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Complex Clinical Cases

FULMINANT MYOCARDITIS IN COVID-19 WITH RAPID RECOVERY OF SYSTOLIC FUNCTION

Poster Contributions

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Session Title: Complex Clinical Cases: FIT Covid-19 2

Abstract Category: FIT: Coronavirus Disease (COVID-19)

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Background: The pathophysiology of COVID-19 myopericarditis is related to a combination of direct viral injury and host immune response. It is speculated that steroids pose a risk in the setting of active viral replication, but optimal management remains poorly understood.^{1,2}

Case: A 23-year-old male with mild, intermittent asthma presented to the emergency room with fever and rash for 3 days. His temperature was 39.3 degrees Celsius, heart rate 119 beats/minute, blood pressure 123/84 mmHg and oxygen saturation 100% on room air. He had an erythematous, macular rash on exam consistent with a viral exanthem.

Decision-making: He was admitted and found to have a positive polymerase chain reaction (PCR) for SARS-CoV-2. On hospital day two, he developed pleuritic chest pain, hypotension and hypoxia requiring transfer to the intensive care unit. Electrocardiogram showed diffuse ST elevation. Chest x-ray demonstrated bilateral pleural effusions and pulmonary edema. Transthoracic echocardiogram (TTE) showed severely reduced biventricular systolic function, left ventricular ejection fraction (LVEF) of 20% and global left ventricular hypokinesis. Troponin peaked at 47 ng/mL, BNP 2,142 pg/mL, CRP >240 mg/L and d-dimer 6,983 ng/mL. Viral PCR was negative for other respiratory viruses. He was started on dobutamine for cardiogenic shock attributed to COVID-19 myopericarditis. Given the presence of elevated CRP, pericardial inflammation and hypoxia, he was started on dexamethasone to mitigate the inflammatory response. He was also started on remdesivir given concern for worsening COVID-19 disease. After three days of steroid therapy, he was successfully weaned from inotropes and supplemental oxygen. TTE was repeated nine days later and demonstrated recovery of his LVEF to 55%. He was discharged home with goal-directed therapy and anticoagulation for elevated d-dimer. Ischemic evaluation was deferred given the rapid recovery of his ejection fraction.

Conclusion: We present a case of COVID-19 myopericarditis that was managed with dexamethasone and dobutamine, resulting in recovery of systolic function after nine days. Further study is needed to optimize management of COVID-19 myopericarditis.