

AMERICAN COLLEGE OF CLINICAL PHARMACY

Updates in Therapeutics:
2011 Pharmacotherapy Preparatory Review and Recertification Course

POSTTEST ANSWERS – SESSION 6

Oncology Supportive Care

- Answer B:** She should receive antiemesis prophylaxis because her temozolomide dose is 75 mg/m² or greater. Temozolomide at doses > 75mg/m²/day can cause emesis. According to the most recent NCCN Guidelines, prophylaxis with an antiemetic is recommended. However, temozolomide is not considered a highly emetogenic agent, but a moderately emetogenic agent. Lorazepam would only be appropriate if the patient was experiencing anticipatory nausea/vomiting. Therefore, lorazepam would not be appropriate for this therapy. Even though this agent is an oral chemotherapy agent, it is associated with some nausea/emesis.
- Answer C:** Continue ibuprofen 800 mg every 8 hours and morphine SR 40 mg every 12 hours, and initiate zoledronic acid 4 mg intravenously once every 4 weeks.
The patient is taking ibuprofen 800mg every 8 hours which provides 2400mg of ibuprofen every 8 hours in addition to Morphine SR 30mg Q12 hours. We should not discontinue the morphine and initiated oxycodone –APAP as we would be going from a strong opioid to a weaker opioid. Increasing the frequency of morphine would be an appropriate option, however discontinuing the ibuprofen may not be beneficial. If the patient increased her dose of ibuprofen, then she would be getting over 4gm of ibuprofen per day. Adding Zoledronic acid to her current regimen would be beneficial due to her osteolytic lesions.
- Answer C:** The patient, who is neutropenic, should be assessed for antibiotic therapy for treatment of febrile neutropenia. This patient's ANC is 280/mm³. (To calculate the ANC, multiply the WBC by the segmented neutrophils and the band neutrophils: $400/\text{mm}^3 \times (0.6 + 0.1) = 280/\text{mm}^3$.) The patient is neutropenic and febrile, therefore CSFs may be appropriate if she has other risk factors. Her ANC is greater than 100/mm³, but she has a fever which is a potential sign of infection. Prophylactic treatment with antibiotic drugs is not necessary and can increase the risk of resistant organisms. At this time, the patient should be evaluated for antibiotic therapy (whether outpatient or inpatient treatment). Because the disease is potentially curable, doses should not be reduced on the next cycle.
- Answer B:** The patient should receive a medication guide before starting therapy, discuss the potential adverse effects with a health care professional, and sign an acknowledgment form recognizing the risks of taking this agent. All patients who are prescribed and receiving ESAs must be provided with a Medication Guide upon initiation of therapy and with each dose explaining the risks and benefits of these agents. They will also be asked to sign an acknowledgement form that confirms they have talked with their health care professional about the risks of ESAs (may cause tumors to grow faster, may cause patients to die sooner, and may cause patients to develop blood clots or heart problems).
- Answer D:** The patient is experiencing an extravasation from doxorubicin. The nurse should initiate dexrazoxane for the treatment of this patient's extravasation. Dexrazoxane has recently also been approved for use as an antidote for the extravasation of anthracycline chemotherapy. Amifostine is used to prevent nephrotoxicity from cisplatin. Hyaluronidase is recommended for

vinca alkaloids, but hyaluronidase is of limited availability. Antidotes for mitomycin, streptozocin, paclitaxel, and oxaliplatin are not well documented in the literature.

6. **Answer C:** Bleomycin Dose adjustment for hepatic dysfunction may be considered for doxorubicin, daunorubicin, vincristine, vinblastine, docetaxel, paclitaxel, sorafenib, and pazopanib. Dose adjustment for renal dysfunction may be considered for methotrexate, carboplatin, cisplatin etoposide, bleomycin, topotecan, and lenalidomide.

Men's and Women's Health

7. **Answer C:** Discontinue ramipril and start methyldopa. ACE inhibitors are known teratogens and contraindicated in pregnancy. Methyldopa is the drug of choice for hypertension in pregnant women or those trying to conceive. Atenolol should also not be used in pregnancy unless the benefit outweighs the risk.
8. **Answer A:** Alendronate. Alendronate has been shown to decrease hip fractures. The patient's T-score indicates osteoporosis of the hip and requires treatment that increases BMD at the hip. Raloxifene and calcitonin increase BMD at the spine only. Teriparatide increases BMD at the spine and hip but is not considered a first-line treatment.
9. **Answer A:** Paroxetine. Paroxetine is the only agent listed that helps with premature ejaculation. Serotonin re-uptake inhibitors such as fluoxetine, paroxetine and sertraline may be administered daily or 2-12 hours prior to sexual intercourse to help prevent premature ejaculation. The other agents are used for impotence.
10. **Answer B:** Ceftriaxone (CTX) 125 mg intramuscularly plus azithromycin 1 g orally x 1. Ceftriaxone and Azithromycin are the drugs of choice for treatment of gonococcal infection of the pharynx. Ceftriaxone is the treatment for gonococcal infection and Azithromycin is used to cover Chlamydia as well. Because both infections generally occur together, treatment for both is recommended. Fluoroquinolones are used rarely due to resistance.
11. **Answer A:** Bromocriptine. Bromocriptine may decrease milk supply by blocking prolactin in the pituitary gland. Haloperidol, risperidone, and metoclopramide may increase milk supply by blocking dopamine and increasing prolactin release.

Pharmacokinetics

12. **Answer B.** At around 72 hours.
Her elimination rate constant (k) = $\frac{(\ln 18 - \ln 14.3)}{41} = 0.005 \text{ hr}^{-1}$. To find the time when her concentration drops below 10 mg/L, use the following equation: $C_1 = C_0 * e^{-kt}$. $10 \text{ mg/L} = 14.3 \text{ mg/L} * e^{-(0.005 * t)}$. $t = 72 \text{ hours}$.
13. **Answer C:** Rheumatoid arthritis
Rheumatoid arthritis leads to a decrease in muscle mass and a decrease in serum creatinine. Answer A is incorrect. Hypertension would be likely to damage the kidneys, leading to an increase in serum creatinine. Answer B is incorrect. Cimetidine interacts with creatinine in the kidneys, competing for

renal secretion and increasing the creatinine concentration. Answer D is incorrect. Lisinopril therapy would be likely to raise serum creatinine slightly due to its effect on the efferent arteriole.

14. **Answer A:** It assesses the precision of the assay in relation to the mean. The CV relates the standard deviation to the mean. Answer B is assessed by calculating the mean prediction error (using predictive performance). Answer C is sensitivity. Answer D is the correlation coefficient.

15. **Answer B:** Fluconazole. Fluconazole is a weak inhibitor of CYP3A4 and is less likely to interact unless large doses are used. Ketoconazole is a potent inhibitor of CYP3A4 and would be likely to interact. Itraconazole is a potent inhibitor of CYP3A4 and would be likely to interact. Voriconazole is a potent inhibitor of CYP3A4 and would be likely to interact.

16. **Answer D:** Drug metabolism is significantly different between various populations. Pharmacogenetics is a pharmacokinetic characteristic and is different from gene therapy, which describes the treatment of various disease states through gene alteration. A drug's therapeutic range will not change based on differences in a population's genetic makeup. The clinical expression of a person's genes is called their phenotype. The genotype is their genetic makeup