

MIS-C

Multisystem Inflammatory Syndrome in Children

Inpatient Quick Reference

Multisystem Inflammatory Syndrome in Children (MIS-C) is a newly recognized inflammatory syndrome presenting in pediatric patients, associated with current or recent SARS-CoV-2 infection. The pathogenesis is unclear, and the manifestations are still being clarified. At present, we know that children present with prolonged or persistent fever and a constellation of variable symptoms. They exhibit many markers of significant inflammation and are at high risk for cardiovascular collapse. This document accompanies the MIS-C protocol and is designed to be a quick reference guide when admitting these patients.

Initial evaluation criteria

T \geq 38.5C for at least 3 days, plus 2 or more concerning signs/symptoms
No other etiology identified

Concerning signs and symptoms

- Persistent fever \geq 38.5C
- Nausea, vomiting, diarrhea, abdominal pain (may mimic appendicitis)
- Rash
- Conjunctivitis
- Oral mucosal changes
- Headache, irritability
- Cough, shortness of breath
- Sore throat
- Chest pain
- Extremity swelling
- Lymphadenopathy

Initial lab testing and thresholds of concern:

- Absolute Lymphocyte Count $<$ 0.5 k/uL
- Albumin $<$ 2 g/dL
- CRP $>$ 10 mg/dL
- High Sensitivity Troponin $>$ 30 pg/mL
- Ferritin $>$ 350 ng/mL

Note: Work-up of alternative diagnoses should be concurrent with initial MIS-C evaluation

Additional Workup at Admission

SARS-CoV-2 swab	Procalcitonin	BNP
SARS-CoV-2 serologies	PT/PTT	LDH
RPAN	Fibrinogen	Cytokine Panel
Blood culture	ESR	EKG
UA w/ reflex urine culture	CK	Peripheral smear
VBG	Triglycerides	

- If ALC $<$ 0.5, order a Primary Immunodeficiency Flow Panel
- Consider obtaining IgG levels
- To order the peripheral smear:
Order "Peripheral Smear Morphology Review Request"
Type in "For Cellavision Review" in the additional comments box

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<u>Daily Labs</u>		
CBCPD	Ferritin	BNP, if elevated
CMP	PT/PTT	Troponin, if elevated
CRP	Fibrinogen	
ESR	D-Dimer	

Vital Signs Monitoring

- Continuous cardiorespiratory monitor (+/- telemetry)
- Continuous pulse oximetry
- Consider checking vital signs every 2-4 hours initially if there is any concern for instability

Special Pathogen Isolation

- Place patients in special pathogen precautions
- Negative pressure rooms are not needed unless patients are likely to undergo aerosol-generating procedures
- May discontinue precautions after 2 negative SARS-CoV-2 PCR swabs, at least 24 hours apart
- Most up-to-date recommendations regarding special pathogen precautions:
http://www.med.umich.edu/i/ice/resources/clinical_guidance.html

Disease Reporting

- Must report disease if there is sufficient evidence to make diagnosis of presumed MIS-C, based on the CDC case definition
- Notify IPE at pager 30032 or by email at UM-ICE@med.umich.edu to report the case. IPE will enter the case into the state database
- Please document in the chart once IPE has been notified

Subspecialty Consultations

- ID – Consult if there are clinical concerns
- Hematology – Consult if there is clinical concern for coagulopathy
- Rheumatology – Consult if there are clinical concerns
- Cardiology – Consult if abnormal cardiac screening labs, abnormal EKG, or abnormal echo, or if there is clinical concern for cardiac involvement

Antibiotic Coverage

- Only if concerned about concomitant bacterial infection or sepsis
- Empiric antibiotic coverage for sepsis per the institutional sepsis guidelines and should be tailored if a bacterial process is identified
- http://www.med.umich.edu/asp/pdf/pediatric_guidelines/Sepsis_PEDS.pdf

Increasing Level of Care

- Please have a lower threshold for calling an RRT on these patients; the PICU is aware this will occur