Osteoporosis Application 1

Integrated Team-Based Learning (iTBL)

# Application Exercise:

You are a Clinical Pharmacist at an Internal Medicine clinic, and a 70-year-old postmenopausal woman presents for follow-up after central DXA measurement. Her physician requests your help to evaluate and manage the patient’s case. The following data and DXA result are available in the patient’s medical record:

Age: 70 years Calcium: 8.0 mg/dL

Race/ethnicity: Asian American 25-(OH) D3: 33 ng/dL

Height: 63 inches

DXA results: (GE-Lunar)

* Femoral neck: 0.635 g/cm2
* Total hip: 0.711 g/cm2

Weight: 126 lbs

Smoking: Previous; 15 pack year history

Alcohol: 5 drinks/week

Other: No source of secondary osteoporosis, no PMHx for rheumatoid arthritis, and the patient is not taking chronic glucocorticoids. Patient has Medicare, and her Part D coverage plan is somewhat limited with high co-pays for Tier 2 and 3 medications.

In addition to reviewing the patient’s medical record, you conduct a brief patient interview in the exam room. She denies experiencing a previous fracture and mentions that she is somewhat fearful of falling. You inquire about her normal diet and note a regular intake of the following foods/beverages: 2 slices of white bread, 1 serving of cheddar cheese, 1 regular-sized orange, 1 cup of cooked broccoli.

1. Based on the patient data and using the FRAX® tool, what is your assessment of her BMD?
   1. Normal
   2. Osteopenia
   3. Osteoporosis
   4. Severe Osteoporosis
   5. Unable to determine because the classifications cannot be applied to this patient
2. What do you recommend for treatment at this time?
   1. Pharmacologic treatment not indicated
   2. Start Actonel® 150 mg monthly
   3. Start alendronate 35 mg weekly
   4. Start alendronate 70 mg weekly
   5. Start calcitonin nasal 1 spray (200 units/spray) daily
   6. Start Reclast® 5 mg IV yearly
   7. Start teriparatide 20 mcg SC daily

*(continued)*

1. With regard to calcium and vitamin D, what would you recommend for this patient?
   1. Add 600 mg/day of calcium supplements and vitamin D 400 IU/day
   2. Add 1,000 mg/day of calcium supplements and vitamin D 1,000 IU/day
   3. Increase dietary calcium to 1,000 mg/day; add vitamin D 400 IU/day
   4. Increase dietary calcium to 1,200 mg/day; add vitamin D 1,000 IU/day
   5. No additional calcium and vitamin D required
   6. We don’t like any of these options; we recommend:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Which of the following statements is/are likely true for this woman? (Select ALL that apply)
3. Calcitonin levels are elevated.
4. Her daughter is at higher than normal risk for developing osteoporosis.
5. Her Haversian systems are narrowed, leading to reduced bone strength.
6. Inflammation has led to increased osteoblast AND osteoclast activity.
7. She is at increased risk for skull fracture.
8. There is an increase in the digestion of bone matrix.
9. There is increased release of PTH.

*Each Team Member Sign Below*

Team Member\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Team Member\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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