

Long-Term Steroids Double Bone Mass Risk

BY KERRI WACHTER

DENVER — Patients with rheumatic diseases who were on long-term glucocorticoid therapy were almost twice as likely to have low bone mass as were those with who were not on glucocorticoids, results of a study of more than 200,000 patients have shown.

The findings were presented as a poster at the annual meeting of the American Society for Bone and Mineral Research by Dr. Viviana A. Reidel and her coinvestigators.

The researchers used UnitedHealth Group Inc.'s proprietary normative health information database of medical claims—both private and Medicare/Medicaid. In 2007, the database included information on 23.6 million people.

Dr. Reidel and her colleagues identified those who had had at least two visits resulting in an ICD-9-CM code for a rheumatic disease and an ICD-9-CM code for either osteoporosis or osteopenia occurring after the first prescription of a glucocorticoid.

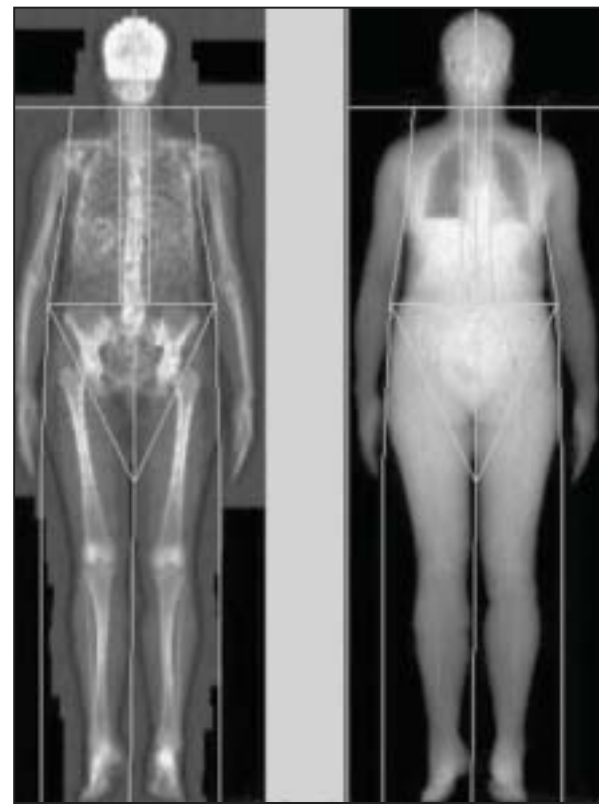
Long-term glucocorticoid use was defined as one or more monthly prescriptions for at least 6 months. High-dose glucocorticoids were defined as a prednisone dosage of at least 7.5 mg/day, or the equivalent; low-dose use was a prednisone dosage of less than 7.5 mg/day, or the equivalent. The nonglucocorticoid group included patients with rheumatic diseases who were prescribed any other therapy or no therapy.

In all, 201,121 patients with rheumatic diseases were identified. The most common disease was rheumatoid arthritis (57%), followed by systemic lupus erythematosus, spondyloarthropathies, polymyalgia rheumatica, vasculitis, and enteropathic arthritis. Among those with long-term glucocorticoid use, 44% of women and 11% of men had low bone mineral density. Among those non-long-term users, 31% of women and 4% of men had low BMD.

Patients with rheumatic diseases who were on long-term glucocorticoids had a relative risk of 1.7 of having low bone mass, compared with those who were not on glucocorticoids. "However, our analysis suggests that the effect of long-term higher-dose glucocorticoid treatment on increasing risk of glucocorticoid-induced low bone mass compared to long-term lower-dose glucocorticoid treatment is weak," wrote Dr. Reidel, medical director at i3 Research, a clinical research company. There was a slight but significantly increased risk of low bone mass in patients who were treated long term with high-dose glucocorticoids, compared with those treated long term with low doses.

The researchers also found that only 0.2% of patients with long-term glucocorticoid use had at least one dual-energy x-ray absorptiometry scan, compared with 8% of those with no known glucocorticoid exposure.

There are plans to look at any associations between long-term glucocorticoid use and BMD by rheumatic disease, Dr. Reidel said in an interview. ■



A whole-body dual-energy x-ray absorptiometry scan can provide information on total and regional BMD (left) and body composition (fat, muscle mass). ■

Pregnancy and Breastfeeding May Impact Osteoporosis Risk

BY DOUG BRUNK

SAN DIEGO — The combination of breastfeeding and delaying pregnancy until the majority of bone mass has been acquired appears to have a protective effect on bones, according to study involving more than 600 women.

"Several studies have shown that people who have had many pregnancies have less bone loss than women with no pregnancies," lead author Dr. Peter F. Schnatz said in an interview.

"Our study is the first to our knowledge looking at the effect of pregnancy during the time of peak bone mineral acquisition and its eventual and ultimate effect on the development of postmenopausal osteoporosis," he said at a poster session at the annual meeting of the North American Menopause Society.

Dr. Schnatz, of the department of obstetrics and gynecology at Reading (Pa.) Hospital and Medical Center, and his associates analyzed data from 619 women aged older than 49 years who presented for bone density scanning in the Hartford, Conn., area. They assessed risk factors for osteoporosis, including a previous atraumatic fracture of the hip or spine, pregnancy information, and dual-energy x-ray absorptiometry results. Mean age of the study participants was 62 years; 50% were either current or past smokers.

Women who had breastfed had a significantly lower prevalence of osteoporosis (8%) than did those who did not breastfeed (19%), a finding that surprised

the researchers. "It would seem that breastfeeding, which requires acquisition of calcium from the mother to nourish the baby, would cause bone loss," Dr. Schnatz said. "We wonder if there may be a rebound anabolic phenomenon, hence resulting in overall benefit."

Among those who had breastfed, women aged younger than 27 years at the first pregnancy had a significantly higher prevalence of osteoporosis than did those who were 27 and older at first pregnancy (11% vs. 5%, respectively).

Of those who were at least 27 years old at first pregnancy, there was a significantly increased prevalence of osteoporosis in those who did not breastfeed, compared with those who did (25% vs. 5%, respectively).

Women who were at least 27 years old at their first pregnancy and who breastfed had a statistically lower prevalence of osteoporosis, compared with their counterparts who had their first pregnancy younger than age 27 and no history of breastfeeding (5% vs. 16%, respectively).

Among women who did not breastfeed, there was little difference in the risk of postmenopausal osteoporosis if the first pregnancy occurred at or after age 22 or 27 years, Dr. Schnatz wrote.

"Women should be encouraged to wait until the postadolescent years for childbearing and should be encouraged to breastfeed," he concluded.

The study was supported by a grant from the Alliance for Better Bone Health. Dr. Schnatz and his associates had no other financial conflicts to disclose. ■

FRAX 10-Year Predictions Match Fracture Incidence

BY KERRI WACHTER

DENVER — The FRAX 10-year fracture risk tool was fairly accurate in predicting the observed number of hip fractures that occurred among more than 5,000 participants of the Framingham Heart Study, according to data presented as a poster at the annual meeting of the American Society for Bone and Mineral Research.

The 10-year observed incidence of hip fracture for women was 117 cases, which did not differ significantly from the FRAX predicted number of 113. For men, the observed incidence was 29 cases, not significantly different from the FRAX prediction of 38, reported Elizabeth J. Samelson, Ph.D., of the Institute for Aging Research in Boston, and her coinvestigators.

FRAX, developed by the World Health Organization, is an online tool to calculate the 10-year probability of hip fracture and major osteoporotic fracture in women and men aged 40-90 years, on the basis of bone mineral density (BMD), gender, age, smoking status, glucocorticoid use, height and weight, diagnosis of rheumatoid arthritis or secondary osteoporosis, history of fracture, and parental history of fracture.

This study included 5,204 Framingham cohort members (2,917 women and 2,287 men) who had a baseline examination between 1987 and 2001 and were followed for hip fracture over 10 years. All were white.

At baseline, patients were assessed

for age, body mass index, current smoking status, alcohol consumption, glucocorticoid use, diagnosis of rheumatoid arthritis, prior fragility fracture, parental history of fracture, and T score. Original cohort members (1,456) for whom no parental hip fracture history was available were classified as having no such history. Femoral neck BMD was available for 4,224 participants.

The researchers used FRAX version 3.0 to calculate the 10-year probability of hip fracture and compared the expected number with that observed in the cohort.

Among women aged 40-75 years, the incidence was 52 cases, compared with 57 expected by FRAX; among men aged 40-75 years, the incidence was 12 cases, compared with 23 expected by FRAX.

The observed probability of hip fracture in the oldest adults (aged 76-90 years) exceeded the number predicted by FRAX, while the opposite was true for those aged 40-75. Among women aged 76-90 years, the incidence was 65 cases, compared with 55 expected by FRAX; among men aged 76-90 years, the incidence was 17 cases, compared with 14 expected by FRAX.

The study was supported by the National Institutes of Health. The researchers said they had no relevant financial relationships. ■

A video about the use of the FRAX tool is at www.youtube.com/clinicalendonews.