

## Fulminant myocarditis – a case report

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**Introduction:** Myocarditis is an inflammatory disease of the heart muscle, which leads to the degeneration and/or necrosis of myocytes, caused by infectious and non-infectious agents. It is classified as acute, fulminant, chronic active or chronic persistent myocarditis.<sup>1</sup>

**Case report:** In January 2023, a 21-year-old patient with acute heart failure due to fulminant myocarditis was transferred from a cooperating institution to the University Hospital Centre Zagreb. Transthoracic echocardiography shows reduced global left ventricular systolic (ejection fraction 20%). Based on anamnestic data collected from medical records and heteroanamnestically, without comorbidities. The patient is admitted sedated, intubated, mechanically ventilated, with peripheral saturation 80%, and receiving continuous inotropic and mechanical circulatory support (V-A ECMO). A chest X-ray shows right-sided pneumonia with the possible development of the "ECMO lungs". Catheterization of the right side of the heart verified elevated left ventricle filling pressure. To unload left ventricle, a transvalvular microaxial support (Impella CP) was implanted. After the interventions, the native function of the heart is restored. Due to further respiratory failure, the existing V-A ECMO support is reconfigured to V-V ECMO support. After 158 hours of mechanical circulatory support, recovery of hemodynamic and respiratory status is monitored, and the patient is successfully weaned from mechanical circulatory support. Further weaning of mechanical ventilation is followed by spontaneous respirations, extubation was performed, and the initiation of high oxygen flow therapy, ensuring the patient's respiratory sufficiency. For further treatment, the patient is transferred to the post-intensive care unit, hemodynamically and rhythmologically stable, mobilized, and respiratory sufficient with minimal oxygen support via a nasal catheter. Along with the titration of heart failure and anti-inflammatory therapy, the improvement of the general condition is monitored. Magnetic resonance imaging of the heart describes the recovery of heart function with a left ventricular ejection fraction of 57%. The patient is discharged after 25 days of hospitalization, in good condition. Further ambulatory controls are followed by almost complete normalization of cardiac biomarkers with preserved global systolic function of the left ventricle.

**Conclusion:** Myocarditis is an inflammation of the heart muscle caused by infectious or non-infectious agents. The clinical presentation of the patient depends on the degree of myocardial damage. The diagnosis is based on findings of biochemical markers of myocardial necrosis, immunological tests, cardiac magnetic resonance, and endomyocardial biopsy. Therapy is symptomatic and treatment aims to address complications. Patients often require intensive cardiac care and a multidisciplinary approach in which nurses and technicians play an important role.<sup>1,2</sup>

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### LITERATURE

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