

Pharmacist Questions

1. Joyce, a 62-year-old female, takes lisinopril, ranitidine, phenytoin, and simvastatin. Which of these medications may place her at an increased risk for osteoporosis?
 - a. Simvastatin
 - b. Ranitidine
 - c. Lisinopril
 - d. Phenytoin
2. Which of the following guidelines would you consult with for more information about osteoporosis in males?
 - a. American Association of Clinical Endocrinologists and American College of Endocrinology
 - b. American College of Rheumatology
 - c. The Endocrine Society
 - d. U.S. Preventive Service Task Force
3. Jane, a 70-year-old female, is told by her primary care provider that the result of her DXA scan reveals osteoporosis. Which of the following T-scores is classified as osteoporosis?
 - a. -1.0
 - b. -1.5
 - c. -2.2
 - d. -2.8
4. A 55-year-old woman's DXA scan reveals T-scores of -1.5 and -2.0 at the spine and total hip, respectively. Her FRAX indicates a 4% 10-year probability of a hip fracture and an 18% 10-year probability of a major osteoporotic fracture. Using the AACE/ACE guidelines, which of the following statements is true?
 - a. She is not a candidate for osteoporosis treatment.
 - b. She is a candidate for osteoporosis treatment based on her T-scores alone.
 - c. She is a candidate for osteoporosis treatment based on her T-score at the hip and her 10-year probability of a hip fracture.
 - d. She is a candidate for osteoporosis treatment based on her T-score at the spine and 10-year probability of a major osteoporotic fracture.
5. James is a 72 year-old male who comes to you, the pharmacist, to ask about the recommended daily consumption of calcium and vitamin D. Per the NOF, you reply with which of the following?
 - a. 1000 mg calcium and 400 IU vitamin D
 - b. 1000 mg calcium and 1000 IU vitamin D
 - c. 1200 mg calcium and 600 IU vitamin D
 - d. 1200 mg calcium and 1000 IU vitamin D

6. A patient presents to your pharmacy consultation area and asks for more information about the difference between calcium carbonate and calcium citrate supplements. Which of the following statements is the best response?
 - a. The only difference between the 2 is the cost.
 - b. Calcium citrate can be taken with or without food, whereas, calcium carbonate should be taken with food.
 - c. Calcium citrate interacts with other medications; whereas, calcium carbonate does not.
 - d. Calcium carbonate contains a lesser percentage of elemental calcium compared to calcium citrate.

7. A patient presents to your pharmacy consultation areas and asks for more information on the risk of calcium supplementation and cardiovascular risk. Which of the following is the best response?
 - a. Evidence indicates that calcium supplementation, with or without vitamin D supplementation, increases cardiovascular risk in generally healthy adults.
 - b. Evidence is inconclusive, as some results indicate increased cardiovascular risk with calcium supplementation, regardless of vitamin D supplementation; while, other results indicate no increased cardiovascular risk with calcium supplementation, regardless of vitamin D supplementation.
 - c. Results of a recent meta-analysis indicate that calcium supplementation within the daily recommended quantity is not associated with CV risk in generally healthy adults.
 - d. Further investigation is needed to best answer your question.

8. Which of the following medication(s) decrease(s) bone mineral density and impact(s) fracture risk?
 - a. Anastrozole
 - b. Medroxyprogesterone acetate depot
 - c. Zidovudine
 - d. All of the above

9. CK is a 60 year-old Caucasian female with a past medical history of diabetes mellitus, chronic kidney disease, hypertension, and dyslipidemia. Her social history is significant for 30 minutes of exercise five days a week, no alcohol use, occasional tobacco use, and no illicit drug use. Her family history is significant for osteoporosis, diabetes mellitus, hypothyroidism, and hypertension. Which of the following is a modifiable risk factor for osteoporosis in CK?
 - a. Age
 - b. Ethnicity
 - c. Hypothyroidism
 - d. Tobacco use

10. Which is the most accurate statement regarding proton pump inhibitor's (PPI) risk for osteoporosis?
 - a. After stopping a PPI, there is no decrease in risk for osteoporosis.

- b. If using a PPI for ≥ 1 year, bisphosphonate therapy is warranted.
 - c. The risk for osteoporosis is dependent on duration and dose.
 - d. There is no risk for osteoporosis when using a PPI.
11. A postmenopausal woman with osteoporosis (suffered a compression fracture) and history of VTE has been taking alendronate 10mg daily for the last 5 years. Her doctor wants to switch alendronate to an alternative medication to maintain her bone mineral density. Which of the following is the best option?
- a. Estrogen
 - b. Denosumab
 - c. Ibandronate
 - d. Raloxifene
12. The doctor would like to start CA, a 60 year old female, on a bisphosphonate to prevent osteoporosis based on results of her DXA scan. She is currently taking calcium carbonate 600mg BID and vitamin D 400 units BID. Which option is best for CA to prevent vertebral fracture?
- a. Ibandronate 150mg PO monthly
 - b. Alendronate 70mg weekly
 - c. Zoledronic acid 5mg IV yearly
 - d. Risedronate 10mg daily
13. The need for adequate calcium and Vitamin D levels prior to initiating a bisphosphonate is most important for preventing which safety concern?
- a. Esophageal cancer
 - b. Atrial fibrillation
 - c. Osteonecrosis of the jaw
 - d. Acute-phase reaction
14. Which bisphosphonate should be taken with water right after breakfast?
- a. Alendronate daily
 - b. Alendronate weekly
 - c. Risedronate delayed release
 - d. Ibandronate
15. Which of the following treatment options is controversial due to benefit of fracture prevention being similar or less than the risk of heart disease, stroke, venothrombus embolism, and breast cancer?
- a. Estrogen replacement therapy
 - b. SERM
 - c. Parathyroid hormone analog
 - d. RANKL antagonist
16. Your patient is a postmenopausal female who has been taking a bisphosphonate for treatment of osteoporosis. She has a T-score of -2.6 and a history of compression fracture. After how many years would you recommend she take a “drug holiday”?

- a. After 3 years
 - b. After 5 years
 - c. After 10 years
 - d. After 15 years
17. For the above patient, when would you consider re-starting her bisphosphonate?
- a. After 1-2 years
 - b. After 3-4 years
 - c. After 5-6 years
 - d. Do not consider re-starting due to risks
18. Which of the following is only approved for prevention (rather than prevention and treatment) of osteoporosis?
- a. Ibandronate
 - b. Denosumab
 - c. Raloxifene
 - d. Estrogen
19. Denosumab decreases the incidence of which types of fractures in patients with osteoporosis?
- a. Vertebral
 - b. Non-vertebral
 - c. Hip fractures
 - d. All of the above
20. All bisphosphonates have evidence to support preventing vertebral fractures. Which ones also have proven efficacy for preventing non-vertebral and hip fractures?
- a. Alendronate, risedronate, and zoledronic acid
 - b. Alendronate and ibandronate
 - c. Alendronate only
 - d. Ibandronate only