POSTTEST ANSWERS – SESSION 5

Oncology Supportive Care

1. **Answer D:** *This patient should receive antiemesis prophylaxis because this oral chemotherapy agent is considered a moderate emetogenic regimen.*

   According to the most recent NCCN guidelines, prophylaxis with an antiemetic is recommended. Lorazepam would only be appropriate if the patient were experiencing anticipatory nausea/vomiting. Therefore, lorazepam would be inappropriate for this therapy. This is not considered a highly emetogenic regimen.

   **References:**

2. **Answer B:** *Zoledronic acid 3.5 mg intravenously over 15 minutes.*

   This patient continues to have bone pain, even though he is currently treated with an NSAID (nonsteroidal anti-inflammatory drug) and an opioid. Zoledronic acid may be used in patients with renal insufficiency, but it must be renally adjusted in patients whose CrCl is 60 mL/minute or less. This patient’s estimated CrCl is about 58 mL/minute; therefore, the appropriate dose according to the zoledronic acid package insert would be 3.5 mg. For a CrCl between 50 and 60 mL/minute, the recommended dose is 3.5 mg. For a CrCl between 40 and 49 mL/minute, the recommended dose is 3.3 mg. For a CrCl between 30 and 39 mL/minute, a dose of 3 mg is recommended.

   **References:**

3. **Answer C:** *Redraw the uric acid level because the handling technique may have resulted in a falsely low uric acid level.*

   According to the package insert, rasburicase causes enzymatic degradation of the uric acid in blood/plasma/serum samples, potentially resulting in spuriously low plasma uric acid assay readings. Blood must be collected in pre-chilled tubes containing heparin anticoagulant; immediately immerse plasma samples for uric acid measurement in an ice water bath. The patient has only received one dose of rasburicase; therefore, it is very unlikely that the patient’s uric acid level is already within normal limits. Hence, discontinuation is not appropriate. Decreasing the dose is not warranted in this situation.
situation. After evaluating the newly drawn uric acid level, rasburicase therapy should be assessed for continuation.

References:

4. Answer C: Decrease his dose of chemotherapy with the next cycle of treatment because CSFs with concurrent radiation therapy increase the risk of myelosuppression.

According to the NCCN guidelines for myeloid growth factors, CSFs are indicated in a patient in the curative setting to prevent further dose delays, the incidence of febrile neutropenia, and treatment delays. This patient, who has stage IV lung cancer, is being treated with palliative intent; therefore, maintaining the chemotherapy intensity and schedule is not as important as when treatment is of curative intent. In addition, the use of CSFs with concurrent radiation may worsen the myelosuppression. Colony-stimulating factors may be used whether the patient is febrile or afebrile at the time of the neutropenia episode. Prophylactic treatment with antibiotic drugs is not necessary and can increase the risk of resistant organisms.

References:

5. Answer C: Consider transfusing this patient with 2 units of packed red blood cells because she is symptomatic.

According to the most recent guidelines, this patient is no longer eligible to receive darbepoetin therapy because she is not currently on active chemotherapy. These agents are no longer indicated for “anemia of cancer.” Therefore, continuing therapy at 500 mcg every 3 weeks is not appropriate. In addition, administering this dose weekly would not be appropriate. Switching this patient to epoetin would not provide any additional benefit, nor would it meet the national guideline recommendations (epoetin not indicated in anemia of cancer, either). Transfusion is the best option in this patient because she is symptomatic.

References:
6. **Answer A:** The patient is experiencing an extravasation from doxorubicin. The nurse should initiate dexrazoxane for the treatment of this patient’s extravasation.

The patient is experiencing an extravasation from doxorubicin, not a hypersensitivity reaction. Applying heat is the recommendation for extravasations caused by vinca alkaloids (compared with ice for anthracyclines). Dexrazoxane was recently also approved for use as an antidote for the extravasation of anthracycline chemotherapy. Sodium thiosulfate should be administered for extravasations related to mechlorethamine, not doxorubicin.

**References:**

7. **Answer A:** Initiate atropine 0.4 mg intravenously before administering irinotecan and loperamide 2 mg by mouth every 2 hours until the patient is diarrhea free.

Irinotecan may cause severe diarrhea; therefore, prophylaxis is important. Initiating atropine before administering irinotecan in addition to loperamide 2 mg by mouth every 2 hours until the patient is diarrhea free is the recommended antidiarrheal regimen. Although both atropine and loperamide may be sufficient by themselves, these agents used in combination provide the best prophylaxis. When administered with irinotecan, intensive loperamide therapy with higher doses is recommended; therefore, there is no maximal dose.

**References:**

**Men's & Women's Health**

8. **Answer C:** Start alendronate 70 mg orally weekly and continue with calcium carbonate 1200 mg orally daily, but increase to vitamin D 600 IU orally daily.

M.M. has osteoporosis because her T-scores are below −2.5. Her FRAX score for 10-year fracture probability is no greater than 20%, but her probability of hip fracture is higher than 3%, indicating that she needs prescription therapy at this time. Alendronate is the first-line agent for osteoporosis, together with exercise, calcium 1200 mg orally daily, and vitamin D 600 IU daily (Answer C). She is currently taking 1200 mg of calcium carbonate and 200 IU of vitamin D, which should be increased to 600 IU of vitamin D (Answer A and Answer D). Risedronate is also a first-line agent for osteoporosis, but the vitamin D dose should be at least 600 IU daily (Answer D).

**References:**
9. **Answer D:** *Ceftriaxone 250 mg intramuscularly plus azithromycin 1 g orally x 1.*  
Ceftriaxone and azithromycin are the drugs of choice for treating gonococcal infection (Answer D). Ceftriaxone is the treatment for gonococcal infection, and azithromycin is used to cover *Chlamydia*. Because both infections generally occur together and her partner has multiple partners, treatment of both *Chlamydia* and gonorrhea is recommended. Fluoroquinolones are seldom used because of resistance (Answer B). Ceftriaxone 125 mg is not the correct dose for gonococcal infections (Answer C). The 2010 Centers for Disease Control and Prevention guidelines increased the dose of ceftriaxone from 125 mg intramuscularly to 250 mg intramuscularly. The patient is confirmed to have a gonococcal infection, despite being asymptomatic. In general, coverage for *Chlamydia* should also be included (Answer D).  
References:  

10. **Answer D:** *Venlafaxine 75 mg orally daily.*  
Z.V. is experiencing hot flashes and has a history of ER+ breast cancer. Because of her history of breast cancer, estrogen is contraindicated for her (Answer A, Answer B, and Answer C). Venlafaxine could be an option to help treat her hot flashes (Answer D).  
References:  

11. **Answer A:** *Discontinue atenolol and initiate methyldopa.*  
Atenolol is not preferred during pregnancy because of reports of intrauterine growth retardation (Answer B and Answer C). Methyldopa is the drug of choice for hypertension in pregnant women or those trying to conceive (Answer A). Labetalol is sometimes substituted for methyldopa but is not an option in the choices. Losartan is also not first line because of the teratogenic effects of angiotensin II receptor blockers (ARBs) (Answer D).  
References:  

12. **Answer C:** *Start sildenafil 50 mg 1 hour before intercourse.*  
Lidocaine/prilocaine 2.5% cream applied to the glans penis and shaft 20–30 minutes before intercourse is a treatment for premature ejaculation in men (Answer A); it should not be recommended. Erectile dysfunction has been associated with hypertension and diabetes; however, hydrochlorothiazide has not been associated with erectile dysfunction (Answer B). The patient’s blood pressure is well controlled on hydrochlorothiazide, and he does not require a medication change at this time. Sildenafil, a phosphodiesterase (PDE) inhibitor, would be the drug of choice for erectile dysfunction, and quitting smoking may also help (Answer C). The patient’s testosterone is within normal limits, so he would not benefit from the testosterone patch (Answer D).  
References:  

13. **Answer B:** *Discontinue norethindrone acetate 1.5 mg/EE 30 mcg and start drospirenone 3 mg/EE 20 mcg.*  
E.R. is experiencing acne likely induced by her oral contraceptive because of its high androgenic and progestogenic properties. She has been taking the product for longer than 3 months, which is when a product switch is indicated if adverse effects have not resolved (Answer C). The best oral
contraceptive would be one without androgenic or low androgenic properties like drospirenone 3 mg/EE 20 mcg (Answer B). The other products have intermediate progestin and androgen properties, which are not the best choices when a product with no androgen properties is available (Answer A and Answer D).

References:

Pharmacokinetics

14. **Answer C:** Linear regression is not required, simplifying the calculations.
   Noncompartmental analysis is a simpler method of data analysis, and linear regression is not required. Fitting all the data to the same compartmental model is not necessary and is often difficult to do when using compartmental analysis. Although noncompartmental analysis is less complex, its results are no less clinically relevant. It also requires fewer assumptions to be made before its use.

References:

15. **Answer B:** Check C.D.’s INR during the next 2 weeks, expecting a slow decrease, and warn her to use an alternative form of contraception.
   Because carbamazepine is an enzyme inducer, it will cause an increase in the metabolism of both warfarin and the oral contraceptive. Induction is a slow process that occurs over 1–2 weeks, so this patient’s INR will slowly decrease over time, and the effectiveness of her oral contraceptive will decrease, requiring an alternative form of contraception.

Reference:

16. **Answer B:** Accurate but imprecise.
   The CV is a measure of the standard deviation relative to the mean. The CV is a measure of precision. The higher the CV, the less precise is the assay. Precision is the closeness of agreement among results of repeated measures of the same sample. The higher the correlation coefficient, the more accurate the assay. Accuracy is the closeness of a measurement to the true value. The correlation coefficient is a measure of accuracy.

Reference:

17. **Answer A:** The half-life is about 4 hours.
   Based on the results of the concentrations drawn after the first dose of tobramycin, the patient’s elimination rate constant, half-life, Cmax, and Vd can all be calculated. The Cmax is 8.9 mg/L, based on a level taken 1 hour after the end of the infusion, and the elimination rate constant is 0.17 hour⁻¹. The Vd is calculated by dividing the dose by the Cmax. It is around 20 L. The elimination rate constant is calculated from the two concentrations and the change in time. The half-life is calculated from the elimination rate constant and is about 4 hours.
18. **Answer D:** The concentration is too high, and you should keep the dose the same because the concentration will decrease during the next few weeks.

Carbamazepine is an auto inducer. Therefore, during the first few weeks of therapy with carbamazepine, clearance of the drug will increase. For this reason, carbamazepine doses are usually begun at 50% of the ultimate goal dose and increased over 2–3 weeks. In this situation, the concentration is above the therapeutic range (4–12 mg/L). However, because the patient is only in the first week of therapy, the concentration can be expected to decrease during the next few weeks. At this point, the dose should not be increased, and lowering the dose by 50% might ultimately result in a subtherapeutic concentration. Therefore, the correct answer is to keep the dose the same and to recheck the concentration in 1–2 weeks.

Reference: