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Practice Guidelines

ACOG Releases Guidelines for Clinical Management of Osteoporosis

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The American College of Obstetricians and Gynecologists (ACOG) recently issued guidelines for the clinical management of osteoporosis in women, including recommendations for screening, prevention, and treatment of this condition. The guidelines appeared in the January 2004 issue of *Obstetrics and Gynecology*.

Approximately 13 to 18 percent of women in the United States who are at least 50 years old have osteoporosis and an additional 37 to 50 percent have osteopenia. Risk factors for osteoporotic fractures in this population include a family history of osteoporosis, previous fractures, white race, dementia, poor nutrition, cigarette smoking, alcoholism, low weight and body mass index, estrogen deficiency, early menopause (before 45 years of age) or prolonged premenopausal amenorrhea, long-term low calorie intake, impaired eyesight despite adequate correction, history of falls, and inadequate physical activity. Appropriate screening strategies and significant pharmacologic interventions are available to prevent and treat osteoporosis.

According to ACOG, the preferred method for diagnosing osteoporosis is bone mineral density testing. Dual-energy x-ray absorptiometry (DEXA) is the technical standard for measuring bone mineral density because it measures at important sites of osteoporotic fractures, has high precision and accuracy, is relatively inexpensive, and has modest radiation exposure.

Clinical Considerations and Recommendations

When should screening for osteoporosis be initiated? These guidelines recommend that testing of bone mineral density be performed based on the patient's risk factors and is not indicated unless the results will affect a treatment or regimen program. Specifically, testing for bone mineral density should be recommended for all women who are postmenopausal and at least 65 years of age. Bone mineral density testing may be recommended for women who are postmenopausal and younger than 65 years who have at least one risk factor for osteoporosis. Finally, bone mineral density testing should be performed on all women who are postmenopausal with fractures to confirm the diagnosis of osteoporosis and determine the severity of disease.

Bone mineral density testing may be of use in pre- and postmenopausal women with certain diseases or medical conditions (i.e., acquired immunodeficiency syndrome, human immunodeficiency virus, chronic

obstructive pulmonary disease, hyperparathyroidism, inflammatory bowel disease, rheumatoid arthritis) and those who take medications associated with an increased risk of osteoporosis. Screening should not be performed more often than every two years in women who do not develop new risk factors.

Under what circumstances are screening tests other than DEXA useful? Peripheral bone densitometry devices (including quantitative ultrasonography, single-energy x-ray absorptiometry, peripheral DEXA, and peripheral quantitative computed tomography) are less expensive, portable, have low radiation exposure, and have reasonable precision. The use of these devices is limited to the evaluation of bone loss of the peripheral skeleton, and cannot replace DEXA scans for diagnosing osteoporosis and osteopenia and predicting hip fractures.

Can lifestyle changes prevent osteoporosis and osteoporosis-related fractures? Studies have shown that exercise and increased muscle mass lead to the development of increased bone mass. Therefore, patients should participate in weight-bearing exercise, such as strength training or aerobic fitness. Any diseases or sensory impairments that can result in falling should be evaluated and treated. Medications (such as sedatives, narcotic analgesics, antihypertensives, and anticholinergics) should be avoided, if possible. The living and work environments should be assessed to remove safety hazards such as loose rugs and carpets, poor lighting, and obstacles. The risk of developing a fracture also may be reduced by cessation of cigarette smoking and reduction of alcohol intake.

Is there a role for estrogen and progestin in the prevention or treatment of osteoporosis? According to the authors, the risk of long-term use of estrogen or hormone therapy is small, but they recommend that it be administered for the shortest period at the lowest possible dose. They recommend that the use of hormone therapy for the prevention of osteoporosis or risk reduction of fractures be based on the patient's history and risk factors. Risk assessment and screening for a woman who has discontinued estrogen therapy should follow the same criteria as for a woman who is in the early stages of menopause.

Is other pharmacotherapy beneficial for the prevention and treatment of osteoporosis? Medications available for the prevention of osteoporosis include bisphosphonates (i.e., alendronate, risedronate) and selective estrogen-receptor modulators (i.e., raloxifene, tibolone, tamoxifen). Bisphosphonates inhibit osteoclast activity, which results in reduced bone resorption and bone loss. These agents increase bone mineral density at the spine and hip, and reduce fractures in women who have osteoporosis at all locations by 30 to 50 percent. Upper gastrointestinal side effects may prevent the use of bisphosphonates in patients who have gastroesophageal reflux disease and other esophageal abnormalities. Selective estrogen-receptor modulators were designed to have estrogen-like effects on skeletal bone density and to reduce fractures without stimulating endometrial or breast tissue. The U.S. Food and Drug Administration (FDA) has approved raloxifene and tibolone for the prevention of osteoporosis. Studies have demonstrated that raloxifene significantly reduces bone resorption, increases bone mineral density, and reduces vertebral fractures in postmenopausal women with osteoporosis. Tamoxifen has been shown to produce slight but statistically significant reductions in fracture risk. Side effects of tamoxifen include increasing venous thromboembolism, stimulating the endometrium, and increasing vasomotor symptoms.

Summary of ACOG Recommendations

The following recommendations are based on good and consistent scientific evidence (Level A):

- Treatment should be initiated to reduce fracture risk in postmenopausal women who have experienced a fragility or low-impact fracture.
- Treatment should be instituted in those post-menopausal women with bone mineral density T scores less than -2 by central DEXA in the absence of risk factors and in women with T scores less than -1.5 in the presence of one or more risk factors.
- First-line pharmacologic options determined by the FDA to be safe and effective for osteoporosis prevention (bisphosphonates [alendronate and risedronate], raloxifene, and estrogen) should be used.
- First-line pharmacologic options determined by the FDA to be safe and effective for osteoporosis treatment (bisphosphonates [alendronate and risedronate], raloxifene, calcitonin, and parathyroid hormone) should be used.

The following recommendations are based on limited or inconsistent scientific evidence (Level B):

- Women should be counseled about the following preventive measures:
 - Adequate calcium consumption, using dietary supplements if dietary sources are not adequate
 - Adequate vitamin D consumption (400 to 800 IU daily) and the natural sources of this nutrient
 - Regular weight-bearing and muscle-strengthening exercise to reduce falls and prevent fractures
 - Smoking cessation
 - Moderation of alcohol intake
 - Fall-prevention strategies
- Bone mineral density testing should be recommended to all postmenopausal women who are 65 years of age or older.
- Bone mineral density testing should be recommended for postmenopausal women younger than 65 years of age who have one or more risk factors for osteoporosis.
- Bone mineral density testing should be performed on all postmenopausal women who have fractures to confirm the diagnosis of osteoporosis and determine disease severity.
- In the absence of new risk factors, screening should not be performed more frequently than every two years.

The following recommendation is based primarily on consensus and expert opinion (Level C):

- Women should be counseled on the risk of osteoporosis and related fragility fractures. Such counseling should be part of the annual gynecologic examination.

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