

DISCUSSION QUESTIONS

Main Session: Evaluation and Management of Cardiogenic Shock

Group 1: Early Identification and Initial Management

Moderator: R. Kataria

Members: C. Alviar; A. Arias-Mendoza; M. Jumean; M. Kurz; S. Koepke; R. Kovacs; G. Stevens

ACC Staff: A. Shinkar

1. When should one suspect cardiogenic shock in the emergency department versus in the hospital? What is the minimum required data to make a diagnosis of cardiogenic shock?
Key areas: a) Early clinical signs and symptoms - HF vs AMI-CS vs miscellaneous b) Minimum required laboratory markers of malperfusion in HF vs AMI-CS c) Early use of imaging modalities - CXR, POCUS
2. What are the best practices for creation and activation of shock teams depending on available expertise at a given hospital?
Key areas: a) Shock Team activators b) Stepwise activation c) Tailoring teams to available/on-site expertise (how?) d) Team Members involved
3. What should prompt the initiation and choice of vasoactive drugs and/or temporary mechanical circulatory support devices? What are the best practices for early and frequent reassessment of shock severity in the first 24 hours?
Key areas: a) Initial classification of shock severity b) Initial matching of a patient to the right drug or device - etiology, chronicity, OHCA, exit strategy, others c) Reassessment of shock severity (frequency and components)
4. When should you contact and transfer patients in cardiogenic shock to an advanced shock center?
Key areas: a) Which patients b) Timing c) Data needed d) Futility

Group 2: Hemodynamics

Moderator: S. Sinha

Members: D. Berg; M.J. Farr; J. Hernandez-Montfort; M. Kanwar; J. Katz; C. Simonton; T. Valley

ACC Staff: A. Dearborn; E. Spoehr

1. For which cardiogenic shock patients does a PA catheter potentially provide the greatest benefit as a diagnostic instrument? AMI-CS vs HF-CS patients? Which SCAI Stages?
Key areas: a) AMI-CS vs HF-CS b) SCAI Stages c) Congestive Profile (upon PAC placement): RV vs LV vs BiV heart failure

2. When should a PA catheter be placed in cardiogenic shock patients? When should it not be placed? Is earlier truly better?

Key areas: a) Timing relative to shock onset b) Indications c) Contraindications

3. What are the potential risks and benefits of using noninvasive hemodynamic monitoring in cardiogenic shock patients? Do these emerging modalities provide a reasonable surrogate for invasive hemodynamics?

Key areas: a) RA/PCWP, PAPI, RVSWI b) CPO/CPI c) SVR d) Aortic pulsatility index and other novel hemodynamic parameters

4. Which hemodynamic parameters provide the greatest prognostic significance in cardiogenic shock patients?

Key areas: a) RA/PCWP, PAPI, RVSWI b) CPO/CPI c) SVR d) Aortic pulsatility index and other novel hemodynamic parameters

Group 3: Pharmacology Management

Moderator: R. Roswell

Members: T. Ahuja; S. Dickinson; P. Duvvuri; A. Mebazaa; M. Mythen; M. Solomon; S. Van Diepen

ACC Staff: M. Velasquez

1. Is there a first line pressor for patients with cardiogenic shock?

Key areas: a) Sub-phenotypes b) Contraindications

2. What guides the titration of vasoactive medications in cardiogenic shock?

Key areas: a) Hemodynamics b) Biomarkers c) Sub-phenotypes d) Preferable agents

3. Is there a preferred inodilator or vasodilator to be used in cardiogenic shock patients?

Key areas: a) Sub-phenotypes b) Contraindications (co-morbidities, hemodynamics)

4. When has pharmacological therapy failed?

Key areas: a) Hemodynamics/Biomarkers b) Escalation to MCS c) Futility

Group 4: Mechanical Circulatory Support

Moderator: N. Kapur

Members: W. Batchelor; A. Gage; S. Nathan; R. Patel; H. Thiele; V.K. Ton

ACC Staff: M. Reynolds

1. If/when should we consider Impella use for Stage C MI-CS?

Key areas: a) pre-PCI hemodynamic support with Impella b) Mitigating complications c) RCT vs registry-based data

2. If/when should we use VA-ECMO with CPR for out of hospital VT/VF cardiac arrest?

Key areas: a) eCPR b) Neuroprognostication b) Systems of care (i.e., mobile ECMO)

3. What should be first line temporary MCS therapy for patients with HF-CS and dilated cardiomyopathy (LVEDD>6cm) refractory to escalating vasopressors/inotropes (i.e., SCAI Stage C-D)?

Key areas: a) IABP vs Impella 5.5 b) Bridge to advanced therapies vs decision vs recovery strategies

4. If/when should LV venting be considered for patients requiring VA-ECMO?

Key areas: a) LV venting vs LV unloading b) Timing of Impella placement c) RCT vs registry-based data

Group 5: Critical Care

Moderator: D. Morrow

Members: S. Ash; M. Chonde; A. Elliott; S. Hollenberg; P. Rampersad; G. Tavazzi

ACC Staff: M. Poblete

1. What are the core elements and tempo of reassessment of patients with cardiogenic shock in the ICU?

Key areas: a) Core elements b) Tempo of reassessment c) Team members involved

2. What are best practices to mitigate complications of mechanical circulatory support devices in the ICU?

Key areas: Mitigating a) Bleeding b) Stroke c) Limb ischemia d) Hemolysis/hematologic e) Infection

3. What are best practices for sedation and positive pressure ventilation in patients with cardiogenic shock?

Key areas: a) Management of hemodynamic consequences of PPV/PEEP b) Sedation selection

4. What are best practices for weaning mechanical circulatory support?

Key areas: a) Key parameters b) Formal testing c) Team members d) Inability to wean/futility (time permitting)