Subacute Bacterial Endocarditis: Review Questions

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Questions

Choose the single best answer for each question.

1. Subacute bacterial endocarditis (SBE) may have clinical manifestations similar to all of the following EXCEPT:
   (A) Systemic vasculitis
   (B) Atheroembolism
   (C) Metastatic malignancy
   (D) Obstructive sleep apnea
   (E) Cardiac myxoma

2. Which of the following pathogens is the most common cause of SBE?
   (A) Staphylococcus epidermidis
   (B) Viridans streptococci
   (C) Candida albicans
   (D) Enterococcus faecalis
   (E) Proteus mirabilis

3. A 44-year-old homeless man with a history of heroin abuse presents with a 1-week history of fevers, chills, and hemoptysis. Chest radiography reveals multiple cavitory lung masses. All of the following statements regarding this patient’s probable diagnosis are correct EXCEPT:
   (A) The most likely etiology is Staphylococcus aureus
   (B) Operative repair is always needed
   (C) Some patients can be treated with a 2-week course of antibiotics
   (D) A systolic murmur that increases with inspiration may be noted
   (E) Pleuritic chest pain and hemoptysis may be present

4. Which of the following drugs is the preferred treatment option for patients with SBE due to viridans streptococci?
   (A) Penicillin
   (B) Vancomycin
   (C) Erythromycin
   (D) Aztreonam
   (E) Itraconazole

5. All of the following are components of general treatment principles of SBE EXCEPT:
   (A) Intravenous (IV) therapy
   (B) Prolonged duration
   (C) Use of a bacteriostatic antibiotic
   (D) Synergistic antibiotics
   (E) Determination of antibiotic susceptibility profiles

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ANSWERS AND EXPLANATIONS

1. (D) Obstructive sleep apnea. SBE is a “masquerader” of numerous disease processes due to the myriad of nonspecific symptoms and signs. Other inflammatory processes, such as vasculitis, atheroembolism, and metastatic malignancy, may be associated with signs and symptoms (eg, fever, weight loss, back pain, and anorexia), as well as laboratory findings (eg, anemia, leukocytosis, and an elevated sedimentation rate), all of which can occur with SBE. Obstructive sleep apnea typically presents with snoring, daytime somnolence, and, occasionally, evidence of pulmonary hypertension or cor pulmonale but is not associated with systemic inflammation.

2. (B) Viridans streptococci. Viridans streptococci (not Streptococcus viridans, which is no longer accepted as a species) are a group of streptococci that typically inhabit the oral cavity and are the most common pathogens of SBE. Most laboratories do not routinely speciate this group of bacteria because speciation typically does not change management. The other organisms listed can cause SBE on occasion but are much less common. IV drug users may develop SBE from Candida and gram-negative species.

3. (B) Operative repair is always needed. Tricuspid valve endocarditis typically occurs in IV drug users and presents with fever and pulmonary symptoms due to septic emboli from friable valvular vegetations. An inspiratory systolic murmur at the right sternal border may be noted. Most cases of tricuspid endocarditis result from Staphylococcus aureus that is treated with 4 weeks of IV antibiotics, although some studies support a 2-week course in selected, low-risk patients. The majority of patients with tricuspid endocarditis do not require valve replacement or repair.

4. (A) Penicillin. Penicillin is the drug of choice for patients with viridans streptococcal SBE, although ampicillin is a suitable alternative. An aminoglycoside often is administered concurrently for several days for synergistic bacterial killing. Vancomycin is utilized in patients with a significant penicillin or cephalosporin allergy but is not as effective. Erythromycin, aztreonam, and itraconazole are not appropriate in this setting.

5. (C) Use of a bacteriostatic antibiotic. Several basic treatment principles apply to the treatment of SBE. Prolonged IV therapy (4–6 weeks) is the cornerstone of management. Determination of the minimum inhibitory concentration and/or minimum bactericidal concentration is useful as well. Synergistic therapy with an aminoglycoside may be useful for expedient sterilization of blood cultures and often is utilized during the first several days of therapy. Bactericidal antibiotics such as β-lactams are important agents for treating SBE; however, bacteriostatic agents such as macrolides should be avoided because use of these drugs do not reliably eradicate the infection.

REFERENCES