

# Concomitant Medication: A Burden in Osteoporosis

ARTICLES BY  
DOUG BRUNK  
San Diego Bureau

SAN DIEGO — About half of postmenopausal women who take bisphosphonates for osteoporosis take at least three concomitant medications and 15% take six or more, researchers led by Dr. Sydney Lou Bonnicks reported during a poster session at the annual meeting of the International Society for Clinical Densitometry.

"Patients receiving bisphosphonate therapy for postmenopausal osteoporosis have a substantial pill burden," the researchers wrote in their poster. "Adherence to therapy may be improved if physicians consider prescribing more convenient, less frequently dosed medications."

Dr. Bonnicks, medical director of the Clinical Research Center of North Texas in Denton, and her associates obtained patient prescription information from November 1999 to June 2004 from NDCHealth, a database that contains records from 14,000 retail pharmacies in the United States.

They identified women aged 50 years and older who were receiving alendronate or risedronate, which were the bisphosphonates approved for osteoporosis treatment during the study period.

Concomitant medications were defined as a minimum of a 2-week supply of medications that are prescribed in the same month as are a minimum of a 2-week supply of bisphosphonates.

Between November 1999 and June 2004 the number of women in the database using bisphosphonates rose from 78,909 to 250,286. Of the women prescribed concomitant medications, 74% were on two or more additional medications, 52% were on three or more, and 15% were on six or more.

The percentage of women taking six or more concomitant medications increased from 12% to 19% during the study period.

The most common concomitant drugs taken were cholesterol reducers, synthetic thyroid hormones, calcium channel blockers,  $\beta$ -blockers, ACE inhibitors, and systemic antiarthritis medications.

Dr. Bonnicks and her associates observed that by the end of the study, women on daily bisphosphonate therapy were on a higher mean number of concomitant medications, compared with those on weekly bisphosphonate therapy (4.16 vs. 3.77, respectively). In addition, women aged 75 years and older were on a higher mean number of concomitant medications, compared with those aged 50-64 years (3.97 vs. 3.09, respectively).

GlaxoSmithKline supported the study. ■

# Scanning Both Forearms Found 10% More Osteoporosis Cases

SAN DIEGO — Scanning just the dominant forearm of patients with a history of nondominant wrist fracture can miss cases of osteoporosis.

More cases of osteoporosis were diagnosed when both forearms were scanned with dual-energy x-ray absorptiometry (DXA) than when the dominant side alone was scanned, Pam Johnson reported during a poster session at the annual meeting of the International Society for Clinical Densitometry.

"We're missing 10%-15% of cases by doing [a scan of] just the dominant forearm, which is the rule" in these cases, Ms. Johnson, a certified radiologic technologist with the St. Paul, Minn.-based HealthEast Osteoporosis Care Clinic, said in an interview. "That [rule] should be reevaluated."

In what she said is the first study of its kind, Ms. Johnson and her associates performed bilateral forearm DXA scans on 39 patients with a history of nondominant forearm fractures.

The mean one-third radius bone mineral density T score was  $-2.0$  on the dominant side and  $-2.2$  on the nondominant side. The nondominant radius DXA scan identified osteoporosis in 17 patients, 4 of whom

were osteopenic on the dominant side.

The dominant radius DXA scan identified osteoporosis in 16 patients, 3 of whom were not osteoporotic on the nondominant side.

In addition, the researchers found that one patient had a normal T score on the dominant side but had osteopenia on the fractured, nondominant side.

"The number of patients diagnosed with osteoporosis increased from 16 to 20 if we scanned both the dominant and nondominant forearm, compared with scanning just the dominant side alone in the situation of a nondominant wrist fracture," the researchers wrote in their poster. "Overall, 10% more patients were diagnosed with osteoporosis when both forearms were scanned."

A key limitation of the study is its small sample size. Another, they wrote, is the fact that "forearm fracture history was not adjudicated but taken from personal history and therefore the location of the fracture may not always be correct."

An estimated 250,000 wrist fractures occur each year in the United States. ■

## Expert Lists Pros and Cons Of Bone Turnover Markers

SAN DIEGO — A chief advantage of assessing bone turnover markers such as serum osteocalcin and urine hydroxyproline in osteoporosis patients is that they provide an integrated assessment of skeletal metabolism, Dr. Marc C. Hochberg reported at the annual meeting of the International Society for Clinical Densitometry.

Among other advantages of using these markers:

► They show rapid and large changes with therapy.

► Automated assays are widely available, and they are less expensive than dual-energy x-ray absorptiometry, although

more expensive than ultrasound.

► Elevated bone turnover is associated with fracture risk, independent of bone mineral density.

However, "as with everything, there are advantages and limitations" to bone turnover markers, said Dr. Hochberg, head of the division of rheumatology and clinical im-

munology at the University of Maryland, Baltimore.

For example, some bone markers reflect both bone formation and bone resorption.

Also, "most of the markers are present in tissues other than bone and may be influenced by nonskeletal processes," he said.

Further, changes in bone turnover markers are not dis-



**Most 'are present in tissues other than bone and may be influenced by nonskeletal processes.'**

DR. HOCHBERG

ease specific, and measurement of the markers varies.

Potential uses for bone turnover markers include the ability to predict the rate of future bone loss and the occurrence of osteoporotic fractures, to monitor the efficacy of treatment, to enhance adherence to therapy, to identify patients for treatment, and to allow selection of the optimal agent. ■

## Vitamin D Deficiency Being Missed in Nursing Home Residents, Study Finds

SAN DIEGO — Vitamin D deficiency is underdiagnosed in the nursing home population, according to results from a single-center pilot study.

"Vitamin D deficiency has a huge number of ramifications in terms of increasing fall risk and decreasing strength," Dr. Christine Simonelli said in an interview during a poster session at the annual meeting of the International Society for Clinical Densitometry. "It's also associated with osteoporosis. Nursing home residents are very often vitamin D deficient because the main source of vitamin D is sunlight."

She and her associates assessed the prevalence of low bone density and vitamin D deficiency in 49 Caucasian residents of a St. Paul-area nursing home. They reviewed the medical charts of all study participants, used a calcaneal ultrasound machine to measure their bone density, and obtained 25-hydroxyvitamin D levels by serum sample.

The mean age of the residents in the study was 85 years, and 38 were female, said Dr. Simonelli, director of osteoporosis services for HealthEast Care System, Woodbury, Minn. Sixteen residents (33%) were taking a multivitamin supplement that contained vitamin D, and 10 (20%) were taking an additional vitamin D supplement.

Serum vitamin D levels ranged from 6 to 74 ng/mL, with a mean of 22.4 ng/mL. In fact, 35 residents (71%) had levels below the recommended range of 30-32 ng/mL.

Residents taking a multivitamin supplement had a mean vitamin D level of 29 ng/mL.

The mean calcaneal T score was  $-2.5$ ; 45 (92%) had a score below  $-1.0$ , while 26 (53%) had a score below  $-2.5$ .

Nine residents (18%) had a diagnosis of osteoporosis in their medical records, and 6 of those residents (12%) were on bisphosphonate therapy.

In addition, 11 residents (22%) had a fall in the previous 30 days, while 35 (71%) had a fall in the previous 180 days.

After the researchers adjusted for age and sex, they found that vitamin D levels did not have a significant association with T-score category or fall rate.

"This pilot project was limited to one nursing home and had a small sample size," the researchers noted in the report. "Bone density study was limited to peripheral scan type and no confirmatory DXA was performed."

They also acknowledged that "inclusion of wheelchair-bound residents may have affected fall rate, vitamin D levels, and calcaneal ultrasound values." ■

