Cardiogenic Shock: The Evolution of Patient and Device Selection for Acute Circulatory Support

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AHA SCIENTIFIC STATEMENT

Contemporary Management of Cardiogenic Shock
A Scientific Statement From the American Heart Association

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Three Objectives of Shock Care

1. Circulatory support
2. Ventricular unloading
3. Coronary perfusion
Integrated Shock Team

Fig. 2. Components of a cardiogenic shock team.
Figure 3. Inhospital survival rates as a function of shock onset to MCS implantation.
Figure 1. In-hospital mortality according to treatment strategy. Mortality varied significantly among 3 alternative primary treatment strategies in ST segment elevation acute myocardial infarction complicated by cardiogenic shock. CABG, coronary artery bypass graft; ECMO, extracorporeal membrane oxygenation; LVAD, left ventricular assist device; OHT, orthotopic heart transplantation; PCI, percutaneous coronary intervention. Modified from Tayara et al., with permission from Elsevier.
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THE BASICS: Preload, Afterload, Contractility, Diastole

Preload Changes

Afterload Changes
An alternate view shows the anatomic placement of inflow and outflow ports of different devices. There is a full range of devices and configurations to choose from.

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DISEASES AND THERAPEUTICS: CHF, VADs, ECMO, Valves, Shunts, Drugs

LVAD

ECMO

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Figure 1 Adult (A) Respiratory and (B) Cardiac ECMO runs by year with survival rate (from ELSO report 2016 www.elso.org).

Sorokin et al. Eur J Heart Failure 2017

Cooper LB et al., J Card Fail; 2016; 22:182-189
Integrated Shock Team

Fig. 2. Components of a cardiogenic shock team.


1. Early hemodynamic assessment
2. Early use of acute MCS devices
3. Identification of optimal door-to-support time
4. Appropriate acute MCS device selection
5. Early use of decongestive therapy (to reduce metabolic failure)
Thank You!