

# Influenza B-related myocarditis requiring VA ECMO and high dose corticosteroids

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Argomento: Caso clinico

## Background

Myocarditis is an inflammatory disease of myocardium representing a diagnostic-therapeutic challenge. Clinical presentation and evolution may range from mild self-limiting syndromes to a life-threatening condition. Myocarditis due to influenza B virus infection is rare in adults and generally mild. We report herein an influenza B-related fulminant myocarditis in a young woman.

## Clinical Case

A 29-year-old woman admitted to ER for repeated syncope and flu-like symptoms (blood pressure 90/60 mmHg, heart rate 125 bpm, SpO<sub>2</sub> 100% on room air). The echocardiography showed severe biventricular dysfunction (LV EF 10%, RV TAPSE 7 mm), significant increase in myocardial wall thickness and hyperechogenicity and circumferential pericardial effusion. A jugular central line was placed (SvO<sub>2</sub> 40%, lactate 8 mmol/L) and despite norepinephrine (0.25 mcg/kg/min) and epinephrine (0.15 mcg/kg/min) the patient rapidly deteriorated. An IABP was placed and an endomyocardial biopsy (EBM) was performed, along with blood samples, to confirm the suspicion of fulminant myocarditis; peak cardiac troponin I was 17.52 ng/ml on day 1.

The cardiac catheterization showed CI 1 L/min/m<sup>2</sup>, PCWP 16 mmHg, RAP 12 mmHg, lactate 10 mmol/L despite maximal medical treatment, therefore femoro-femoral veno-arterial extracorporeal membrane oxygenation (VA-ECMO) was placed in awake and not-intubated patient. EBM showed interstitial fibrosis and oedema with necrosis and thrombosis of small intra-myocardial vessels. Among all microbiological investigations, only high viral load of influenza B virus (164,700 copies/mL) was detected in nasal swab.

High-dose steroid therapy (methylprednisolone 1 g/die for 3 days) and antiviral therapy (oseltamivir) were started with an immediate reduction of myocardial oedema and an improvement of biventricular systolic function. After 8 days, the patient was successfully weaned from VA-ECMO and IABP.

## **Conclusions**

Myocarditis may represent a life threatening condition. Beside the use of mechanical support as bridge to recovery, corticosteroids represent an effective treatment to reverse the myocardial oedema and improve cardiac function.