Chapter 81, Self-Assessment Questions

Case pertaining to questions 1–6: An 82-year-old woman with no known allergies was admitted to the hospital to receive surgical and medical management for suspected osteomyelitis of the tibia. During surgical debridement, a bone biopsy was obtained for culture and histopathology. The microbiology laboratory reported *Staphylococcus aureus*, susceptible to vancomycin, linezolid, daptomycin, trimethoprim-sulfamethoxazole but resistant to penicillin, oxacillin, ciprofloxacin, erythromycin, and clindamycin.

1. Select an appropriate intravenous antimicrobial regimen for this patient.
   A. Linezolid
   B. Levofloxacin
   C. Nafcillin
   D. Trimethoprim-sulfamethoxazole
   E. Vancomycin

2. Which laboratory parameter(s) should be monitored weekly in this patient receiving intravenous antibiotic therapy?
   A. Liver function tests
   B. BUN/SCr
   C. Vancomycin trough
   D. A and B
   E. B and C

3. Response to therapy can be evaluated by the following laboratory test(s):
   A. CPK
B. CRP
C. ESR
D. A and B
E. B and C

4. Following 3 weeks of intravenous therapy with clinical improvement, the clinician would now like to switch to oral therapy. What do you recommend?
   A. Daptomycin
   B. Linezolid
   C. Levofloxacin
   D. Trimethoprim-sulfamethoxazole
   E. Vancomycin

5. Which laboratory parameter should be monitored weekly with this oral regimen?
   A. Amylase/lipase
   B. BUN/SCr
   C. CBC
   D. CPK
   E. LFT

6. What is the minimum duration of therapy for this patient according to Infectious Diseases Society of America (IDSA) guidelines?
   A. 4 weeks
   B. 6 weeks
   C. 8 weeks
   D. 3 months
Case pertaining to questions 7–10: An 8-year-old boy with a sulfa allergy presents to the emergency department with worsening signs and symptoms of cellulitis. He is on day 5 of cephalexin therapy. The medical team has ordered laboratory tests and imaging studies for suspected osteomyelitis.

7. Which imaging study(s) would be appropriate for diagnosis in this patient?
   A. X-ray
   B. MRI
   C. CT scan
   D. A and B
   E. All of the above

8. Osteomyelitis can be definitely diagnosed by:
   A. Isolation of organism(s) from bone biopsy
   B. Isolation of organism(s) from sinus tract
   C. Positive imaging test and elevated ESR
   D. A and B
   E. B and C

9. The route of infection in this patient is most likely.
   A. Acute
   B. Chronic
   C. Contiguous with vascular insufficiency
   D. Contiguous without vascular insufficiency
   E. Hematogenous
10. Blood cultures (two sets) obtained in the emergency department were positive for *S. aureus*. Sensitivity data were as followings: susceptible to clindamycin, levofloxacin, linezolid, trimethoprim-sulfamethoxazole and vancomycin, but resistant to penicillin, oxacillin, and erythromycin. Disk diffusion test (D-test) was reported as negative. The patient was admitted for intravenous therapy and is now being discharged on oral therapy.

Which oral regimen would you recommend for this patient?

A. Clindamycin  
B. Doxycycline  
C. Levofloxacin  
D. Rifampin  
E. Trimethoprim-sulfamethoxazole and rifampin

Case pertaining to questions 11–15: A 57-year-old man (Ht 183 cm [6’]; Wt 103 kg [227 lb]) with noninsulin-dependent diabetes and a nonhealing foot ulcer presents to the clinic with pain, redness, and swelling around the ulcer. An x-ray of the foot shows bone destruction consistent with osteomyelitis. Pertinent laboratory values: BUN 19 mg/dL (6.8 mmol/L); SCr 1.2 mg/dL (106 µmol/L). He has no known allergies.

11. What organism(s) should be empirically covered for this patient?

A. Gram-positives  
B. Gram-negatives  
C. Gram-positives and anaerobes  
D. Gram-negative and anaerobes  
E. Gram-positives, gram-negatives, and anaerobes
12. Select an appropriate empiric antimicrobial regimen for this patient.
   A. Aztreonam and vancomycin
   B. Ceftazidime and vancomycin
   C. Ciprofloxacin and vancomycin
   D. Metronidazole and vancomycin
   E. Piperacillin/tazobactam and vancomycin

13. If the patient begins vancomycin therapy, what dosage regimen would you recommend?
   A. 1000-mg IV infusion every 8 hours
   B. 1000-mg IV infusion every 12 hours
   C. 1000-mg IV infusion every 24 hours
   D. 1500-mg IV infusion every 12 hours
   E. 1500-mg IV infusion every 24 hours

14. If you want to ensure therapeutic vancomycin concentration(s), what monitoring parameter(s) should be performed?
   A. Obtain trough after first dose
   B. Obtain trough at steady-state
   C. Obtain peak after first dose
   D. Obtain peak at steady-state
   E. Obtain both peak and trough at steady-state
15. The clinician discharged the patient on daptomycin to be administered once daily in the infusion clinic. Which laboratory parameter should be monitored weekly?

A. Amylase/lipase
B. BUN/SCr
C. CBC
D. CPK
E. LFT
Answers
1.   E
2.   E
3.   E
4.   B
5.   C
6.   C
7.   D
8.   A
9.   D
10.  A
11.  E
12.  E
13.  D
14.  B
15.  D