Early VA-ECMO support for cardiogenic shock in sepsis-induced cardiomyopathy due to pneumococcal pneumonia: a case report.

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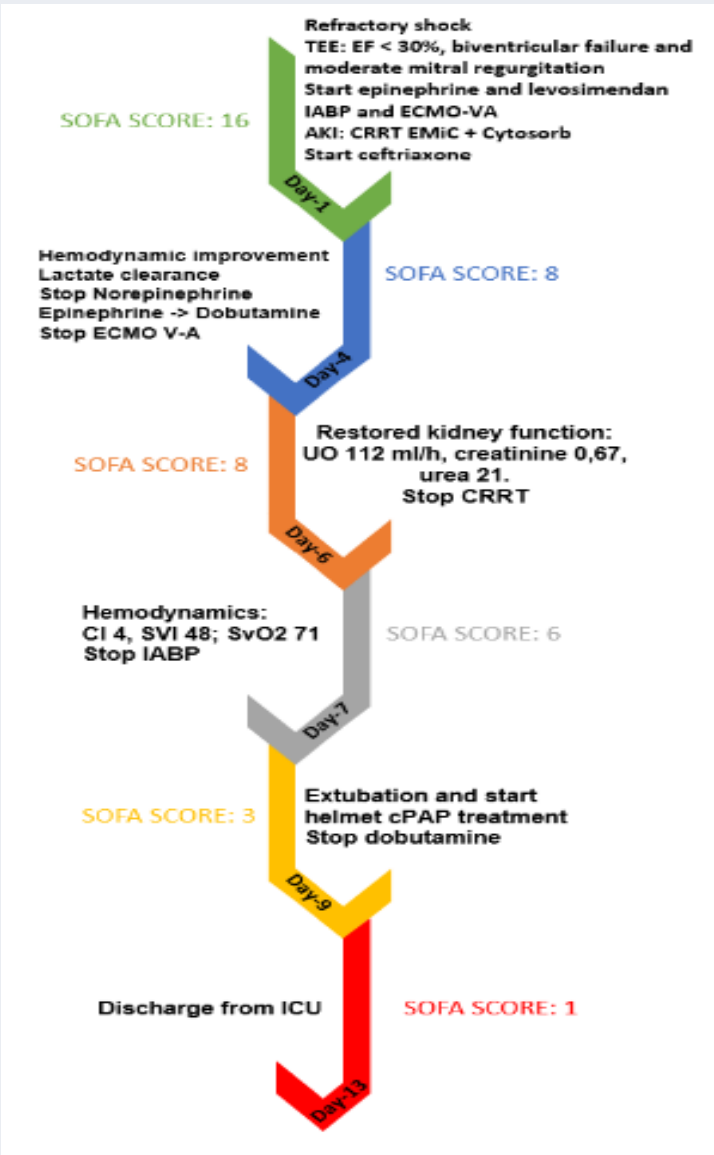
Background

Cardiogenic shock associated with sepsis-induced cardiomyopathy (SCM) decreases the survival of septic patients [1].
We describe a patient with SCM (due to CAP) treated with early mechanical circulatory support (MCS), to underline the advantages of the early initiation of MCS in SCM.

Case presentation

A 48-year-old man with no clinical history was transferred to our ICU for septic shock and left lobar pneumonia. Levofloxacin, mechanical ventilation, fluid resuscitation and vasopressor support were initiated before transfer. In ICU, he needed increasing doses of vasopressors for refractory hypotension. A pulmonary artery catheter and echocardiographic monitoring were daily used.

Clinical course



Haemodynamic parameters (CI 2.2 l/min/m^2, SVI 18 ml/m^2, SVR 850 dyn·s/cm^{-5}) suggested SCM with cardiac shock; it was confirmed by echocardiography (EF < 30%, biventricular failure and moderate mitral regurgitation due to LV dilation), and epinephrine infusion was started. Ceftriaxone for confirmed pneumococcal pneumonia and CRRT for acute renal failure were immediately implemented. Because of refractory hypotension and increasing blood lactate, VA-ECMO and IABP support were started 12 hours after shock onset (SAVE score -5; SOFA score 16). Haemodynamics rapidly improved, blood lactate decreased, and he was successfully weaned from VA-ECMO on day-4. At the time of weaning from CRRT and IABP, his CI was 4 l/min/m^2 and SVI 48 ml/m^2, epinephrine was stopped on day-2 and all other vasoactive drugs on day-9. He was discharged from ICU on day-13 with restored cardiac, respiratory, and renal function.

Conclusion

SCM is usually considered a temporary and reversible phenomenon but has a high mortality rate. In our case, the patient was unresponsive to maximal pharmacological therapy at ICU admission, leading us to start early MCS. This allowed a faster improvement of clinical state in comparison with the literature data and avoided the consequences of low cardiac output on the outcome, while the sepsis-induced cardiomyopathy recovered and cardiac function was restored.

References: 1. L'Heureux M et al. Curr Cardiol Rep. 22:35, 2020.