New Developments in the Treatment of Gram-positive Infections: Focus on Skin Infections

Self-assessment Questions

1. A recent study by the Centers for Disease Control and Prevention (CDC) on the burden of methicillin-resistant *Staphylococcus aureus* (MRSA) infections shows the rate of community onset infections has

   A. Been declining steadily since 2005
   B. Decreased by one-half between 2005 and 2011
   C. Nearly doubled between 2005 and 2011
   D. Remained about the same since 2005***

   **Correct answer D.**

   The rate of invasive MRSA infections remained steady at approximately 5 per 100,000 between 2005 and 2011.

2. Which of the following oral antimicrobial agents are recommended by the Infectious Diseases Society of America (IDSA) guidelines for the treatment of cellulitis when MRSA is suspected:

   A. Sulfamethoxazole-trimethoprim
   B. Minocycline
   C. Linezolid
   D. All of the above***

   **Correct answer D.**

   The IDSA guidelines state that sulfamethoxazole-trimethoprim, minocycline or linezoid are all potential options for the treatment of purulent cellulitis.

3. Which of the following antimicrobial agents display bactericidal activity against MRSA:

   A. Daptomycin***
   B. Tedizolid
   C. Clindamycin
   D. Doxycycline

   **Correct answer A.**
Tedizolid, clindamycin, and doxycycline all display bacteriostatic activity; whereas daptomycin, vancomycin, sulfamethoxazole-trimethoprim, and dalbavancin display bactericidal activity.

4. Reimbursement for outpatient antimicrobial therapy under the Medicare program is

A. Not available under any circumstances
B. Covered under Medicare part B when the drug is administered in an outpatient clinic under the supervision of a physician***
C. Covered under Medicare Part D
D. Available if the patient pays an 80% co-payment

Correct Answer B.

Medicare Part B covers outpatient parenteral antibiotic therapy (OPAT) when administered under the direct supervision of a physician.

5. Potential benefits of OPAT include

A. Avoiding the daily cost of hospitalization
B. Reduction in hospital acquired infection risk
C. Decreased transmission of drug-resistant infections
D. All of the above***

Correct answer D.

Hospitalization to receive antimicrobial therapy is costly and increases the likelihood of acquiring or transmitting a drug-resistant infection.

6. Which of the following antimicrobial medications has been shown to be effective for treating skin infections when given as a 1000-mg dose followed by 500 mg given 8 days later:

A. Daptomycin
B. Vancomycin
C. Dalbavancin***
D. Oritavancin

Correct answer C.
The Efficacy and Safety of Dalbavancin for the treatment of Acute Bacterial Skin and Skin Structure Infections (DISCOVER) 1 and 2 trials established Dalbavancin as an effective treatment for skin infection when given in 2 doses.

7. A woman, 65 years of age, has not responded to treatment with cephalexin for a skin infection on her leg. She has experienced a rash from sulfamethoxazole-trimethoprim in the past. She takes fluoxetine 10 mg daily. Select the most appropriate oral therapy for the treatment this patient.

A. Doxycycline***
B. Linezolid
C. Vancomycin
D. Ceftaroline

Correct answer A.

Minocycline is recommended by the IDSA guidelines when MRSA is suspected. Vancomycin and ceftaroline are intravenous and linezolid may interact with her fluoxetine, making minocycline the best choice.

8. The most common adverse effects seen with dalbavancin therapy include which of the following:

A. Nephrotoxicity
B. Nausea***
C. Thrombocytopenia
D. Abnormal liver function tests

Correct answer B.

The most common adverse effects reported in the package insert are gastrointestinal, including nausea, headache and diarrhea.

9. Which of the following are lipoglycopeptide antimicrobial agents that may be effective against MRSA:

A. Dalbavancin
B. Oritavancin
C. Telavancin
D. All of the above***
Correct answer D.

Dalbavancin, oritavancin, and telavancin are all considered bactericidal lipoglycopeptide antimicrobial agents.

10. The majority of invasive MRSA infections are classified into which epidemiological class?

A. Hospital acquired
B. Community onset
C. Health care-associated community onset***
D. Dialysis related

Correct answer C.

Only 18% and 20% are hospital acquired and community onset, whereas 60% are health care-associated community onset. This includes dialysis patients and those recently discharged from a hospital or nursing home.