Difference Between Acute and Subacute Endocarditis

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Key Difference - Acute vs Subacute Endocarditis

Infective endocarditis is a microbial infection of the heart valves or the mural endocardium that leads to the formation of vegetations composed of thrombotic debris and organisms often associated with the destruction of underlying cardiac tissues. Depending on the time taken for the development of symptoms infective endocarditis is further divided into two subcategories as acute endocarditis and subacute endocarditis. The key difference between these two forms is, there is a sudden onset of symptoms in acute endocarditis whereas in subacute endocarditis the symptoms develop over a prolonged period of time.

What is Infective Endocarditis?

Infective endocarditis is a microbial infection of the heart valves or the mural endocardium that leads to the formation of vegetations composed of thrombotic debris and organisms often associated with the destruction of underlying cardiac tissues. Bacteria are the commonest causative agents of infective endocarditis though it is possible to be due to the infections by other categories of organisms also. There are main two varieties of infective endocarditis as acute and subacute endocarditis. This classification is made based on the speed with which the clinical features develop.

Risk Factors

- Intravenous drug abuse
- Poor dental hygiene
- Intravascular cannulae
- Soft tissue infections
- Cardiac surgery and permanent pacemakers

Clinical Features Consistent With Both Forms of Infective Endocarditis

- New valve lesion/ regurgitant murmur
- Embolic events of unknown origin
- Sepsis of unknown origin
- Hematuria, glomerulonephritis and renal infarctions
- Fever
- Peripheral abscesses of unknown origin
Modified Duke’s Criteria for the Diagnosis of Infective Endocarditis

**Major Criteria**

- Blood culture/s positive for a characteristic organism or persistently positive for an unusual organism
- Echocardiographic evidence confirming the valvular lesions
- New valvular regurgitation

**Minor Criteria**

- Predisposing heart lesions or intravenous drug use
- Fever
- Vascular lesions such as Janeway lesions and splinter hemorrhages
- Microbiologic evidence including a single culture positive for an unusual organism

**Investigations**

- Blood cultures
- Echocardiogram

**Management**
Antibiotic treatment has to be commenced as soon as possible. For starting the empirical antibiotic therapy blood samples should be taken to be sent to cultures. Antibiotic therapy has to be continued for 4-6 weeks. The patient should respond to the antibiotics within the first 48 hours of their administration. The effectiveness of the therapy will be shown by the resolution of fever, decline in the level of serum markers of infection and relief of systemic symptoms. Surgical intervention is necessary when the patient does not respond to the antibiotic therapy.

What is Acute Endocarditis?

Acute endocarditis is typically caused by a highly virulent organism that infects a previously normal heart valve resulting in the rapid development of necrotizing and destructive lesions. The commonest causative agent isolated from heart valves that are affected by acute endocarditis is *Staphylococcus aureus*. Acute endocarditis is difficult to be cured with antibiotics alone and require surgical removal of the vegetations most of the time. Acute endocarditis is characterized by the sudden onset of fever, malaise, chills, and lastitude.

What is Subacute Endocarditis?

Subacute endocarditis is due to the infection of previously damaged cardiac valves by low virulent bacteria such as *Viridans streptococci*. There is only a minimal destruction of the cardiac valves.

The appearance of symptoms mentioned above usually happens few weeks after the initial infection. Subacute endocarditis can be treated only with antibiotics.
What is the Similarity Between Acute and Subacute Endocarditis?

- Valves of the heart are affected in both forms of endocarditis

What is the Difference Between Acute and Subacute Endocarditis?

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<tr>
<th>Acute Endocarditis vs Subacute Endocarditis</th>
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<th>Cause</th>
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<td>Acute endocarditis is caused by organisms with a high virulence.</td>
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<tr>
<th>Affected Valves</th>
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<td>Previously normal cardiac valves are also affected.</td>
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<th>Therapy</th>
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<td>Antibiotic therapy alone is not sufficient to cure acute endocarditis. Surgical removal of the vegetation is necessary to have a successful outcome.</td>
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<th>Symptoms</th>
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Summary - Acute vs Subacute Endocarditis

Acute endocarditis is typically caused by a highly virulent organism that infects a previously normal heart valve resulting in the rapid development of necrotizing and destructive lesions. On the other hand, subacute endocarditis is due to the infection of previously damaged cardiac valves by low virulent bacteria such as *Viridans streptococci*. The therapy for acute endocarditis requires both antibiotic treatment and surgical intervention, while subacute endocarditis can be cured with antibiotic therapy alone.
valves by low virulent bacteria such as *Viridans streptococci*. In acute endocarditis, there is a sudden onset of symptoms unlike in subacute form of the disease in which case the development of symptoms takes at least few weeks.

Reference:


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