

Infective Endocarditis

Overview

Infective endocarditis (IE) is a serious infection characterized by inflammation of the endocardium, primarily affecting heart valves. Understanding its clinical manifestations, symptoms, signs, transmission, and prophylaxis is crucial for effective management and examination success.

Key Clinical Manifestations

- **Symptoms:**
 - **Acute Form:** Rapid onset of high fever, chills, shortness of breath, and chest pain, typically occurring 1-2 weeks after bacteremia. Commonly associated with virulent organisms like *Staphylococcus aureus*.
 - **Subacute Form:** Milder symptoms such as low-grade fever, fatigue, weight loss, and arthralgia. Often linked to less aggressive bacteria like coagulase-negative staphylococci.
- **Signs:**
 - **Embolic Phenomena:** Petechiae, subungual hemorrhages, Osler nodes (painful lesions on fingers/toes), Janeway lesions (painless macules on palms/soles), and Roth spots (retinal emboli).
 - **Heart Murmurs:** New or worsening murmurs due to valvular dysfunction.

Transmission

- Bacteria typically enter the bloodstream through:
 - **Intravenous catheters or drug injections.**
 - **Dental procedures or surgical interventions** that disrupt mucosal barriers.
- **High-risk groups** include individuals with pre-existing heart conditions, prosthetic valves, and intravenous drug users.

Prophylaxis

- Prophylactic antibiotics (e.g., Amoxicillin) are recommended for patients with high-risk conditions undergoing certain procedures (e.g., dental work, surgeries) to prevent bacteremia and subsequent endocarditis.
- Administer prophylaxis 1-2 hours before the procedure.

Pathophysiology

- **Altered Valve Surface:** Bacteria attach to damaged valve surfaces, forming nonbacterial thrombotic vegetation (NBTC) due to turbulence and hemodynamic factors.
- **Bacterial Colonization:** Bacteria proliferate within the vegetation, protected from the immune response, leading to further complications.

Diagnosis

- **Clinical Suspicion:** Based on symptoms, risk factors, and physical examination findings.
- **Microbiological Data:** Blood cultures must show the presence of bacteria.
- **Imaging:** Echocardiography is essential for identifying cardiac lesions.

Treatment

- **Antibiotic Therapy:** High-dose intravenous antibiotics for 4-10 weeks, tailored to the causative organism. Common regimens include:
 - **Streptococci/Enterococci:** Penicillin or ceftriaxone, possibly combined with aminoglycosides.
 - **Staphylococci:** Flucloxacillin or vancomycin, often combined with rifampicin for prosthetic valve infections.
- **Surgical Intervention:** Indicated for severe cases with significant valvular damage, uncontrolled infection, or large vegetations.

Complications

- **Embolic Complications:** Can lead to stroke, myocardial infarction, or organ damage.
- **Local Spread:** May result in valvular damage, abscess formation, or pericarditis.

- **Metastatic Spread:** Secondary infections in organs like the kidneys and brain.

Conclusion

Infective endocarditis is a complex condition requiring prompt recognition and treatment. Focusing on the clinical manifestations, transmission, and prophylaxis will provide a solid foundation for your oral exam. Understanding the pathophysiology, diagnosis, and treatment will further enhance your ability to discuss this critical infectious disease comprehensively.