

Chapter 84, SELF-ASSESSMENT QUESTIONS

1. A 44-year-old otherwise healthy patient from Tempe, Arizona, presents with a 4-week history of complaints of fever and malaise. A chest x-ray demonstrates several small nodular lesions in both lungs and mediastinal adenopathy. Based on this patient history, the most likely fungal cause of this pneumonia is:
 - A. *Histoplasma capsulatum*
 - B. *Blastomycosis dermatitidis*
 - C. *Coccidioidomycosis immitis*
 - D. *Cryptococcus neoformans*
 - E. *Aspergillus fumigatus*
2. Which dosing approach (formulation) of posaconazole will achieve the highest serum levels in a majority of patients?
 - A. Administer the suspension as a single daily dose
 - B. Administer the suspension in multiple daily doses (2–4 times per day)
 - C. Administer the suspension hour prior to or 2 hours after meals
 - D. Administer delayed-released tablets once daily
3. Phototoxic reactions with voriconazole:
 - A. Are not necessarily preventable with sunscreen
 - B. Have been associated with increased risk of squamous cell carcinoma
 - C. Typically resolve after the third day of dosing
 - D. Occur in patients who are developing hepatotoxic reactions to voriconazole
 - E. Are associated with trough serum concentrations greater than 5.5 mcg/mL (5.5 mg/L; 15.7 μ mol/L)
4. Nephrotoxicity with amphotericin B:
 - A. Is prevented by using lipid formulations of the drug
 - B. Is prevented by administering saline infusions before and after doses
 - C. Is enhanced when the drug is administered by continuous infusion
 - D. Is enhanced with higher treatment doses and prolonged treatment
 - E. Rarely develops in hydrated patients
5. Which antifungals pharmacokinetic properties are closely linked to pharmacogenetic differences in cytochrome P450 2C19 metabolism?
 - A. Fluconazole
 - B. Voriconazole
 - C. Itraconazole
 - D. Posaconazole

6. A 56-year-old woman is admitted to the surgical intensive care unit with signs of systemic inflammatory response syndrome (SIRS), renal dysfunction, and infection following an emergency exploratory laparotomy. The patient is started on broad-spectrum antibiotics. What is the most likely fungal pathogen in this setting?
- A. *Candida* species
 - B. *Cryptococcus* spp.
 - C. *Aspergillus* spp.
 - D. *Coccidioidomycosis*
 - E. Mucormycosis
7. *Candida krusei* is considered intrinsically resistant to:
- A. Echinocandins
 - B. Fluconazole
 - C. Itraconazole
 - D. Voriconazole
 - E. Posaconazole
8. A patient with acute myelogenous leukemia receiving remission induction chemotherapy develops nodular opacities and pan-sinusitis while receiving voriconazole. Serum galactomannan is negative (index 0.2). The patient's last voriconazole trough was determined to be 2.2 mcg/mL (2.2 mg/L; 6.3 μ mol/L). An examination of the mouth also reveals necrotic ulcers on the hard palate. The most likely infection in this patient is:
- A. *Aspergillosis*
 - B. *Mucormycosis*
 - C. Invasive *Candidiasis*
 - D. *Histoplasmosis*
 - E. *Cryptococcosis*
9. A patient with a prior history of successfully-treated disseminated aspergillosis has been taking voriconazole 300 mg orally twice daily for 6 months and now presents with complaints of hand and shoulder pain that has progressively worsened over the last month. The patient's symptoms are most consistent with:
- A. Voriconazole-associated peripheral neuropathy
 - B. Voriconazole-associated fluoride toxicity (periostitis)
 - C. Voriconazole-associated myotoxicity (rhabdomyolysis)
 - D. Symptoms are unlikely to be related to voriconazole

10. Which of the following interventions in patients with invasive candidiasis have been identified as an independent predictor of improved survival?
- A. Receipt of antifungal therapy within 6 hours of a positive culture
 - B. Receipt of antifungal therapy before a positive culture
 - C. Treatment with an echinocandin
 - D. Infection with *Candida tropicalis*
11. Which of the following non-*albicans* *Candida* species is most likely to be resistant to both triazole and echinocandin antifungals?
- A. *C. parapsilosis*
 - B. *C. tropicalis*
 - C. *C. glabrata*
 - D. *C. krusei*
12. Combination antifungal therapy has been definitely proven to reduce mortality for which of the following invasive fungal infections?
- A. Histoplasmosis pneumonia
 - B. Invasive candidiasis
 - C. Invasive aspergillosis
 - D. Cryptococcal meningitis
13. Which of the following strategies would be most appropriate for verifying a patient's voriconazole exposure by therapeutic drug monitoring?
- A. Check peak and trough concentrations on day 1 of therapy
 - B. Check trough concentration on day 1 of therapy
 - C. Draw samples at steady state 1, 6, and 12hours after a dose to calculate the area under the curve
 - D. Check a trough concentration after 4 to 7 days of therapy
14. Which of the following patient risk variables is associated with increased risk of mold infection?
- A. Presence of a central venous catheter
 - B. Prolonged neutropenia (ie,> 3 weeks)
 - C. Broad-spectrum antibiotic therapy
 - D. Residence in the Mississippi River Valley

15. A 54 year old afebrile ICU patient with an indwelling Foley (urinary) catheter receiving broad-spectrum antibiotic therapy has positive urine culture for *C. albicans*. The patient has no other evidence of infection or symptoms. What is the best treatment approach at this time:
- A. Start an echinocandin as the patient is at high risk for invasive candidiasis
 - B. No treatment is indicated at this time
 - C. Start bladder irrigations with amphotericin B (0.1 mg/L) to clear the colonization
 - D. Start fluconazole 400 mg once daily

Answers

- 1. C
- 2. D
- 3. B
- 4. D
- 5. B
- 6. A
- 7. B
- 8. B
- 9. B
- 10. C
- 11. C
- 12. D
- 13. D
- 14. B
- 15. B