Exercise Boosts Mental Health in Osteoporosis

BY DIANA MAHONEY
New England Bureau

BOSTON — A program of regular, low-impact exercise can improve mood and executive functioning in older adults with osteoporosis, according to research in a poster presentation at the annual meeting of the Society of Behavioral Medicine.

Of 16 elderly residents with osteoporosis living independently in a multilevel health care facility, the 8 individuals randomized to an osteoporosis exercise intervention two to three times per week for 3 weeks experienced improvements in working memory and self-reported quality of life measures, compared with the 8 individuals assigned to the wait-list control condition, reported Dana B. Kazmerski and her colleagues.

The median age of participants in the study was 84. All of the participants underwent baseline and postintervention screening for cognitive function using the Repeatable Battery for the Assessment of Neuropsychological Status (RBANS) measure, and for depression and mood swings using the Beck Depression Inventory (BDI), the Geriatric Depression Scale (GDS), and the Wisconsin Quality of Life Index (W-QLI). There were no significant differences between the groups in the preintervention measures.

Postintervention, the exercise group showed significant improvements on the RBANS coding subtest, which measures information-processing speed, and on the quality of life depression and mood swing measures. Repeated ANOVA measures showed no significant impact on the results of potential covariates, including age, gender, and level of education.

The results of the study are consistent with those of investigations linking exercise to increased executive functioning and extend such findings to the current aging population with osteoporosis, noted Ms. Kazmerski who authored the study with Cay Anderson-Hanley, Ph.D., both of Union College in Schenectady, New York.

"Exercise has repeatedly been shown to be beneficial in improving the quality of living of individuals who suffer from late-onset diseases, such as Alzheimer's disease and dementia, but the potential cognitive benefits of exercise for people with osteoporosis—a leading health care concern—has received virtually no attention," said Ms. Kazmerski. "The improvements [we] found in mood and executive functioning suggest that an osteoporosis exercise program may not only provide protection against brittle, thin bones, but perhaps can also help improve quality of life in terms of less depression, greater stability of mood, and improved working memory."

The study is limited by its small size and possible self-selection participation bias, as well as its focus specifically on a low-impact osteoporosis exercise program, which may not be generalizable to other exercise regimens, Ms. Kazmerski noted.

In the future, the investigators hope to replicate the findings with a larger sample to examine long-term changes in exercise habits and to evaluate whether the observed cognitive and mood benefits are long lasting, Ms. Kazmerski concluded. ■

New SERM Has Positive Bone Findings

BY TIMOTHY F. KIRN
Sacramento Bureau

SAN ANTONIO — The next-generation selective estrogen receptor modulator, lasofoxifene, increased vertebral bone mineral density better than did raloxifene, according to the findings of a company-sponsored trial presented at the annual meeting of the American College of Rheumatology.

In the study, 410 postmenopausal women were randomly assigned to one of two doses of lasofoxifene, 0.25 mg or 1 mg daily; raloxifene at 60 mg daily; or a placebo. The half-life of lasofoxifene is about a week versus 28 hours for raloxifene, said Andy Lee, a director with Pfizer Global Research and Development, New London, Conn.

The lasofoxifene increased bone mineral density (BMD) at the lumbar spine by a mean of about 2% after 2 years of treatment. That compared with no mean improvement in spine BMD—but no density loss—in patients assigned to raloxifene, and a 2% density loss in the placebo group.

BMD at the total hip improved by a mean of 1% for patients taking either raloxifene or lasofoxifene; total hip BMD stayed the same in patients taking placebo.

Although responsiveness to lasofoxifene varied, overall more women responded to lasofoxifene than to raloxifene, Mr. Lee said. Spine density improved or was at least maintained in 90% and 93% of the patients in the low- and high-dose lasofoxifene groups, respectively. That compared with 77% of the patients who took raloxifene and 65% of the patients who took placebo.

Changes in bone turnover markers were also greater with lasofoxifene. *N*-telopeptide levels, for example, decreased by a mean 35% in the patients on lasofoxifene, versus 15% in the patients on raloxifene. And the new drug reduced LDL cholesterol levels by a mean of 20% versus 12% for raloxifene.

Future trials of lasofoxifene will use the 0.25-mg dose, Mr. Lee said.

Some women on lasofoxifene experienced hot flashes, leg cramps, and increased vaginal moisture, but overall the two drugs were tolerated similarly.

None of the lasofoxifene trials has shown an increase in endometrial hyperplasia or vaginal bleeding, Mr. Lee said. Likewise, there have been no reports of urogenital prolapse, a problem that has plagued earlier selective estrogen receptor modulators. ■

For the Best Bisphosphonate Therapy Results, Take the Drugs

BY HEIDI SPLETE
Senior Writer

WASHINGTON — Postmenopausal women with osteoporosis can reduce their risk for fractures by 26% if they stick to their bisphosphonate regimens, Ethel Siris, M.D., reported in a poster presented at an international symposium sponsored by the National Osteoporosis Foundation.

However, that "if" is a very big one, said Dr. Siris, director of the metabolic bone diseases program at Columbia University Medical Center, New York.

"We assume that there is a relationship between actually taking the drug and having a positive outcome, but it has not been previously demonstrated for bisphosphonate therapy," she said in her oral presentation.

In a retrospective study of 6,285 women, 48% were compliant in terms of refilling their prescriptions, and 21% were persistent in terms of staying on the medication beyond the 2-year follow-up.

Overall, the relative risk of fracture over a 2-year period was 26% lower among refill-compliant women, compared with noncompliant women (9.4% vs. 12.6%) and 21% lower among treatment persistent women compared with nonpersistent women (9.1% vs. 11.6%).

More than half (52%) of the women were noncompliant, based on insufficient refills, and approximately 21% were nonpersistent, defined as having a discontinuation of therapy within the 2-year period.

Data on the pharmaceutical claims of women aged 45 years and older who met the criteria for postmenopausal osteoporosis were taken from the Medstat MarketScan Research Database. The women had received at least one prescription for a bisphosphonate; 85% received alendronate (Fosamax) and 15% received risedronate (Actonel).

Bisphosphonates' effectiveness depends on compliance over an extended period of time. And compliance with bisphosphonate therapy is notoriously poor.

The currently approved daily dose must be taken while sitting or standing upright immediately after waking in the morning, and the patient must allow one hour before eating or drinking anything except water.

"If we actually get people to take these drugs, we might cut as many as 400,000 fractures in a given year," Dr. Siris said.

Studies on less frequent dosing regimens, such as the once-monthly regimen for the newly approved ibandronate (Boniva), suggest they are effective and may improve compliance.

Dr. Siris is a consultant for and has received honoraria from Eli Lilly & Co., Merck & Co., Sanofi Aventis, Procter and Gamble Pharmaceuticals, and Novartis. ■

BMD Measures Early in Menopause Predict 10-Year Osteoporosis Risk

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) in 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 scores 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 osteopenia," said Dr. Abrahamsen of Odense (Denmark) University Hospital.

At baseline, 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 spine or femoral neck T scores dipped below –2.5 within 10 years had spinal osteopenia at their initial visit, Dr. Abrahamsen said.

The findings support the role of BMD measurements in the first years after menopause, he said. "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. "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.

—Diana Mahoney