Commentary

# Pathophysiology of Infective Endocarditis

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## DESCRIPTION

Infective endocarditis is a rare but potentially life-threatening condition that affects the inner lining of the heart and its valves. It is an infection that occurs when bacteria, fungi, or other microorganisms enter the bloodstream and attach to the heart's lining or valves. If left untreated, infective endocarditis can cause severe damage to the heart and other organs, and can even lead to death.

#### Causes

Infective endocarditis is caused by bacteria, fungi, or other microorganisms that enter the bloodstream and attach to the heart's lining or valves.

**Dental procedures:** Dental procedures such as tooth extractions or root canals can cause bacteria to enter the bloodstream. People with a history of infective endocarditis or heart valve disease may be prescribed antibiotics before these procedures to prevent infection.

**Skin infections:** Skin infections such as cellulitis or abscesses can allow bacteria to enter the bloodstream. People who inject drugs or have open wounds are at a higher risk of developing infective endocarditis.

**Catheters:** People with medical conditions that require a catheter, such as kidney dialysis or chemotherapy, are at a higher risk of developing infective endocarditis. The catheter can allow bacteria to enter the bloodstream and attach to the heart's lining or valves.

## **Symptoms**

The symptoms of infective endocarditis can vary depending on the severity of the infection and the part of the heart that is affected. Common symptoms include:

**Fever:** A fever is often the first symptom of infective endocarditis. It may be accompanied by chills and sweating.

**Fatigue:** Fatigue is a common symptom of infective endocarditis. It may be severe and can interfere with daily activities.

**Shortness of breath:** Shortness of breath can occur if the infection affects the heart's valves or causes fluid buildup in the lungs.

**Chest pain:** Chest pain may occur if the infection causes inflammation of the heart's lining or valves.

**Swelling:** Swelling of the feet, ankles, or abdomen may occur if the infection causes fluid buildup in the body.

Other symptoms may include unexplained weight loss, night sweats, a new or changed heart murmur, joint pain, headache, confusion or changes in mental status.

### Diagnosis

Diagnosis of infective endocarditis involves a combination of medical history, physical examination, and diagnostic tests. The doctor will ask about symptoms, medical history, and any risk factors for infective endocarditis. They will also perform a physical examination including listening to the heart for any abnormal sounds or murmurs.

Diagnostic tests may include

**Blood tests:** Blood tests can be used to check for signs of infection, such as an elevated white blood cell count or elevated levels of C-reactive protein.

**Echocardiogram:** An echocardiogram is an imaging test that uses sound waves to create pictures of the heart. It can be used to check for any damage to the heart's valves or other structures.

**Electrocardiogram (ECG):** An ECG is a test that measures the electrical activity of the heart. It can be used to check for any abnormalities in the heart's rhythm.

**Chest X-ray:** A chest X-ray can be used to check for any fluid buildup in the lungs.

**Transesophageal Echocardiogram (TEE):** A TEE is a specialized echocardiogram that uses a small probe that is inserted into the esophagus to get a better view of the heart's structures.

#### Treatment

The treatment of infective endocarditis requires a multidisciplinary approach involving cardiologists, infectious disease specialists, and cardiothoracic surgeons. The primary goal of treatment is to eliminate the infection, eradicate the microorganisms causing the infection, and prevent further damage to the heart and other organs. The specific treatment plan will depend on factors such as the severity of the infection,

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the type of microorganism involved, and the presence of any complications.