

MSI-C Versus Kawasaki

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MIS-C (Multisystem inflammatory syndrome in children)

It is an inflammation of some body organs, as the heart, lungs, kidneys, gastrointestinal tract or the brain.

The cause is unclear until now, but it was documented that many children with MIS-C had COVID-19 infection, themselves or their close family members recently.

Symptoms of MIS-C

Symptoms are variable but might include: Fever, Vomiting, Diarrhea, abdominal pain, sometimes also Rash or conjunctivitis.

More severe symptoms

Respiratory distress, New confusion, disturbed level of consciousness, Severe abdominal pain or sometimes Cyanosis.

Diagnosis

Some children with MIS-C have antibodies against covid 19, which indicates recent infection with the virus.

Investigations:

- CBC.
- Inflammatory markers as CRP and ESR.

Other investigations according to the signs and symptoms include:

- Chest X-ray or CT scan.
- Abdominal ultrasound or CT scan.
- Echocardiogram.
- MRI Brain.

Differential diagnosis:

- COVID-19 infection.

- Kawasaki disease.
- Toxic shock syndrome.
- Sepsis.

Treatment:

1. Hospitalization.
2. Supportive care:
 - I.V Fluids, if there is dehydration.
 - Oxygen if there is respiratory distress or desaturation.
 - Antibiotics.
 - Steroid therapy.
 - Intravenous immunoglobulin (IVIG).
 - Inotropic support if in hypotensive shock.
 - Mechanical ventilator if needed.
 - Aspirin or Heparin, in case of the presence of a hyper-coagulability state.
 - ECMO might be needed in certain rare cases.

Kawasaki syndrome

It is an acute febrile illness, usually in children below 5 years, It is a form of vasculitis throughout the body.

The cause is unknown, but might be an abnormal response of the immune system of the body to an infection.

Clinical picture

1st phase:

- A fever, usually 39 c or more and lasts more than 5 days.
- Conjunctivitis, without discharge.
- Skin rash.
- Red, cracked mucus membranes of the mouth, strawberry tongue might be there as well.
- Swollen palms and soles.

- Lymphadenitis, usually cervical.

2nd phase:

- Peeling of the skin of the palms or soles or both.
- Arthralgia.
- Vomiting or diarrhea.
- Abdominal pain.

3rd phase:

- Improvement of signs and symptoms happens in this phase, but complications can happen in some cases.

Complications:

- Kawasaki disease is an important cause of acquired pediatric heart diseases, but this can be avoided by early and effective treatment.

Heart complications include:

- Aneurysm of the coronary arteries.
- Myocarditis.
- Cardiac valves affection.

Diagnosis:

- The diagnosis is mainly clinical, but CBC can reveal normochromic anaemia, and thrombocytosis in the second week, then thrombocytopenia might happen later if there is coronary affection.
- Acute phase reactants as CRP and ESR are high.
- Echocardiogram should be done if cardiac affection is suspected.

Differential diagnosis:

- MIS-C.
- Scarlet fever.
- sepsis.
- Stevens-Johnson syndrome.
- Measles.

- Juvenile rheumatoid arthritis.
- Toxic shock syndrome.

Treatment

- I.V immunoglobulin: can reduce the chance of occurrence of coronary artery problems.
- High doses of aspirin.

After the initial treatment

- When the acute illness is controlled and fever is subsided, low-dose aspirin should be given for six weeks, or for a longer period of time if coronary artery aneurysm developed, to avoid clotting.

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