ECMO bridging to CRTD in a patient with progressive rhythmogenic cardiogenic shock

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A 67 year-old male patient was admitted as an emergency to our ICU with refractory ventricular tachycardia (VT). Underlying diagnosis was a dilated cardiomyopathy with severely reduced left ventricular ejection fraction of 20%.

During the course Vt remained refractory to antiarrhythmic treatment and complexity and frequency of VT even increased throughout the initial 10 hrs. of treatment. Thus the patient developped manifest cardiogenic shock and veno-arterial ECMO was implanted percutaneously via femoral vessel access.

With supported and stabilized hemodynamics antiarrhythmic therapy could be optimized. With a subsequently increased level of Amiodarone in combination with Sotalol initially, later switched to Esmolol, the patient gained stability. On the next day a CRTD system was implanted.

With further stabilizitation of hemodynamics and improvement of heart rhythm the eCMO could be explanted on hospital day 4.

Intravenous therapy with sotalol could be weaned and amiodarone therapy was continued orally.

In case of hemodynamically relevant and complex ventricular arrhythmias ECMO support is a fast and effective tool to stabilize hemodynamics for a short intervall without further increase of inotropic agents that might even worsen the rhythm instability further. In addition by improved stability antiarrhytmic medication can be more effective and subsequent implant procedure or electrophysiological mapping and treatment can be performed under safe and elective circumstances.