

Primary Health Care Initiatives (PHCI) Project  
Contract No. 278-C-00-99-00059-00  
Abt. Associates Inc.

## **OSTEOPOROSIS**

### **LEARNING OBJECTIVES:**

- Identify risk factors for osteoporosis
- Describe signs and symptoms, and complications of osteoporosis
- Know how to prevent and manage osteoporosis
- Know when to refer your patient
- Counsel and educate your family

### **TEACHING STRATEGIES:**

- Large group discussion
- Small group discussion

### **MATERIALS NEEDED:**

- Whiteboard
- Flipchart and markers
- Overhead projector and transparencies

### **LEARNING POINTS:**

- Definition of Osteoporosis
  - “Bone mineral density substantially less than the norm for the patient’s age and gender”
  - Found in 30 – 40% of all adults over 60 years of age
- Risk factors for osteoporosis
  - Fair skin, small bone structure
  - Female – post menopausal
  - Late menarche and early menopause
  - Prolonged amenorrhea due to any cause, including multiple pregnancies
  - Chronic systemic disease (liver, renal, heart)
  - Arthritic syndromes
  - Hyperthyroidism or parathyroid disorders
  - Medications such as anticonvulsants, antacids, corticosteroids
  - Smoking, stress
  - Lack of regular exercise
  - Lack of vitamin D or calcium in diet
- Osteoporosis signs and symptoms, and complications
  - Often very few initial signs or symptoms of early or even severe osteoporosis
  - Most commonly, first symptom is a fracture
  - Most common fractures – hip, forearm, thoracic or lumbar vertebrae – usually after a minor fall

- Decreased independence and need for care is major complication of osteoporotic fractures in the elderly
- Tests for osteoporosis
  - Most definitive test is bone densitometry – requires special machine, but best for long-term follow-up of therapy
  - Osteoporosis can be suspected on simple X-rays of spine or extremities – diminished bone density and old fractures clearly seen
- Prevention of Osteoporosis
  - Prevention of most effective way of dealing with osteoporosis, since it is a slowly progressive, potentially reversible process of aging
  - Initial measures to recommend in all older adults:
    - Regular physical exercise – walking or swimming daily
    - Stop smoking
    - Take calcium 1 gm daily and Vitamin D 600 – 800 IU daily
    - If under treatment for hypertension, consider using a diuretic (to conserve calcium as well as lower blood pressure)
  - In menopausal or post-menopausal women without significant contraindications, consider hormone replacement therapy (as discussed in Menopause section)
- Treatment of established osteoporosis
  - Hormone replacement therapy can restore to a small extent lost bone density
  - In severe cases (especially with history of fractures) may need to add a medication
    - Bisphosphonate such as Alendronate 10 mg. daily
      - Must be taken with large glass of water in upright position – stay upright for at least 30 minutes after taking medication
      - Major potential side effect of Alendronate is esophageal irritation and ulceration – minimized with above precaution
      - Use of bisphosphonate such as Alendronate can increase bone mineral density as much as 5 – 10% more than hormone replacement therapy
    - Calcitonin is another medication (from the parathyroid gland) that helps deposit new calcium in bone
      - Disadvantage is it requires injection or nasal inhalation
      - Used only in severe cases of osteoporosis, or in case of intolerance of bisphosphonates

### **PATIENT EDUCATION MESSAGES**

- Osteoporosis is a silent part of aging, but the cause of significant disability
- Fractures of osteoporosis can be decreased with simple changes in life style and medication
- All women with risk factors for osteoporosis should consider beginning hormone replacement therapy if no contraindications exist
- All men and women with risk factors for osteoporosis should consider taking calcium and Vitamin D supplements regularly.

### **CRITICAL ELEMENTS FOR REFERRAL**

- Significant fracture in the elderly
- Multiple risk factors for osteoporosis that may require bone density measurement and bisphosphonate therapy