

Low Bone Mass Frequently Gets Overtreated

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NEW YORK — Overtreatment for low bone mass has been all too common in women aged 50-60 years since the introduction of the bisphosphonate drugs and the widespread use of bone scans, according to Dr. Stephen Honig.

Routine bone scanning at menopause—very common in this country—creates difficulties in treatment decisions for providers, because when low bone density is uncovered in the early postmenopausal years it generally is in the range of osteopenia, not osteoporosis.

"A common scenario has been a 50-year-old woman who has her last period, goes for a bone scan, and has a spinal T score of -2.2 . She's given a prescription for Fosamax, and 10 years later she's still on the drug," Dr. Honig commented at a rheumatology meeting that was spon-

sored by New York University.

It is important to recognize that for women in the early years after menopause, a bone mineral density measurement does not provide enough information to make appropriate treatment decisions.

What is needed is an understanding of an individual woman's risk of fracture in the short and intermediate term, balanced against the consequences of adverse events and the possibility of subtrochanteric fractures associated with excessive suppression of bone turnover.

"We want to avoid overtreatment—too much drug, too soon, for too long—and of course we also want to avoid undertreatment," he said, adding that many women in their 60s and most women in their 70s can benefit from bone-strengthening therapy.

"For women in their 50s, however, what we really need to know is who is at risk for fracture, not just who has osteopenia," said Dr. Honig of New York University, New York.

Fractures in women of this age are not simply a result of bone loss. Fractures occur when mechanical forces overcome the bone's capacity for resistance. This bone strength is dependent on structural and material properties of the bone, including size, shape, trabecular architecture, and mineral-to-matrix ratio.

Clearly, other factors also contribute. In the National Osteoporosis Risk Assessment (NORA), which included 200,160 women aged 50 years and older, factors significantly associated with fractures included low bone mineral density, poor health status, personal or family history of fracture, maternal history of osteoporosis, no current hormone replacement therapy, menopause before age 40, corticosteroid use, and current smoking.

Analysis of the NORA data also found

that the most important determinants of 3-year fracture risk in women aged 50-64 years were prior fracture, T score at or below -1.1 , and self-reported fair/poor health status, with fracture risks of 7.2%, 3.1%, and 2.4%, respectively (Osteoporos. Int. 2007;18:1287-96).

A further difference in fracture risk between women in the early postmenopausal years and those who are older is that the fracture of primary concern is not the hip, but the wrist/forearm. In the Danish Osteoporosis Prevention Study, 872 women whose mean age was 51 years were followed for 10 years. During that time, 80 fractures occurred in 78 women—64 in the forearm, 8 in the spine, 7 in the proximal humerus, and only 1 in the hip (J. Bone Miner. Res. 2006;21:796-800).

Studies have shown that at menopause, the rate of falls among women begins to increase dramatically.

In a study from the United Kingdom that analyzed 90,061 accidents, 38,737 were classified as "underfoot" (events such as slipping or tripping). Among women overall, 51% of accidents were underfoot, as were 32% of accidents in men, but after the age of 50 these numbers increased to 64% in women and 43% in men (Q. J. Med. 2001;94:699-707).

It turns out estrogen has a critical role in postural stability, Dr. Honig said. Declining estradiol levels are associated with decreasing ability to maintain balance, slower reaction and movement times, and lower muscle strength—all of which contribute to falling and injury.

"Most clinicians never give a second thought to the issue of balance in a 50-year-old woman," Dr. Honig said.

Having a fall-related fracture also is a risk factor for an additional fracture. Longer-term follow-up of the NORA co-

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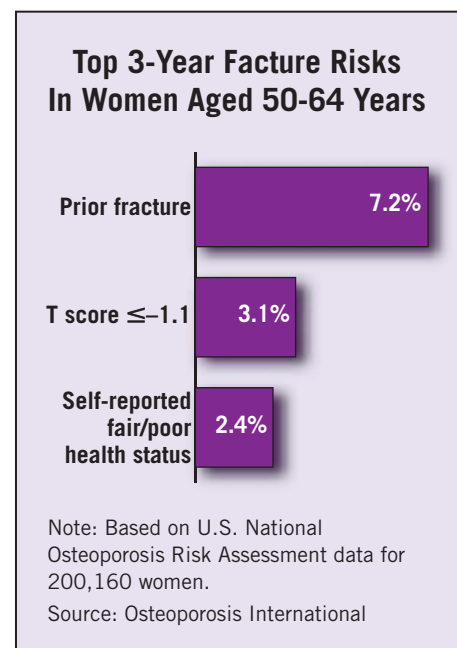
Subtrochanteric fractures can occur when bone turnover is overly suppressed.

hort found that over 3 years, a prior wrist fracture increased the risk of a future wrist fracture about threefold and doubled the risk of any osteoporotic fracture (Osteoporos. Int. 2008;19:607-13).

In conclusion, healthy young postmenopausal women who have a low bone mass and no recent fracture history have a low 1- to 3-year risk of fracturing, Dr. Honig said.

For these patients, according to new 2008 guidelines from the National Osteoporosis Foundation, treatment should be initiated only if their 10-year hip fracture probability is 3% or greater or their 10-year all-fracture probability is 20% or greater, based on the U.S.-adapted World Health Organization absolute fracture risk model.

To view the guidelines, which are available on the Web site of the NOF, go to www.nof.org. In addition, a tool for calculating 10-year risk can be found at www.shef.ac.uk/FRAX. Dr. Honig serves on the speakers bureau of Novartis Pharmaceuticals Corp. ■



CLINICAL CAPSULES

Lower Exercise Intensity in Obese Boys

Obese adolescent boys have a limited capacity to metabolize fat by exercising at the recommended moderate intensity level, and might do better with lower-intensity activity, according to Dr. Gautier Zunquin, a sports medicine researcher at the University of the Littoral Opal Coast, Dunkirk, France, and associates.

To date, no studies have compared the rate of fat oxidation during exercise in obese children with rates in lean children using the same protocol. Dr. Zunquin and associates did so because they suspected current exercise guidelines should be altered for obese adolescents (Br. J. Sports Med. 2008 April 1 [doi:10.1136/bjism.2007.044529]).

They calculated the fat oxidation rate in 13 lean and 17 obese 12-year-old boys, which allowed them "to construct a curve of fat oxidation vs. exercise intensity for each individual." The maximal fat oxidation rate occurred at a lower level of exercise in the obese boys than in the lean boys. The lean boys metabolized the most fat exercising at 50%-60% of peak oxygen consumption, whereas the obese boys metabolized the most fat exercising at 30%-

50% of peak oxygen consumption.

"Muscular modifications induced by obesity and being sedentary may partially explain the differences in fuel oxidation mechanisms," wrote the authors. Differences between the two groups in hormonal changes during exercise, fatty-acid mobilization, and activation of α_2 -adren-ergic receptors might also play a role.

"Exercise intensity should be adapted to [children's] metabolic capacities during weight management programs," they said.

Breast-Feeding and Type 2 Diabetes

Breast-fed babies may be protected against developing type 2 diabetes during childhood regardless of ethnicity, according to results from a study adjunct to the ongoing SEARCH for Diabetes in Youth investigation, by Elizabeth J. Mayer-Davis, Ph.D., of the University of South Carolina, Columbia, and her colleagues.

Their case-control study, conducted at two of the SEARCH study sites, included 80 participants aged 10-21 years with type 2 diabetes and 167 age-matched controls (Diabetes Care 2008;31:470-5).

Overall, the prevalence of breast-feeding

for any length of time was significantly lower in youth with type 2 diabetes, compared with controls (31% vs. 64%).

Breast-feeding was also significantly associated with lower body mass index z scores in the controls and with lower (but not significantly lower) BMI z scores in the youth with type 2 diabetes. The average duration of breast-feeding was significantly longer in the controls.

When participants were divided into three ethnic groups, prevalence of breast-feeding was lower in black youth with type 2 diabetes than in controls (20% vs. 27%), but this difference was not statistically significant. The difference remained significant in Hispanics (50% vs. 84%) and in non-Hispanic whites (39% vs. 78%).

The researchers noted previous evidence that a lower prevalence of breast-feeding in blacks, compared with other ethnicities, might be a confounding variable, but they said that the overall presence of a protective effect of breast-feeding against type 2 diabetes suggests that all populations might benefit it.

Vitamin D Cuts Risk of Type 1 Diabetes

Children receiving vitamin D supplementation are significantly less likely to develop

type 1 diabetes, according to an analysis of observational studies led by Dr. Christos Zepitis of St. Mary's Hospital for Women and Children, Manchester, England.

In four case-control studies of 6,684 subjects in several European countries, children who received vitamin D supplementation in early childhood had a significantly reduced risk of developing type 1 diabetes in later life, compared with those who received no supplementation (pooled odds ratio 0.71), said the researchers (Arch. Dis. Child. 2008 March 13 [Epub doi: 10.1136/adc.2007.128579]).

A cohort study also found significantly reduced risk for regular supplementation and irregular supplementation, when compared with no supplementation.

The authors found five studies that were relevant and fit their inclusion criteria, none of which was a randomized controlled trial. Because the case-control studies were retrospective and did not attempt to objectively confirm whether either cases or controls took vitamin D, nor how much of the vitamin they took, nor how much exposure to the sun they received, the findings could have been biased, they noted.

—From staff reports