The comparison of coronary flow during synchronized pulsatile and standard continuous flow extracorporeal life support in porcine model of cardiogenic shock

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Introduction

Synchronized Cardiac Assist (i-COR, Germany) is a new ECG-synchronized, pulsatile veno-arterial extracorporeal life support (ECLS), with increased blood flow during diastole and decreased flow during systole.

It offers a full circulatory support during cardiac arrest and circulatory support preserving left ventricular function during cardiogenic shock.
Aims and Methods

**Aims:**
- To compare the effect of pulsatile (P) and continuous (C) ECLS blood flow on coronary flow in cardiogenic shock

**Methods:**
- Eight female swine
- General anesthesia, artificial ventilation
- Veno-arterial ECLS (Synchronized Pulsatile Assist, i-COR, Germany)
- Coronary flow (CF) Doppler measurement (FloWire, Volcano, USA)
- Acute cardiogenic shock with signs of tissue hypoperfusion, induced by global myocardial hypoxia
Results

Coronary Flow

ECLS Flow (L/min)

%
Conclusion

Synchronized pulsatile ECLS improves coronary flow in comparison with standard continuous-flow ECLS in severe cardiogenic shock