaw osteonecrosis be stopped once it has started?

Dr. Russell: Once osteonecrosis is recognized, the bisphosphonate should be stopped and the treating dentist or oral surgeon can prescribe an antibiotic mouthwash. In a number of cases, the process can be halted. Some patients, however, will have continued pain and poor healing.

RN: What should physicians who treat osteoporosis be telling their patients, particularly with respect to prevention?

Dr. Russell: Physicians should discuss this potential side effect with their patients who are on bisphosphonates. All patients should see their dentists regularly for cleaning and evaluation. Although this risk factor is not yet definitive, patients with very low bone turnover may be at increased risk for developing jaw osteonecrosis. For this reason, the urine NTX (*N*-telopeptide) should be monitored regularly to be sure its level stays above 10 nM BCE/mM creatinine. ■

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By Diana Mahoney, New England Bureau