MYOPERICARDITIS EVALUATION

After COVID-19 Vaccination

Children's National

SYMPTOMS (Children, age 12 and older*)

• Chest Pain • Shortness of breath • Palpitations

EVALUATION

RECENT MRNA COVID19 VACCINE?[1]

NO

Routine Chest Pain Evaluation

History & Physical Exam

DIAGNOSIS

Referral to Pediatric Cardiology, if indicated[3]

YES

Check cardiac enzymes[2]

WNL

Close Clinical Follow-Up

Elevated

Consult Pediatric Cardiology

If no improvement in 24 hours

MANAGEMENT

Consider Admission (at discretion of physician)

EKG[5], Echo, SARS-CoV-2 Evaluation[6], Trend Enzymes

Normal

Supportive care (NSAID, rest)

Abnormal

Care concurrent with diagnostic and clinical findings

Pediatric Infectious Diseases consult and additional work-up[7]

All probable or confirmed cases of myopericarditis following COVID-19 vaccination should be reported to VAERS online by primary team/PCP[4] www.vaers.hhs.gov

FOOTNOTES

* Children <12 years of age may instead present with 2 or more of the following: irritability, vomiting, poor feeding, tachypnea or lethargy

[1] Recent vaccination = within past 7 days; ask if 1st or 2nd dose

[2] Cardiac Enzymes = Troponin I, CK-MB. May also add inflammatory markers such as ESR and CRP.

[3] Refer to "red flag cardiac symptoms": chest pain or fainting with exercise, pain that radiates to back, jaw, left arm or shoulder, pain worse when lying down or pain with fever.

Harahsheh et al. Promoting Judicious Primary Care Referral of Patients with Chest Pain to Cardiology: A Quality Improvement Initiative. Medical Decision Making. January 2021. https://www.cdc.gov/coronavirus/2019-ncov/vaccines/safety/myocarditis.html

[4] VAERS (Vaccine Adverse Event Reporting System) – all post-vaccination cases of myopericarditis should be reported to VAERS, regardless of clinician causality assessment; primary team/physician should report online at www.vaers.hhs.gov

[5] EKG abnormalities (per CDC working case definition) include ST elevation and T wave inversion or PR-depression (pericarditis)

[6] SARS-CoV-2 PCR from NP swab (if not previously performed) and SARS-CoV-2 nucleocapsid IgG antibody for previous infection (send out to Quest, "SARS-CoV-2 Antibody (IgG), Nucleocapsid, Qualitative", Test code 39749)

[7] Additional Infectious Diseases Evaluation (per CNH Myocarditis Protocol); obtain prior to any IVIg administration if possible

- Lyme Disease Screen with reflex confirmatory Western Blot
- EBV antibody panel (including VCA IgG, VCA IgM, EBNA IgG)
- EBV quantitative blood PCR
- CMV IgM and IgG
- CMV quantitative blood PCR
- Adenovirus blood PCR
- Enterovirus blood PCR
- Parechovirus blood PCR
- Parvovirus blood PCR
- HIV 1/2 Ag/Ab screen (4th gen)
- Multiplex Respiratory Pathogen PCR Panel
- Mycoplasma blood PCR

CDC CASE DEFINITION FOR ACUTE MYOCARDITIS

PROBABLE

Presence of ≥ 1 new or worsening clinical symptoms:
- Chest pain/pressure/discomfort
- Dyspnea/shortness of breath/pain with breathing
- Palpitations
- Syncope

OR **infant and children < 12 may instead present with ≥ 2 of the following symptoms:**
- Irritability
- Vomiting
- Poor feeding
- Tachypnea
- Lethargy

AND **≥ 1 new finding of:**
- Troponin > ULN
- Abnormal EKG findings, specifically:
  - ST-segment or T-wave abnormalities
  - Paroxysmal or sustained arrythmias
  - AV nodal conduction delays or IV conduction defects
- Abnormal cardiac function on echocardiogram
- cMRI findings consistent with myocarditis (Lake Louise criteria)

AND no other identifiable cause of the symptoms/finding

CONFIRMED

Presence of ≥ 1 new or worsening clinical symptoms:
- Chest pain/pressure/discomfort
- Dyspnea/shortness of breath/pain with breathing
- Palpitations
- Syncope

OR **infant and children < 12 may instead present with ≥ 2 of the following symptoms:**
- Irritability
- Vomiting
- Poor feeding
- Tachypnea
- Lethargy

AND Histopathologic confirmation of myocarditis

OR Troponin > ULN PLUS cMRI findings consistent with myocarditis (Dallas criteria)

AND no other identifiable cause of symptoms/findings

CDC CASE DEFINITION FOR ACUTE PERICARDITIS

Presence of ≥ 2 new or worsening of the following clinical features:
- Acute chest pain
- Typically worse when lying down, with deep inspiration or with cough and relieved by sitting up/leaning forward
- Pericardial rub on exam
- New ST-elevation or PR-depression on EKG
- New or worsening pericardial effusion on echocardiogram or MRI

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For questions regarding this algorithm, please contact
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