



Central California Pediatrics

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Specialty information for physicians who treat children and expectant mothers.



Multisystem Inflammatory Syndrome in Children: What Ambulatory and ED Pediatricians Should Know

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Multisystem inflammatory syndrome in children (MIS-C) was first identified in April 2020. The condition has also been called pediatric inflammatory multisystem syndrome (PIMS).

Multisystem inflammatory syndrome in children (MIS-C) is a serious condition that appears to be linked to coronavirus disease 2019 (COVID-19) that occurs in children under 21 years of age. The syndrome is due to the body's immune response to the presence of the SARS-CoV-2 coronavirus and many children with MIS-C have a positive antibody test (COVID IgG). The inflammation seems to present in many children who may have had an asymptomatic or symptomatic COVID-19 infection weeks prior. It has also been seen during active COVID pneumonia.

The syndrome causes severe inflammation of the blood vessels in the heart, kidneys, digestive system, brain, skin, eyes and other organs. It is also thought to affect the coagulation pathway, leading to increased risk of blood clots. MIS-C or PIMS has features in common with Kawasaki disease as well as sepsis, which also causes inflammation of the blood vessels throughout the body.

We continue to see a steady increase in the number of patients with MIS-C at Valley Children's Hospital. Approximately 100 cases have been identified since June 2020, many of which required ICU admission.

In the U.S., more Black and Hispanic children have been diagnosed with MIS-C compared with children of other races and ethnic groups. This, in part, may explain the large number of cases in the Central Valley, where there is a large Hispanic population. Studies are needed to help determine why MIS-C affects these children more often than others.

Symptoms of MIS-C in Children

Patients have many of the below signs and symptoms that acutely present and worsen rapidly.

- Fever \geq 24 hours, usually >101 degrees
- Vomiting
- Diarrhea
- Abdominal pain
- Skin rash
- Feeling unusually tired
- Tachycardia and Tachypnea
- Red eyes
- Redness or swelling of the lips and tongue
- Redness or swelling of the hands or feet
- Headache, dizziness or lightheadedness
- Enlarged lymph nodes

Early diagnosis and treatment of patients with MIS-C is critical to prevent long-term complications. If a child has signs of MIS-C, it is recommended that they contact their pediatrician, and depending on clinical status they may be directed to the emergency department for further care. Early lab work has revealed markedly elevated inflammatory markers such as CRP, ESR, Ferritin, D-dimer and abnormal electrolytes, such as low sodium or albumin levels in the blood. These patients should have both COVID PCR and COVID IgG testing performed. Many patients have rapid hemodynamic instability and require intravenous fluid boluses as well as vasopressors for cardiogenic support. Additional treatments used include intravenous immunoglobulin (IVIG), systemic corticosteroids, as well as immunomodulatory drugs.

Our rheumatology and infectious disease specialists continue to be available to consult with healthcare providers with management of such cases.

Childhood vaccinations post - IVIG

The efficiency of live virus vaccines may decrease, if administered two weeks before administration of IVIG or in one to two months after administration of IVIG.

- MMR and varicella vaccines should be administered 11 months after administration of IVIG.
- If MMR and varicella vaccines have been administered within 14 days before IVIG, they should be repeated eight months after IVIG.

Oral polio vaccine, rotavirus, live influenza virus and all inactive vaccines are not affected by blood and blood product transfusions, so they can be administered in accordance with the typical vaccination schedule.

Upcoming CME Opportunities

Religious Beliefs and Practices Series – Buddhist Spirituality

Presented by Rev. Kaz Nakata,
PhD Candidate, MA, MBA

Thursday, March 4

Noon - 1 p.m.

LGBTQ+ Youth Lecture Series – Part 2 of 3

Presented by Dr. Adrianna Sosa
and Dr. Pritha Dewanjee

Thursday, March 11

Noon - 1 p.m.

LGBTQ+ Youth Lecture Series – Part 3 of 3

Presented by Dr. Adrianna Sosa
and Dr. Pritha Dewanjee

Thursday, March 25

Noon - 1 p.m.

Pediatric Symposium Virtual Education: Common Spinal Conditions

How to Treat and When to Refer

Presented by Dr. Kerry Loveland

Wednesday, March 31

12:15 p.m. - 1:15 p.m.



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