



A case report of COVID-19 related fulminant myocarditis requiring mechanical circulatory support

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Introduction: Fulminant myocarditis is defined as myocarditis with new-onset severe heart failure that requires the use of inotropes or mechanical circulatory support¹, which arises quickly and has a high mortality rate. The purpose of this study is to describe a case of fulminant myocarditis induced by a COVID-19 infection.

Case report: On September 25, 2023, a 41-year-old patient with minor symptoms and a fever tested positive for SARS-CoV-2. Prior to hospitalization, the patient was being treated for scleroderma, which was in remission and had been ruled out as a probable cause of the new disease. The patient is admitted to cardiology the next day due to deteriorating conditions, and methylprednisolone and azithromycin medication are initiated. Due to the disease's progression, hypotension, and an increase in lactate, she was transferred to the critical care unit on the same day with the use of inotropes. Due to her continued poor general state and the requirement for mechanical circulatory support, the patient was transported to University Hospital Center Zagreb's Institute for Intensive Cardiac Treatment, Arrhythmias, and Transplant Cardiology in the evening. Upon admission, she is aware, slightly fatigued, with a nasal catheter providing 6L/min of oxygen, cold sweating, tachycardia, on a continuous infusion of dobutamine and milrinone, and receiving parenteral corticosteroids and immunoglobulins as directed by the immunologist. Furthermore, the worsening of heart function (EF 15-20%) is monitored, and on the fifth day of hospitalization, Impella CP, mechanical circulatory assistance for the left ventricle, is implanted via a transfemoral route. The third cycle of immunoglobulin and remdesivir is provided for 10 days, and the results demonstrate a decrease in NT-proBNP and troponin levels, as well as a recovery of the left ventricular ejection fraction to 63%. On the seventh day following implantation, Impella CP was successfully removed. On the 18th day of hospitalization, the patient was discharged home in good general health, and at the one-month follow-up examination, she reported full regression of the signs and symptoms of fulminant myocarditis.

Conclusion: The role of the Impella CP device is to ensure the hemodynamic stability of the patient and sustain it until permanent mechanical circulation support, heart transplantation or recovery. To achieve positive outcomes of treatment, it is necessary to monitor the latest insights and guidelines based on evidence and the multidisciplinary approach in which every member of the team (cardiologists, surgeons, nurses, perfusionists, physiotherapists) plays a responsible role.

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LITERATURE

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