**Myocarditis Brighton Collaboration Case Definition**

*Early Draft Release Under Brighton’s Pandemic Emergency Response Process*

(Click link below to register for frequent updates and to provide comments to help improve the draft case definition)

https://brightoncollaboration.us/myocarditis-case-definition-update/

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**Myocarditis Level of Certainty - 1 (Definitive Case)**

<table>
<thead>
<tr>
<th>Histopathologic examination of myocardial tissue (autopsy or endomyocardial biopsy) showed myocardial inflammation</th>
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<tbody>
<tr>
<td>OR</td>
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<tr>
<td>Elevated myocardial biomarkers (at least 1 of the findings below)</td>
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<tr>
<td>- Troponin T</td>
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<tr>
<td>- Troponin I</td>
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<td>AND</td>
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<tr>
<td>Abnormal Imaging study</td>
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<tr>
<td>Abnormal Cardiac Magnetic Resonance Study (at least 1 of the findings below)</td>
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<td>- Edema on T2 weighted study, typically patchy in nature</td>
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<tr>
<td>- Late gadolinium enhancement on T1 weighted study with an increased enhancement ratio between myocardial and skeletal muscle typically involving at least one non-ischemic regional distribution with recovery (myocyte injury).</td>
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<td>OR</td>
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<tr>
<td>Abnormal Echocardiogram (at least 1 of the findings below)</td>
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<td>- New focal or diffuse left or right ventricular function abnormalities (eg. decreased ejection fraction)</td>
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<td>- Segmental wall motion abnormalities</td>
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<tr>
<td>- Global systolic or diastolic function depression/abnormality</td>
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<tr>
<td>- Ventricular dilation</td>
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<tr>
<td>- Wall thickness change</td>
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<tr>
<td>- Intracavitary thrombi</td>
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</tbody>
</table>
**Clinical Symptoms**

**Cardiac Symptoms (at least 1 finding below)**
- Acute chest pain or pressure
- Palpitations
- Dyspnea after exercise or lying down
- Diaphoresis
- Sudden death

**OR**

**Non-Specific Symptoms (at least 2 findings below)**
- Fatigue
- Gastrointestinal symptoms (nausea, vomiting, abdominal pain)
- Dizziness/Syncope
- Edema
- Cough

**OR**

**Infants and young children (at least 2 findings below)**
- Irritability
- Vomiting
- Poor feeding
- Tachypnea
- Lethargy

**AND**

**Testing supporting diagnosis (Biomarkers, ECHO, and EKG)**

**Elevated myocardial biomarkers (at least 1 of the findings below)**
- Troponin T
- Troponin I
- CK Myocardial band

**OR**

**Echocardiogram (ECHO) abnormalities (at least 1 of the findings below)**
- New focal or diffuse left or right ventricular function abnormalities (e.g., decreased ejection fraction)
- Segmental wall motion abnormalities
- Global systolic or diastolic function depression/abnormality
- Ventricular dilation
- Wall thickness change
- Intracavitary thrombi

**OR**

**Electrocardiogram (EKG) abnormalities (at least 1 of the findings below)**
- ST-segment or T-wave abnormalities (elevation or inversion)
- Paroxysmal or sustained atrial or ventricular arrhythmias (premature atrial or ventricular beats, and/or supraventricular or ventricular tachycardia, interventricular conduction delay, abnormal Q waves, low voltages)
- AV nodal conduction delays or intraventricular conduction defects (atrioventricular block (grade I-III), new bundle branch block)
- Continuous ambulatory electrocardiographic monitoring that detects frequent atrial or ventricular ectopy

**AND**

**NO Alternative etiology for symptoms**
Clinical Symptoms

Cardiac symptoms (at least 1 finding below)
- Acute chest pain or pressure
- Palpitations
- Dyspnea after exercise or lying down
- Diaphoresis
- Sudden death

OR

Non-Specific Symptoms (at least 2 findings below)
- Fatigue
- Abdominal pain
- Dizziness/syncope
- Edema
- Cough

OR

Infants/Young children (at least 2 findings below)
- Irritability
- Vomiting
- Poor feeding
- Tachypnea
- Lethargy

AND

Biomarkers supporting evidence of inflammation (at least 1 finding below)
- Elevated CRP
- Elevated ESR
- Elevated D-Dimer

AND

Non-Specific Electrocardiogram (EKG) Abnormalities (at least 1 finding below)
- ST-segment or T-wave abnormalities (elevation or inversion)
- PAC
- PVC

AND

NO Alternative etiology for symptoms