ACOG Releases Practice Bulletin on Osteoporosis

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A collection of Practice Guidelines published in *AFP* is available at http://www.aafp.org/afp/practguide.

This practice bulletin from the American College of Obstetricians and Gynecologists (ACOG) reviews diagnosis, evaluation, and treatment options for women with osteoporosis.

Recommendations

Women should be counseled on the recommended daily dietary allowances for calcium and vitamin D from the Institute of Medicine, which are as follows:

- Persons nine to 18 years of age: 1,300 mg of calcium, 600 IU of vitamin D
- Persons 19 to 50 years of age: 1,000 mg of calcium, 600 IU of vitamin D
- Persons 51 to 70 years of age: 1,200 mg of calcium, 600 IU of vitamin D
- Persons 71 years and older: 1,200 mg of calcium, 800 IU of vitamin D

A serum vitamin D level of 20 ng per mL (50 nmol per L) is recommended for good bone health.

Dual energy x-ray absorptiometry (DEXA) should be performed in all women 65 years and older. It can also be performed in postmenopausal women younger than 65 years who are at risk of fracture, including those with a history of fragility fracture, who weigh less than 127 lb (58 kg), who take medications or have diseases that cause bone loss, who have a parental history of hip fracture, who smoke, who have alcoholism, or who have rheumatoid arthritis. DEXA every one or two years can be used to determine the effectiveness of treatment; however, it should not be performed more often than every two years if the patient has no new risk factors, or if bone mineral density has improved or has not changed significantly.

In women older than 65 years with low bone mass, as indicated by bone mineral density reports, the World Health Organization's Fracture Risk Assessment Tool (FRAX; available at http://www.shef.ac.uk/FRAX/index.aspx) should be used to establish if a woman is at increased risk of fracture. Treatment is recommended if she is at increased risk. Among those not at increased risk, screening should be performed every 15 years for women older than 65 years with a normal bone mineral density or a T-score of –1.5 or greater, every five years for women with a T-score of –1.5 to –1.99, and every year for women with a T-score of –2.0 to –2.49.

Treatment is recommended in women with a T-score of –2.5 or less. For women with a T-score between –1.0 and –2.5, FRAX can assist in making an informed decision about treatment. Pharmacologic treatment should be considered in women with a 10-year risk of major osteoporotic fracture of at least 20% or a risk of hip fracture of at least 3%. Treatment should also be considered in women who have had a low-trauma fracture, even if DEXA does not indicate osteoporosis.

Because nutrition and lifestyle (e.g., inactivity, smoking) affect bone health, these factors should be discussed with females of all ages. To reduce the risk of bone loss and osteoporotic fractures, women with osteoporosis or who are at risk of osteoporosis should be counseled about lifestyle changes (e.g., weight-bearing exercise, smoking cessation, reducing alcohol intake).

First-line therapy usually consists of bisphosphonates; selection should be based on patient preference. Raloxifene (Evista) can be a good initial treatment in younger postmenopausal women, and denosumab is an option for women with a high risk of fracture. Teriparatide (Forteo) is typically only used in women with severe osteoporosis or who have had fractures. Calcitonin has weaker data compared with other options; therefore, it should be used only in women with less serious osteoporosis who cannot tolerate other treatments. Typically, ▶

Table 1. Government-Approved Drugs for Prevention and Treatment of Postmenopausal Osteoporosis

Generic (brand)	*Dosage*	*Indication*	*Contraindications*
Bisphosphonates (oral unless otherwise specified)			
Alendronate (Fosamax)	5 mg per day or 35 mg per week, tablet or solution	Prevention	Abnormalities of the esophagus Inability to stand or sit upright for at least 30 minutes Hypersensitivity to any component of this product Hypocalcemia Patients at increased risk of aspiration should not receive alendronate solution
	10 mg per day or 70 mg per week, tablet or solution	Treatment	
Alendronate/cholecalciferol (Fosamax Plus D)	70 mg plus 2,800 IU per week; 70 mg plus 5,600 IU per week	Treatment	
Risedronate (Actonel)	5 mg per day; 35 mg per week; 75 mg in two consecutive days per month; 150 mg per month	Prevention and treatment	
Risedronate (Atelvia)	35 mg per week (delayed release)	Treatment	
Risedronate/calcium carbonate (Actonel with calcium)	35 mg per week (day 1) plus 1,250 mg calcium for no-risedronate days (days 2 through 7 of seven-day treatment cycle)	Prevention and treatment	
Ibandronate (Boniva)	150 mg per month; 2.5 mg per day	Prevention and treatment	
	3 mg IV every three months	Treatment	
Zoledronic acid (Reclast)	5 mg IV every two years	Prevention	Hypocalcemia Creatinine clearance < 35 mL per minute per 1.73 m^2 (0.58 mL per second per m^2) and acute renal impairment Hypersensitivity to zoledronic acid or any components of this product
	5 mg IV every year	Treatment	
Estrogen agonist/antagonist			
Raloxifene (Evista)	60 mg per day	Prevention and treatment	Venous thromboembolism Pregnancy, women who may become pregnant, and breastfeeding mothers
Calcitonin			
Calcitonin-salmon (Fortical)	200 IU per day, nasal spray	Treatment*	Allergy to calcitonin-salmon or synthetic calcitonin-salmon
Calcitonin-salmon (Miacalcin)	200 IU per day, nasal spray	Treatment*	
	100 IU SC or IM every other day	Treatment*	
Parathyroid hormone			
Teriparatide (recombinant human parathyroid hormone 1-34; Forteo)	20 mcg SC per day	Treatment (high fracture risk)	Hypersensitivity to teriparatide or to any of its excipients Reactions have included angioedema and anaphylaxis
RANK ligand inhibitor			
Denosumab (Prolia)	60 mg SC every six months	Treatment	Hypocalcemia

IM = intramuscularly; IV = intravenously; SC = subcutaneously.

**—In women more than five years past menopause.*

Adapted with permission from North American Menopause Society. Government-approved drugs for postmenopausal osteoporosis in the United States and Canada. November 2012. http://www.menopause.org/otcharts.pdf. Accessed December 6, 2012

combination therapy is not recommended. Whether there should be a limit to the duration of bisphosphonate therapy is unknown; however, there appears to be a trend toward interrupting therapy after five to 10 years. Hormone therapy (i.e., estrogen or combined estrogen/progestogen) positively affects bone health; it is approved for use in women with an increased risk of osteoporosis and fracture. Medications for preventing and treating postmenopausal osteoporosis are listed in *Tables 1 and 2*.

If a patient loses bone mineral density during treatment, the physician should first determine if the patient

Table 2. Government-Approved Estrogen and Estrogen/Progestin Drugs for Prevention of Postmenopausal Osteoporosis

Generic (brand)	*Contraindications*
Estrogen	Undiagnosed abnormal genital bleeding
Conjugated estrogens (Premarin)	Known, suspected, or history of breast cancer except in appropriately selected patients being treated for metastatic disease
Estropipate	Known or suspected estrogen-dependent neoplasia
Estradiol oral tablet (Estrace)	Active deep venous thrombosis, pulmonary embolism, or a history of these conditions
Estradiol weekly transdermal patch (Climara, Menostar)	Active or recent (within the past year) arterial thromboembolic disease (e.g., stroke, myocardial infarction)
Estradiol biweekly transdermal patch (Alora, Vivelle Dot)	Liver dysfunction or disease
Estrogen/progestin	Known thrombophilic disorders (e.g., protein C, protein S, antithrombin deficiency)
Conjugated estrogens/medroxyprogesterone acetate (continuous-cyclic; Premphase)	Known hypersensitivity to any of the ingredients in this product
Conjugated estrogens/medroxyprogesterone acetate (continuous-combined; Prempro)	Known or suspected pregnancy
Ethinyl estradiol/norethindrone acetate (Femhrt)	
Estradiol/norethindrone acetate (Activella)	
Estradiol/norgestimate (intermittent-combined; Prefest)	
Estradiol/levonorgestrel (continuous-combined; Climara Pro)	

**—Doses and formulations vary for estrogen and estrogen/progestin prescriptions. For a complete list, see http://journals.lww.com/greenjournal/Citation/2012/09000/Practice_Bulletin_No__129___Osteoporosis.41.aspx (subscription required).*

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is taking the medication correctly. The next appropriate step would be to assess the patient for secondary causes of osteoporosis, or to refer the patient to a specialist. The evaluation for secondary causes of osteoporosis includes two tiers of testing, with a complete blood count, metabolic profile, and 24-hour urine calcium, 25-hydroxyvitamin D, and thyroid-stimulating hormone measurement performed first, and a celiac panel and serum protein electrophoresis performed second.

LISA HAUK, Senior Associate Editor, *AFP* Online ■

Answers to This Issue's CME Quiz

Q1. D
Q2. A, B
Q3. C
Q4. A, B, D
Q5. A
Q6. B, D
Q7. A, B