

ISHLT ACADEMY
MASTER CLASS IN PEDIATRIC MECHANICAL CIRCULATORY SUPPORT

18 April, 2023 | 8:00 a.m. - 1:00 p.m. MDT | Denver, CO USA

ACADEMY CHAIRS

Holger Buchholz, MD, University of Alberta Hospital, Edmonton, AB Canada

Matthew O'Connor, MD, Children's Hospital of Philadelphia, Philadelphia, PA USA

Faculty

Antonio Amodeo, MD, Bambino Gesù Children's Hospital, Rome, Italy

Jennifer Conway, MD, FRCPC, Stollery Children's Hospital/University of Alberta, Edmonton, AB Canada

Pirooz Eghtesady, MD, St. Louis Children's Hospital, Washington University, St. Louis, MO USA

John Kim, MD, Children's Hospital of Colorado, University of Colorado, Aurora, CO USA

Annemarie Kraus, German Heart Center Berlin, Berlin, Germany

Martin Schweiger, MD, Children's Hospital Zurich, Zurich, Switzerland

Christina VanderPluym, MD, Boston Children's Hospital, Harvard School of Medicine, Boston, MA USA

Chet Villa MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH USA

Course Description

The Pediatrics MCS Master class will be focused on the use of mechanical circulatory support in pediatric scenarios. Children who require MCS represent a unique population with many different challenges (small size with a lack of devices scaled to size, common use in "failed" palliation of congenital heart defects, difficulties around anticoagulation) than adults who require MCS. Participants will be able to discuss and share best practices for device and patient selection. In addition, there will be discussion regarding the complications that can occur and the best ways to prevent and treat them.

Educational Goals

This course will focus on the use of mechanical circulatory support in the complex patient population of pediatrics. Content will cover the challenges that are faced in treating pediatric patients including lack of devices scaled for a smaller size, difficulties around anticoagulation and complications encountered.

Target Audience

This course is intended for members with higher levels of expertise (completed the core curriculum course on MCS and/or primary practice in MCS for 5 years or more). The target healthcare professionals would be pediatric cardiac surgeons, pediatric cardiologists, pediatric pulmonologists with pulmonary hypertension or advanced lung failure expertise, pediatric intensivists, pediatric anesthesiologists, pediatric ICU and cardiology nurses, perfusionists, VAD coordinators and VAD teams. While all members are invited to enroll, Master Classes are primarily designed to be of benefit for health care professionals who are beyond the training stages of their careers. This may be professionals who are seeking additional proficiencies, who wish to understand current areas of controversy, or who desire an update on the current advanced topics of the field. The information presented is intended to provide insights beyond core competencies established in the specialty.

Learning Objectives

At the conclusion of this meeting, participants will have improved competence and professional performance in their ability to:

1. Recognize bleeding and clotting challenges and the appropriate therapy.
2. Identify the unique challenges in congenital pediatric patients with MCS support.
3. Understand the potential complications and the management of pediatric patients during MCS support.
4. Identify the different mechanical support options for pediatric patients with Pulmonary Hypertension.

SCIENTIFIC PROGRAM SCHEDULE

8:00 – 8:05 a.m.

WELCOME AND OVERVIEW

Holger Buchholz, MD, University of Alberta Hospital, Edmonton, AB Canada

Matthew O'Connor, MD, Children's Hospital of Philadelphia, Philadelphia, PA USA

8:05 – 9:10 a.m.

SESSION 1: BLEEDING, CLOTTING AND BEYOND

Moderator: Christina VanderPluym, MD, Boston Children's Hospital, Harvard School of Med, Boston, MA USA

8:05 a.m.

Summary of the State of the Science of the Session Topic and Its Most Pressing Challenges

Christina VanderPluym, MD, Boston Children's Hospital, Harvard School of Medicine, Boston, MA USA

8:10 a.m.

CASE SCENARIO 1A: From the Clotting Cascade to the Complication Cascade – How a Small Bleed Leads to a Small Clot and a BIG Problem

Christina VanderPluym, MD, Boston Children's Hospital, Harvard School of Medicine, Boston, MA USA

Teaching/Discussion Points

1. What are common minor and major bleeding events in pediatric VAD patients?
2. How do you treat nuisance bleeding?
3. How to diagnose pump thrombosis and hemolysis?
4. Understand management strategies for hemolysis?

8:40 a.m.

CASE SCENARIO 1B: To Bleed or Not to Bleed! Managing Anti-Thrombotic Medications after VAD-Related Stroke

John Kim, MD, Children's Hospital of Colorado, University of Colorado, Aurora, CO USA

Teaching/Discussion Points

1. Understand the incidence and types of stroke in the current era of VAD support for children.
2. How is acute stroke managed in children with VADs in the outpatient and inpatient setting.
3. What are the pharmacological, interventional and surgical treatments of stroke in VAD patients?
4. When and what antithrombotic therapies are stopped and restarted after stroke?

9:10 – 10:15 a.m.

SESSION 2: THE COMPLEXITY IS REAL – CURRENT STRATEGIES TO SUPPORT PATIENTS WITH CONGENITAL HEART DISEASE

Moderator: Martin Schweiger, MD, Children's Hospital Zurich, Zurich, Switzerland

9:10 a.m.

Summary of the State of the Science of the Session Topic and Its Most Pressing Challenges

Martin Schweiger, MD, Children's Hospital Zurich, Zurich, Switzerland

9:15 a.m.

CASE SCENARIO B12A: MCS Support of Patients in Heart Failure after a Senning/Mustard Operation

Martin Schweiger, MD, Children's Hospital Zurich, Zurich, Switzerland

Teaching/Discussion Points

1. Understand the anatomy and physiology of patients suffering from heart failure related to atrial switch operation.
2. Learn different mechanical support strategies for this patient population.
3. Understand device selection in this patient population.
4. Discuss different implantation approaches for this patient population.

9:45 a.m.

CASE SCENARIO 2B: When the "Failing" Fontan Patient Needs MCS

Annemarie Kraus, German Heart Center Berlin, Berlin, Germany

Teaching/Discussion Points

1. Understand the physiology of "failing" Fontan patients and which patients may benefit from mechanical support.
2. Describe the physiology of mechanical support in Fontan patients.
3. Discuss different treatment options for "failing" Fontan patients.
4. Learn different device options for MCS for the "failing" Fontan patients.

10:15 – 10:45 a.m.

COFFEE BREAK

10:45 – 11:50 a.m.

SESSION 3: WHEN THINGS DON'T GO AS PLANNED!

Moderator: Jennifer Conway, MD, FRCPC, Stollery Children's Hospital/University of Alberta, Edmonton, Canada

10:45 a.m.

Summary of the State of the Science of the Session Topic and Its Most Pressing Challenges

Jennifer Conway, MD, FRCPC, Stollery Children's Hospital/University of Alberta, Edmonton, Canada

10:50 a.m.

CASE SCENARIO 3A: The Great Masquerade – Infection or is it Just the Pump?

Chet Villa, MD, Cincinnati Children's Hospital Medical Center, Cincinnati, OH, USA

Teaching/Discussion Points

1. What are the common infections in pediatric VAD patients.
2. What are some common problems seen in VAD patients secondary to inflammation.
3. How can inflammation and infection be differentiated?
4. Describe treatment strategies to target inflammation.
5. Are steroids a mainstay therapy now?

11:20 a.m.

CASE SCENARIO 3B: Missed but Not Forgotten – What is Happening to the Right Ventricle?

Jennifer Conway, MD, FRCPC, Stollery Children's Hospital/University of Alberta, Edmonton, Canada

Teaching/Discussion Points

1. Review predictors of RV failure following LVAD insertion.
2. Review the utility of RV scores in pediatrics.
3. Discuss recognition of RV failure post operatively.
4. Discuss prevention and management strategies for RV failure.

11:50 a.m. – 12:55 p.m.

SESSION 4: PUSHING THE ENVELOPE – NEW DEVICES, NEW STRATEGIES AND NEW GOALS

Moderator: Antonio Amodeo, MD, Bambino Gesù Children's Hospital, Rome, Italy

11:50 a.m.

Summary of the State of the Science of the Session Topic and Its Most Pressing Challenges

Antonio Amodeo, MD, Bambino Gesù Children's Hospital, Rome, Italy

11:55 a.m.

CASE SCENARIO 4A: A New Scenario – Continuous Flow VAD in Small Children – Should We Push for LV Recovery?

Antonio Amodeo, MD, Bambino Gesù Children's Hospital, Rome, Italy

Teaching/Discussion Points

1. Beyond the bridge to transplant: redefine new recovery strategies.
2. Short length of the disease and continuous flow LV unloading in small children.
3. How to assess the LV recovery in miniaturized continuous LVAD?

12:25 p.m.

CASE SCENARIO 4B: Lung Support in Pediatric Patients with Pulmonary Hypertension

Pirooz Eghtesady, MD, St. Louis Children's Hospital, Washington University, St. Louis, WA, USA

Teaching/Discussion Points

1. Device and Cannulation strategies for pulmonary support.
2. Possibilities related to long term support as bridge to transplant
3. Patient management and mobilization.
4. Discuss RV support and assessment of the RV prior to transplant.

12:55 – 1:00 p.m.

CLOSING REMARKS

Holger Buchholz, MD, University of Alberta Hospital, Edmonton, Canada

Matthew O'Connor, Children's Hospital of Philadelphia, Philadelphia, PA, USA

1:00 p.m.

ADJOURN