Overall Conference Learning Objectives:

By the end of this conference, participants will be able to:

1. Evaluate the latest research, novel therapies, and emerging technologies, applying evidence-based approaches to the diagnosis and management of patients with cardiovascular disease
2. Integrate current evidence into secondary prevention and discuss systemic implementation
3. Apply evidence-based approaches and implement best practices, including team-based care strategies, in managing critically ill cardiac patients in the CCCU
4. Discuss the management of complex cases in critical cardiovascular care
5. Identify risk factors for cardiovascular disease and apply comprehensive management strategies to reduce the risk of acute events

Session-Specific Learning Objectives

Keynote: The Evolving Field of Critical Care

1. Describe the evolving patient acuity within cardiac intensive care units (CICUs)
2. Propose staffing and training models to optimize cardiac intensive care
3. Identify educational pathways that support trainee development and maintain competencies for practicing CICU physicians

Acute Care Stream:

How to survive in the modern cardiac critical care unit

1. Integrate evidence-based strategies for hemodynamic support, ventilation, sedation, and renal replacement therapy in critically ill cardiac patients
2. Demonstrate effective communication and team-based approaches to improve coordination and outcomes in the CICU
3. Implement early mobilization and rehabilitation protocols, address non-cardiac complications, and incorporate palliative care principles to enhance patient-centered care

Review of optimal management following post-cardiac arrest care

1. Apply the 2024 CCS/CANCARE/CAIC clinical practice update on optimal post-cardiac arrest and refractory cardiac arrest patient care

2. Integrate current neuro prognostication strategies and interventions to enhance neurological outcomes after cardiac arrest
3. Integrate evaluation criteria for targeted temperature management in post-cardiac arrest patients and adapt these strategies for implementation within their local practice setting

HOT clinical trials in cardiac critical care

1. Evaluate evidence from the DANGER-SHOCK trial and its implications for using microaxial flow pumps in acute MI-cardiogenic shock
2. Assess the indications, benefits, and limitations of VA-ECMO in managing acute MI-cardiogenic shock

Cardiogenic Shock

1. Describe the pathophysiology and hemodynamic profiles of cardiogenic shock and integrate evidence-based management strategies, including the use of pulmonary artery catheters and mechanical circulatory support devices
2. Implement a systematic approach to diagnosing and managing cardiogenic shock
3. Outline strategies for optimizing end-organ perfusion in patients
4. Evaluate the availability of cardiogenic shock resources across Canada, recognize local limitations, and discuss future directions for national care delivery

Challenging Cases

1. Identify complexities and implement management strategies for postpartum spontaneous coronary artery dissection
2. Integrate novel treatment approaches for immune-checkpoint inhibitor myocarditis and cardiogenic shock
3. Apply evidence-based interventions for acute high-risk pulmonary embolism and right ventricular failure

Clinical Controversies

1. Evaluate the role of liberal vs. conservative transfusion in acute myocardial infarction
2. Evaluate the role of upfront mechanical circulatory support vs. vasopressor/inotrope therapy in cardiogenic shock
3. Recognize the role and utility of cardiogenic shock teams
4. Recognize the role of randomized clinical trials and registries in cardiac critical care

Common Stream Sessions:

Management of an unstable STEMI patient

1. Recognize clinical parameters that should prompt the transfer of unstable STEMI patients to tertiary care
2. Perform a comprehensive assessment of critically ill STEMI patients to guide immediate management decisions
3. Integrate current evidence-based treatment strategies, including mechanical and pharmacological interventions, in the care of unstable STEMI patients

Management of ventricular arrhythmias in an unstable patient

1. Identify clinical parameters that should prompt the transfer of unstable ventricular arrhythmia patients to tertiary care
2. Apply evidence-based management strategies, including pharmacologic and device-based interventions, for critically ill patients with unstable ventricular arrhythmia
3. Evaluate the role of catheter ablation and emergency ganglion blockade in the treatment of unstable ventricular arrhythmia

Management of severe valvular disease in an unstable patient

1. Recognize clinical parameters that should prompt the transfer of patients with unstable valvular disease to tertiary care
2. Conduct a thorough assessment of critically ill patients with unstable valvular disease to inform urgent management steps
3. Incorporate the latest evidence-based treatment strategies in the management of patients with severe valvular disease

Clinical Care Stream

In-hospital heart failure care: How best to decongest and when to start GDMT

1. Differentiate acute heart failure phenotypes and initiate guideline-directed medical therapy during the index hospitalization
2. Evaluate patients for advanced heart failure therapies, including mechanical circulatory support and transplantation
3. Integrate management strategies for acute right ventricular failure into in-hospital heart failure care

Ambulatory heart failure care

1. Incorporate guideline-directed medical therapy sequencing and up-titration for HFrEF and apply emerging evidence for HFmEF and HFpEF therapies in the ambulatory setting
2. Evaluate the role of advanced medical and device-based therapies beyond the four pillars of heart failure care
3. Determine appropriate referral timing for advanced interventions

Amyloid heart disease

1. Describe the epidemiology and prognosis of amyloid heart disease
2. Assess current evidence for drug therapy in amyloid heart disease
3. Identify emerging therapies and upcoming clinical trials for amyloid heart disease

Emerging therapies post MI- Role of new anti-inflammatory and anti-fibrotic agents

1. Evaluate the current landscape of post-MI therapies and identify opportunities to improve patient outcomes
2. Describe the pathophysiological mechanisms of inflammation and adverse remodelling in post-MI cardiac recovery
3. Analyze the latest evidence on novel anti-inflammatory and adjunct therapies, including their mechanisms of action and clinical implications

Detection and management of risk factors in the CCU (25 mins)

1. Apply evidence-based recommendations for early, intensive lipid-lowering and evidence-based metabolic therapies in acute and stabilized patients in the CCU (medical expert, scholar)
2. Evaluate the impact of critical illness on lipid profiles, glycemia, inflammation, and fatty acid metabolism, and integrate these factors into comprehensive risk factor management (medical expert, scholar)
3. Compare lipid management strategies for critically ill CCU patients with those for stable cardiovascular patients to optimize outcomes (medical expert, leader)

Discharge protocols, recovery and rehab programs (30 mins)

1. Discuss components of effective ICU discharge planning, including patient assessment, clinical decision-making tools, and standardized protocols (medical expert, leader)
2. Compare traditional step-down approaches with direct-to-home discharges from the ICU to optimize patient outcomes and resource utilization (medical expert, scholar)
3. Analyze the safety and efficacy of very early hospital discharge protocols for low-risk STEMI patients, including the VEHD protocol (medical expert, scholar)
4. Discuss the implementation of post-CICU follow-up clinics and their role in supporting long-term patient recovery and rehabilitation (medical expert, health advocate)