

BMD Early in Menopause Predicts 10-Year Bone Health

Findings of this study support the role of bone density measurements in the first years after menopause.

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HARROGATE, ENGLAND — A single bone mineral density measurement early in menopause is a strong predictor of future bone status in women not considered at risk for osteoporosis, a study has shown.

Despite various rates of bone mineral loss among individuals and measurement sites, baseline bone mineral density (BMD) measures of 766 women in the Danish Osteoporosis Prevention Study predicted 75% of the variation in lumbar spine BMD and 74% of femoral neck BMD variation over 10 years, Bo Abrahamsen, M.D., reported at the annual conference of the National Osteoporosis Society.

None of the women were taking hormone therapy or antiresorptive drugs. The baseline scans were acquired within 2 years of menopause.

Baseline lumbar spine T-scores greater than -1.2 were associated with a 90% negative predictive value for developing osteoporosis over 10 years, whereas a lumbar spine T-score greater than 0.5 had a negative predictive value of 100%.

A baseline femoral neck T-score greater than -1.7 had a 90% negative predictive value for femoral neck osteoporosis.

"No women developed femoral neck osteoporosis in the absence of baseline femoral neck os-

teopenia," said Dr. Abrahamsen of Odense (Denmark) University Hospital.

At baseline, having a lumbar spine T-score greater than -1.0 or a femoral neck T-score greater than -0.5 was associated with a 90% negative predictive value for osteoporosis of the lumbar spine and/or the femoral neck.

"Women with lumbar spine osteopenia at baseline had a 46% risk for developing osteoporosis of the femoral neck or lumbar spine," Dr. Abrahamsen explained.

At the same time, fewer than 10% of women whose T-scores of the spine or femoral neck dipped below -2.5 within 10 years had spinal osteopenia at their initial visit, he said.

The findings support the role of bone density measurements in the first years after menopause.

"There is an increasing demand for [bone density measurement] with the onset of menopause due to concerns about the safety of hormone replacement therapy and a possible need for considering other treatment," he said. "We know that, despite the fact that the average rate of bone mineral loss is only a few percent per year, there is much individual variation in those rates. These results tell us that much of the variation in future bone mineral density can be predicted by baseline BMD."

As such, baseline measures should be considered for long-term treatment planning, he concluded. ■

Fracture Risk Increases With Albumin, T3 Deficiencies

HARROGATE, ENGLAND — Low serum albumin and T3 levels are independently predictive of vertebral fractures in women older than 50 years, a 10-year prospective study has shown.

Because albumin and T3 deficiencies are considered markers of frailty and sickness, the findings suggest that chronic poor health may itself be a risk factor for vertebral fracture, said Judith Finigan, principal investigator and research nurse in the bone metabolism group at the University of Sheffield (England).

To identify predictors of fracture in women between ages 50 and 85, the Sheffield investigators acquired baseline bone mineral density (BMD) measures and medical and lifestyle information from a population-based group of 375 women. They also collected fasting blood samples for measuring serum calcium, alkaline phosphatase, parathyroid hormone, creatinine, phosphate, albumin, and thyroid hormones.

All of the participants had spinal radiographs taken at base-

line and at years 2, 5, 7, and 10, which were reviewed for incident vertebral fractures by a single radiologist. Nonvertebral fractures were confirmed by radiologist reports.

Cox regression analysis showed that numerous risk factors—including age; BMD at the lumbar spine, hip, or total body; years of estrogen exposure; and prevalent vertebral fracture—predicted fractures overall.

Low serum T3, low serum albumin, and low body fat were specifically predictive of vertebral fractures but not nonvertebral fractures. These measures remained significantly predictive, even after adjustment for age, Ms. Finigan reported at the annual conference of the National Osteoporosis Society. Neither TSH nor T4 predicted fracture, she noted.

The age-adjusted relative risks per standard deviation decrease for T3, albumin, and body fat were 1.71, 1.74, and 1.55, respectively. "T3 and albumin also predicted vertebral fracture independently of spine or hip

BMD," Ms. Finigan said.

In a separate analysis of a larger cohort, the investigators examined the relationship between serum albumin and vertebral fractures in postmenopausal women from the placebo arms of the Hip Intervention Program (HIP) trial and the Vertebral Efficacy with Risedronate Therapy (VERT) trial.

At 3 years, 381 of 2,720 subjects had experienced one or more incident vertebral fractures. A multiple stepwise logistic regression analysis showed a 1.23 relative risk of vertebral fracture for each standard deviation decrease in serum albumin, after adjusting for femoral neck BMD, weight, and age. As in the smaller study, low serum albumin was not associated with an increased risk of incident nonvertebral fractures in the larger population.

The findings of the second analysis "confirm the association between low baseline albumin levels and incident vertebral fractures," she said. ■

Analysis Debunks Age Bias in Bisphosphonate Therapy for Elderly

HARROGATE, ENGLAND — Age and frailty should not deter physicians from offering very elderly osteoporotic patients antiresorptive therapy, despite age-associated increases in comorbid conditions, said Steven Boonen, M.D.

The results of a pooled analysis from three randomized, double-blind controlled trials showed a significantly reduced risk of new vertebral fractures among 704 osteoporotic women aged 80 and older who received bisphosphonate

therapy, compared with age and disease-matched patients randomized to placebo treatment, Dr. Boonen reported in a presentation at the annual conference of the National Osteoporosis Society.

"To the best of our knowledge, this study is the first to document a benefit of antiresorptive treatment in addition to that afforded by calcium and vitamin D in a population of women aged 80 and older with osteoporosis," said Dr. Boonen of Leuven (Belgium) University Center for Metabolic Bone Disease, the study's principal investigator. "The findings tell us that, even in the very old, reducing bone resorption rates remains an effective treatment strategy."

The studies each looked at 3-year fracture end points and included women aged 80-100 years with documented osteoporosis. In each study, the women randomized to bisphosphonate therapy were prescribed 5 mg/day of risedronate (Actonel) for up to 3 years, and control group patients were given a placebo pill for the same duration. Participants received 1,000 mg calcium supplementation per day and, if baseline levels were low, up to 500 U of vitamin D per day.

At 1 year, the risedronate groups had a new vertebral fracture rate of 2.5%, compared with 10.9% for the control groups. At 3 years, the new vertebral fracture rates for the bisphosphonate and placebo groups were 18.2% and 24.6%, respectively, "representing a 44% reduction in risk for the women who took risedronate," Dr. Boonen said.

The rates of nonvertebral

fractures were not significantly different between the two groups. At 3 years, the risedronate patients had a 14% risk, compared with the placebo group's 16.2% risk. The studies also showed risedronate to have a safety profile similar to that of placebo.

The early efficacy of the risedronate therapy was consistent across the three trials, Dr. Boonen said. The treatment was well tolerated, even among the oldest women in the study population,

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"despite the fact that evaluation of baseline characteristics showed these patients to have a higher prevalence of gastrointestinal diseases than younger patients."

The findings are of particular relevance, considering the aging of the population. "Epidemiological data

suggest that half or more of women aged 80 and older have vertebral fractures," he said.

"Our findings suggest that adding [bisphosphonate] treatment to calcium and vitamin D could significantly decrease the incidence of vertebral fractures in elderly women with osteoporosis. The hope is that these data will help increase the number of 'very old' patients with osteoporotic fractures who are deemed eligible for and receive treatment. "Despite the debilitating effects of osteoporotic fractures and the availability of therapies to reduce fracture recurrence, only a small percentage of women with osteoporotic fractures receive treatment, and this percentage decreases with age," Dr. Boonen said. "Clinicians may presume that it is too late to alter the course of disease in its late stage, but these results tell us that is not so."

Because each of the antiresorptive therapies used to treat osteoporosis has unique characteristics and side-effect profiles, the observations cannot be generalized to include other bisphosphonates, he cautioned.

Dr. Boonen said he has received research grants from Procter & Gamble Pharmaceuticals but has no other financial relationship with it or any other company that markets bisphosphonates. ■