Session 8: Men's and Women's Health and Oncology Supportive Care
Answer Explanations

Men's and Women's Health

1. **Answer B:** *Ospemifene 60 mg tablets (Osphena).*
   D.D. is experiencing localized genitourinary atrophy, which probably results in pain during sexual intercourse. The best first-line treatment would be a local therapy such as vaginal cream or oral therapy with ospemifene (Answer B) instead of an oral estrogen/progestogen or transdermal systemic agent (Answers A and D). D.D. has had a hysterectomy; therefore, a progestogen in combination with estrogen is not necessary (Answers A and D). Paroxetine is used for vasomotor symptoms and not vaginal atrophy (Answer C).
   Reference
   The North American Menopause Society. Management of symptomatic vulvovaginal atrophy: 2013 position statement of the North American Menopause Society. Menopause 2013;20:888-902. Available at http://www.menopause.org/docs/default-source/2013/vva-position-statement.pdf?sfvrsn=0. Accessed October 9, 2014.

2. **Answer B:** *Calcium carbonate 1200 mg orally daily plus vitamin D 600 IU orally daily with 30 minutes of weight-bearing exercise 3 times/week.*
   M.B. has osteopenia because her T-scores are above −2.5. Her FRAX score for 10-year fracture probability is not greater than 20%, and her probability of hip fracture is less than 3%, indicating that she does not need prescription therapy at this time (Answer C and Answer D). M.B. indicates she has a sedentary lifestyle and could benefit from 30 minutes of weight-bearing exercise 3 times/week to increase her strength (Answer B).
   References
   i. National Osteoporosis Foundation. Physician's Guide to Prevention and Treatment of Osteoporosis 2014. Available at www.nof.org/physguide/index.htm. Accessed October 12, 2014.
   ii. Dietary Reference Intakes for Calcium and Vitamin D Report Brief. Institute of Medicine, 2010. Available at www.iom.edu/Reports/2010/Dietary-Reference-Intakes-for-Calcium-and-Vitamin-D/Report-Brief.aspx. Accessed October 12, 2014.

3. **Answer A**: *Ulipristal 30 mg tablet orally x 1 dose.*
   T.S. is at risk for an unintended pregnancy and needs emergency contraception. The correct choice is ulipristal 30 mg orally in a single dose within 120 hours after intercourse because her BMI is greater than 26 kg/m^2 (Answer A). The levonorgestrel regimens would not be appropriate for use in a patient with a BMI greater than 26 kg/m^2 (Answers B and C). Ethinyl estradiol 30 mcg and levonorgestrel 0.15 mg may be used as an emergency contraceptive method, but the dose should be 4 tablets × 2 doses, 12 hours apart (Answer D) but because of the patient's BMI, ulipristal is the best choice.
   References
   i. Not-2-late.com. Available at http://ec.princeton.edu/questions/ecobesity.html. Accessed October 17, 2014.

ii. Trussell J, Raymond EG, Cleland K. Emergency Contraception: A Last Chance to Prevent Unintended Pregnancy. August 2014. Available at http://ec.princeton.edu/questions/ec-review.pdf. Accessed on October 17, 2014.

4. **Answer C**: *Sildenafil 25 mg oral tablet; use 1 hour before intercourse.*
C.J. is taking fluconazole, which is a CYP3A4 inhibitor that can increase levels of PDE-5 inhibitors and requires doses of PDE-5 inhibitors to be half of the usual dose. According to package labeling, vardenafil oral disintegrating tablets should not be used with CYP3A4 inhibitors (Answer A). The lower dose of sildenafil is 25 mg orally daily, which is appropriate rather than the usual starting dose of 50 mg (Answer C). Avanafil dosing should be lowered to half of the starting dose in those taking a CYP3A4 inhibitor, which would be 50 mg, not 100 mg (Answer B). Tadalafil 5 mg orally daily may not be best to take daily with fluconazole and could also be lowered to 2.5 mg (Answer D).
References
i. Stendra [package insert]. Chesterbrook, PA: Vivus Auxilium, September 2014.
ii. Hatzimouratidis K, Eardley I, Guiliano F, et al. Guidelines on Male Sexual Dysfunction: Erectile Dysfunction and Premature Ejaculation. European Association of Urology 2014. Available at http://www.uroweb.org/gls/pdf/14%20Male%20Sexual%20Dysfunction_LR.pdf. Accessed October 17, 2014.

5. **Answer A**: *Glyburide.*
D.L. has elevated blood glucose levels, indicating she needs therapy. Insulin glargine has not been well studied in pregnant women and is not recommended at this time for use during pregnancy (Answer B). Metformin is best used before pregnancy and for gestational diabetes (Answer C). Insulin is a good choice, but detemir is not yet recommended in pregnancy (Answer D). The insulins of choice in pregnancy are insulin NPH combined with regular insulin. There are some data to support the use of glyburide as an appropriate choice to treat gestational diabetes (Answer A). If the patient does not respond to glyburide, she may be switched to regular insulin and NPH insulin.
Reference
Langer O, Conway DL, Berkus MD, et al. A comparison of glyburide and insulin in women with gestational diabetes. N Engl J Med 2000;343(16):1134-8.

Oncology Supportive Care

6. **Answer D:** *This patient should receive antiemesis prophylaxis because this is a highly or moderately emetogenic regimen.*
Vismodegib is considered a highly to moderate emetogenic oral chemotherapy agent for basal cell carcinoma. According to the most recent NCCN guidelines, prophylaxis with an antiemetic is recommended. Lorazepam would be appropriate only if the patient were experiencing anticipatory nausea or vomiting. This is an oral chemotherapy regimen, not IV, and therefore the standard NK1, 5HT3, and steroid would not be appropriate.

References

i. National Comprehensive Cancer Network (NCCN). Clinical Practice Guidelines in Oncology: Antiemesis, version 2. 2014. Available at www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed October 12, 2014.
ii. Kris MG, Hesketh PJ, Somerfield MR, et al. American Society of Clinical Oncology guideline for antiemetics in oncology: update 2006. J Clin Oncol 2006;24:2932-47.
iii. Multinational Association for Supportive Care in Cancer. MASCC/ESMO Antiemetic Guideline 2010. Available at www.mascc.org. Accessed October 10, 2012.

7. **Answer C:** *Pegfilgrastim.*

This patient is complaining of bone pain at day 7. Pegfilgrastim is given on day 2, ~24 hours after the administration of chemotherapy. Because of the mechanism of action of the pegfilgrastim, it is the most likely of all of the medications to cause bone pain. Aprepitant, ondansetron, and venlafaxine are not associated with bone pain.

References

i. Klastersky J, Paesmans M. Risk-adapted strategy for the management of febrile neutropenia in cancer patients. Support Care Cancer 2007;15:477-82.
ii. Smith TJ, Khatcheressian J, Lyman GH, et al. 2006 update of recommendations for the use of white blood cell growth factors: an evidence-based clinical practice guideline. J Clin Oncol 2006;24:1-19.
iii. National Comprehensive Cancer Network (NCCN). Clinical Practice Guidelines in Oncology: Myeloid Growth Factors, version 2. 2014. Available at www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed October 12, 2014.

8. **Answer C:** *168 cells/mm^3*.

To calculate the ANC, multiply the WBC by the segmented neutrophils and the band neutrophils: 280 cells/mm^3 × (0.45 + 0.15) = 168 cells/mm^3.

References

i. Klastersky J, Paesmans M. Risk-adapted strategy for the management of febrile neutropenia in cancer patients. Support Care Cancer 2007;15:477-82.
ii. Smith TJ, Khatcheressian J, Lyman GH, et al. 2006 update of recommendations for the use of white blood cell growth factors: an evidence-based clinical practice guideline. J Clin Oncol 2006;24:1-19.
iii. National Comprehensive Cancer Network (NCCN). Clinical Practice Guidelines in Oncology: Myeloid Growth Factors, version 2. 2014. Available at www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed October 12, 2014.

9. **Answer D:** *Age, renal and hepatic dysfunction, and previous history of chemotherapy.*

According to the NCCN guidelines for myeloid growth factors, patient-specific risk factors must be considered when one is evaluating a patient's overall risk for febrile neutropenia. Specific factors include age greater than 65, previous chemotherapy or radiation therapy, preexisting neutropenia, infection or open wounds, recent surgery, poor performance status, poor renal function and liver dysfunction, and HIV+ status. Although chemotherapy does play a role, especially if the regimen has a risk of more than 20%, capecitabine/oxaliplatin is not considered a high-risk regimen. Male gender and colon cancer specifically are not associated with higher rates of febrile neutropenia.

References

i. Klastersky J, Paesmans M. Risk-adapted strategy for the management of febrile neutropenia in cancer patients. Support Care Cancer 2007;15:477-82.
ii. Smith TJ, Khatcheressian J, Lyman GH, et al. 2006 update of recommendations for the use of white blood cell growth factors: an evidence-based clinical practice guideline. J Clin Oncol 2006;24:1-19.
iii. National Comprehensive Cancer Network (NCCN). Clinical Practice Guidelines in Oncology: Myeloid Growth Factors, version 2. 2014. Available at www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed October 12, 2014.

10. **Answer C:** *Decrease dose of darbepoetin by 40%.*
According to national guidelines, a rise in hemoglobin of more than 1 g/dL in 1–2 weeks is considered a rapid rise in hemoglobin, and therefore the dose should be decreased by 40%. The current dose should not be continued because it will result in a hemoglobin greater than 12 g/dL, which increases the patient's risk for additional side effects. Dosing darbepoetin 500 mcg weekly would be inappropriate, as would switching to another therapy, because neither would decrease the hemoglobin but would potentially increase the hemoglobin rise to more than 12 g/dL.

References

i. National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Cancer- and Chemotherapy-Induced Anemia, version 2. 2014. Available at www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed October 12, 2014.
ii. Rizzo JD, Brouwers M, Hurley P, et al. American Society of Clinical Oncology/American Society of Hematology Clinical Practice Guideline. Update on the use of epoetin and darbepoetin in adult patients with cancer. J Clin Oncol 2010;28:4996-5010.
iii. Glaspy J. Update on safety of ESA in cancer-induced anemia. J Natl Compr Canc Netw 2012;10:659.

11. **Answer C:** *Allopurinol.*
For the prevention of tumor lysis syndrome, allopurinol should be prescribed before the initiation of the first cycle of chemotherapy if a high tumor burden is suspected. Dexrazoxane is an agent used both for cardioprotection with anthracyclines and for the treatment of extravasation from anthracyclines. Aprepitant will have no effect on tumor lysis or the subsequent electrolyte changes. Glucarpidase is only for use in patients with delayed methotrexate clearance due to renal function.

References

i. Howard SC, Jones DP, Pui CH. The tumor lysis syndrome. N Engl J Med 2011;364:1844-54.
ii. Tyson AM, Gay EW. Successful experience utilizing dexrazoxane treatment for an anthracycline extravasation. Ann Pharmacother 2010;44:922-5.
iii. Links M, Lewis C. Chemoprotectants: a review of their clinical pharmacology and therapeutic efficacy. Drugs 1999;57:293-308.

12. **Answer B:** *Hold therapy today, administer 2 units of packed RBCs, and recheck labs in 1 week.*

According to the laboratory results, the patient is considered to have anemia, thrombocytopenia, and borderline neutropenia. National guidelines do not recommend the administration of chemotherapy with low counts. Administering 2 units of packed RBCs and rechecking labs in 1 week is the best option because it will allow the neutropenia and the platelets to recover. Administering platelets with a platelet count of 98 is not appropriate.

References

i. National Comprehensive Cancer Network (NCCN). Clinical Practice Guidelines in Oncology: Myeloid Growth Factors, version 2. 2014. Available at www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed October 12, 2014.
ii. National Comprehensive Cancer Network (NCCN). Practice Guidelines in Oncology: Cancer- and Chemotherapy-Induced Anemia, version 2. 2014. Available at www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed October 12, 2014.
iii. Smith TJ, Khatcheressian J, Lyman GH, et al. 2006 update of recommendations for the use of white blood cell growth factors: an evidence-based clinical practice guideline. J Clin Oncol 2006;24:1-19.