

Dobutamine/epinephrine/vasopressin

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Myocardial injury and lack of efficacy : case report

A man in his 40's developed myocardial injury during treatment with epinephrine. Additionally, he exhibited lack of efficacy during treatment with dobutamine, vasopressin and epinephrine for cardiogenic shock.

The man, who had hypertension presented with 2 weeks of dyspnoea on exertion, intermittent fevers and cough. He did not have palpitations, dizziness, chest pain or contacts with a known acute illness. Initial laboratory values were evaluated. SARS-CoV-2 nasal swab was found to be negative. Soon after his admission, he became dyspnoeic and diaphoretic. His vital signs were again evaluated. Transthoracic echocardiogram (TTE) was consistent with new-onset biventricular heart failure. Due to concern of cardiogenic shock, he was started on continuous infusions of dobutamine, vasopressin and epinephrine [*dosages not stated*]. Despite treatment, he remained hypotensive with escalating dosages. Thereafter, a pulmonary artery catheter was inserted and was consistent with combined vasodilatory and cardiogenic shock. He underwent venoarterial extracorporeal membrane oxygenation (VA-ECMO) placement. He developed worsening hypoxaemic respiratory failure and pulmonary oedema. Therefore, he underwent Impella cardiac power placement. Infectious serologies were negative. A SARS-CoV-2 immunoglobulin G (Ig) nucleocapsid antibody was made, which was found to be positive. An endomyocardial biopsy showed occasional neutrophils and rare eosinophils consistent with catecholamine i.e. epinephrine-induced myocardial injury [*duration of treatment to reaction onset not stated*]. He had positive SARS-CoV-2 antibodies, and lack of other infectious aetiologies, multisystem inflammatory syndrome in adults (MIS-A) was considered.

The man was treated with one dose of IV immune globulin [IVIg] and IV methylprednisolone, but was discontinued. By the day 5 of admission, his haemodynamics were normalised. Thereafter, he underwent successful VA-ECMO decannulation. On day 6, Impella catheter was removed. On day 10, he underwent repeat TTE, which showed complete normalisation of biventricular function. On day 11, he was discharged with heart failure and infectious disease follow-up.