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Endocarditis - children

The inner lining of the heart chambers and heart valves is called the endocardium. Endocarditis occurs when this tissue becomes swollen or inflamed, most often due to infection of one of the heart valves.

Causes

Endocarditis occurs when germs enter the bloodstream and then travel to the heart.

- Bacterial infection is the most common cause
- Fungal infections are much more rare
- In some cases, no germs can be found after testing

Endocarditis can involve the heart muscle, heart valves, or lining of the heart. Children with endocarditis may have an underlying condition such as:

- Birth defect of the heart
- Damaged or abnormal heart valve
- New heart valve after surgery

The risk is higher in children who have a history of heart surgery, which can leave rough areas in the lining of the heart chambers.

This makes it easier for bacteria to stick to the lining.

Germs may enter the bloodstream:

- By way of a central venous access line that is in place
- During dental surgery
- During other surgeries or minor procedures to the airways and lungs, urinary tract, infected skin, or bones and muscles
- Migration of bacteria from the bowel, mouth, or throat

Symptoms

Symptoms of endocarditis may develop slowly or suddenly.

Fever, chills, and sweating are frequent symptoms. These sometimes can:

- Be present for days before any other symptoms appear
- Come and go, or be more noticeable at nighttime

Other symptoms may include:

- Tiredness
- Weakness
- Joint pain
- Muscle pain
- Trouble breathing
- Weight loss
- Loss of appetite

Neurological problems, such as seizures and disturbed mental status

Signs of endocarditis can also include:

- Small bleeding areas under the nails (splinter hemorrhages)
- Red, painless skin spots on the palms and soles (Janeway lesions)
- Red, painful nodules in the pads of the fingers and toes (Osler nodes)
- Shortness of breath
- Swelling of feet, legs, abdomen

Exams and Tests

Your child's health care provider may perform transthoracic echocardiography (TTE) to check for endocarditis in children age 10 years or younger. Transesophageal echocardiography (TEE) may also be used, particularly in older children.

Other tests may include:

- Blood culture to help identify the bacteria or fungus that is causing the infection
- Complete blood count (CBC)
- C-reactive protein (CRP) or erythrocyte sedimentation rate (ESR)

Treatment

Treatment for endocarditis depends upon the:

- Cause of the infection
- Child's age
- Severity of the symptoms

Your child will need to be in the hospital to receive antibiotics through a vein (IV). Blood cultures and tests will help the provider choose the best antibiotic.

Your child will need long-term antibiotic therapy.

- Your child will need this therapy for 4 to 8 weeks to fully kill all the bacteria from the heart chambers and valves.
- Antibiotic treatments started in the hospital will need to be continued at home once your child is stable.

Surgery to replace an infected heart valve may be needed when:

- Antibiotics don't work to treat the infection
- The infection is breaking off in little pieces, resulting in strokes
- Your child develops heart failure as a result of damaged heart valves
- The heart valve is badly damaged

Outlook (Prognosis)

Getting treatment for endocarditis right away improves the chances of clearing the infection and preventing complications.

Possible Complications

The possible complications of endocarditis in children are:

- Damage to the heart and heart valves
- Abscess in the heart muscle
- Infective clot in the coronary arteries
- Stroke, caused by small clots or pieces of the infection breaking off and traveling to the brain
- Spread of the infection to other parts of the body, such as the lungs

When to Contact a Medical Professional

Contact your child's provider if you notice the following symptoms during or after treatment:

- Blood in urine
- Chest pain
- Fatigue
- Fever
- Numbness
- Weakness
- Weight loss without a change in diet

Prevention

The American Heart Association recommends preventive antibiotics for children at risk for endocarditis, such as those with:

- Certain corrected or uncorrected birth defects of the heart
- Heart transplant and valve problems
- Man-made (prosthetic) heart valves
- A past history of endocarditis

These children should receive antibiotics when they have:

- Dental procedures that are likely to cause bleeding
- Procedures involving the breathing tract, the urinary tract, or the digestive tract
- Procedures on skin infections and soft tissue infections

Alternative Names

Valve infection - children; Staphylococcus aureus - endocarditis - children; Enterococcus - endocarditis- children; Streptococcus viridians - endocarditis - children; Candida - endocarditis - children; Bacterial endocarditis - children; Infective endocarditis - children; Congenital heart disease - endocarditis - children

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