Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Complex Clinical Cases

THE USE OF VENO-ARTERIAL ECMO IN A COVID-19 PATIENT WITH CARDIOGENIC SHOCK: A LIFE WAS SAVED

Poster Contributions
For exact presentation time, refer to the online ACC.22 Program Planner at https://www.abstractsonline.com/pp8/#!/10461

Session Title: Complex Clinical Cases: FIT Flatboard Poster Selections -- Covid
Abstract Category: FIT: Coronavirus Disease (COVID-19)

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Background: COVID -19 infection has been associated with cardiogenic shock and circulatory failure with and without a definite diagnosis of myocarditis. The use of advanced mechanical circulatory support (MCS) such as Impella or VA ECMO is reserved for selected cases with severe cardiac involvement.

Case: A 29 year old patient with history of obesity (BMI 40 kg/m^2), hypertension and diabetes mellitus presented with increasing dyspnea, chest pressure, arthralgias and lethargy 2 weeks after being diagnosed with COVID-19 infection. At the ED, she was hypotensive, tachycardic and in respiratory distress. Her EKG showed sinus tachycardia. Chest x-ray was grossly normal. Laboratory data revealed lactic acid of 2.4 and elevated D-Dimer of 606. Troponin and white cell count were within normal limits. A CT angiogram of the chest showed no pulmonary embolism. The patient was treated with up to 3 liters of IV fluids for her low blood pressure and subsequently developed respiratory distress requiring endotracheal intubation. Her blood pressure remained very low down to 51/23 mmHg despite increasing doses of multiple vasopressors including Norepinephrine, Dopamine, Epinephrine, Vasopressin and phenylephrine. A transthoracic echo showed severely reduced left ventricular ejection fraction (LVEF 10%).

Decision-making: The patient underwent emergent Impella CP placement and a coronary angiogram that revealed normal coronaries. The patient continued to be in refractory shock with worsening end-organ perfusion in terms of developing renal and hepatic failure and severe acidemia. The decision was made to proceed with VA ECMO and Impella CP was continued for left ventricular venting. MCS was complicated by groin bleeding and was treated with transfusion of blood products. MCS was successfully weaned and ECMO was eventually decannulated on day 7. The patient was started on guideline directed medical therapy for heart failure. She was discharged from the hospital and her LVEF fully recovered to 55-60%.

Conclusion: VA ECMO can provide a great support for COVID-19 patients with severe cardiac involvement such as patients with cardiogenic shock and serves as a bridge to complete recovery.