

**ISHLT ACADEMY
MASTER CLASS IN LUNG TRANSPLANTATION**

18 April, 2023 | 2:00 – 7:00 p.m. MDT | Denver, CO USA

AFTERNOON CLASS

ACADEMY CHAIRS

Shahid Husain, MD, MS, Toronto General Hospital, Toronto ON Canada

Deborah Levine, MD, Stanford University, Stanford, CA USA

Faculty:

Dan Chambers, MD, MBBS, MRCP, FRACP, The Prince Charles Hospital, Brisbane, QLD, Australia

Maria Crespo, MD, Hospital of the University of Pennsylvania, Philadelphia, PA USA

Marcelo Cypel, MD, Toronto General Hospital, Toronto, ON Canada

Joshua Diamond, MD, MSCE, University of Pennsylvania, Philadelphia, PA USA

Dima Kabbani, MD, MSc, University of Alberta, Edmonton, AB Canada

Aleem Siddique, MBBS, University of Nebraska Medical Center, Omaha, NE USA

Jonathan Singer, MD, University of California San Francisco, San Francisco, CA USA

Dirk Van Raemdonck, MD, PhD, University Hospitals Leuven, Leuven, Belgium

Course Description

Those who care for candidates and recipients of lung transplant recognize all-too-well that there are many nuanced situations that challenge even the most seasoned physician, surgeon, nurse, or pharmacist. In this Master Class, we will dive deeply into four of the most pressing and dynamic topics in lung transplantation, bringing expertise and opinion from some of the thought leaders in our field. We will tackle problems involving patients with complex infections, airway complications, frailty and emerging techniques in ex vivo lung perfusion and preservation.

The course is directed toward experienced clinicians who seek to refine their knowledge in these areas.

Educational Goals

This course will focus on the many nuanced situations that can challenge the even most seasoned member of those who make up the Lung Transplant Team. Content will include treating patients with complex infections, airway complications, frailty, and the emerging techniques in ex vivo lung perfusion and preservation.

Target Audience

This Master Course is intended for members with higher levels of expertise (completed the core curriculum course on lung transplantation and/or primary practice in lung transplantation > 5 years) who have managed patients with one or more of the topics intended for discussion.

Learning Objectives

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

1. Learn about existing and new tools that can be used to assess frailty, discuss how they might be applied to a candidate for a lung transplant, understand causes of frailty before and after transplant and best practice interventions to treat it.
2. Understand best practice for developing, utilizing, and maintaining a successful EVLP program. Also, the role of remote EVLP facilities.
3. Understand the emerging new techniques for cold storage of donor lungs.

SCIENTIFIC PROGRAM SCHEDULE

2:00 – 2:05 p.m.

WELCOME AND OVERVIEW

Shahid Husain, MD, MS, Toronto General Hospital, Toronto, ON Canada

Deborah Levine, MD, Stanford Hospital, Stanford, CA USA

2:05 – 3:10 p.m.

SESSION 1: COMPLEX INFECTIONS

Moderator: Dan Chambers, MD, MBBS, MRCP, FRACP, The Prince Charles Hospital, Brisbane, QLD, Australia

2:05 p.m.

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

Dan Chambers, MD, MBBS, MRCP, FRACP, The Prince Charles Hospital, Brisbane, QLD, Australia

2:10 p.m.

CASE SCENARIO A1: M. abscessus Infection Management Pre- and Post-transplant in a CF Patient

Dima Kabbani, MD, MSc, University of Alberta, Edmonton, AB Canada

Teaching/Discussion Points

1. Review the epidemiology and presentation of nontuberculous mycobacteria infections post lung transplantation.
2. Examine the evidence on impact of *M. abscessus* infection on patient survival and graft function.
3. Discuss new and old antimicrobials for treatment of *M. abscessus*, with emphasis on toxicity and drug-drug interactions.

2:40 p.m.

CASE SCENARIO A2: Mold Infection (non Aspergillus) in the Early Post-Lung Transplant Period (Scedosporium or Mucor or Fusarium): A Lung Transplant Recipient with Disseminated Infection

Shahid Husain, MD, MS, Toronto General Hospital, Toronto, ON Canada

Teaching/Discussion Points

1. Understand and appreciate the differences in the incidence, epidemiology, timing and clinical presentation of mold infections in the lung transplant recipient in the early and late post-transplant periods.
2. Recognize the risk factors for these different scenarios in order to plan reasonable prophylaxis.
3. Know that there are emerging molds thought to be related to prolonged systemic prophylaxis as well as emerging azole resistance.
4. Understand the role of non-microbiological tests in blood and bronchoalveolar lavage fluid for the diagnosis of mold infection.
5. Review the monitoring of therapeutic drug levels in prophylaxis and invasive disease treatment.
6. Examine new and old antifungal drugs, drug-drug interactions and novel drug administration (i.e. nebulized antifungal therapies).

3:10 – 4:15 p.m.

SESSION 2: AIRWAY COMPLICATIONS

Moderator: Aleem Siddique, MBBS, University of Nebraska Medical Center, Omaha, NE USA

3:10 p.m.

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

Aleem Siddique, MBBS, University of Nebraska Medical Center, Omaha, NE USA

3:15 p.m.

CASE SCENARIO B1: Bronchial Stenosis 5 Months after Lung Transplant in a Patient with Idiopathic Pulmonary Fibrosis

Maria Crespo, MD, Hospital of the University of Pennsylvania, Philadelphia, PA USA

Teaching/Discussion Points

1. Review the strengths and limitations of the current grading system as it pertains to bronchial stenosis and how it relates to previous systems.
2. Discuss the management of post-transplant airway infections.
3. Examine the role of ablative therapies for stenosis.
4. Discuss the role of mitomycin C, brachytherapy and stents in the management of bronchial stenosis.
5. Understand the options and indications for the use of airways stents in bronchial stenosis.

3:45 p.m.

CASE SCENARIO B2: Necrosis and Dehiscence of the Airway 4 Weeks after Lung Transplant in a Recipient with COPD

Aleem Siddique, MBBS, University of Nebraska Medical Center, Omaha, NE USA

Teaching/Discussion Points

1. Examine the risk factors for and the prevention of airway complications.
2. Review the strengths and limitations of the current grading system with regards to necrosis and dehiscence of the airway and how it relates to previous systems.
3. Discuss the management of airway complications including the role of stents and surgery for necrosis/dehiscence.

4:15 – 4:45 p.m.

COFFEE BREAK

4:45 – 5:50 p.m.

SESSION 3: FRAILITY

Moderator: Jonathan Singer, MD, University of California San Francisco, San Francisco, CA USA

4:45 p.m.

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

Jonathan Singer, MD, University of California San Francisco, San Francisco, CA USA

4:50 p.m.

CASE SCENARIO C1: A 66 year-old Patient with IPF Referred for Lung Transplantation

Jonathan Singer, MD, University of California San Francisco, San Francisco, CA USA

Teaching/Discussion Points

1. Discuss the concept of frailty affecting lung transplant candidates.
2. Review existing and brand-new transplant specific frailty measures.
 - SPPB, FFP, Frailty Index, Transplant Cumulative Deficits Frailty Index, CF-specific frailty index, Lung Transplant Frailty Scale
3. Tips and tricks for outpatient measurement, clinic measurement, in hospital measurement
4. Discuss how frailty results are used or should be used for clinical management, listing decisions, patient counseling.

5:20 p.m.

CASE SCENARIO C2: A 50 year-old Patient Who Develops Frailty after Transplant

Joshua Diamond, MD, University of Pennsylvania, Philadelphia, PA USA

Teaching/Discussion Points

1. Discuss implications of frailty after transplant
2. Review known and potential risk factors for its development.
3. If frailty is something to look for after transplant, when should we screen for it?
4. How can physical therapy, pulmonary rehabilitation, nutrition be used most effectively to treat frailty either before or after transplant.
5. Tips and tricks for treating frailty if patients cannot access hospital based pulmonary rehabilitation or physical therapy.

5:50 – 6:55 p.m.

SESSION 4: EMERGING TECHNIQUES IN EX VIVO LUNG PERFUSION AND PRESERVATION

Moderators: Marcelo Cypel, MD, Toronto General Hospital, Toronto, ON Canada

Dirk Van Raemdonck, MD, PhD, University Hospitals Leuven, Leuven, Belgium

5:50 p.m.

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

Marcelo Cypel, MD, Toronto General Hospital, Toronto, ON Canada

5:55 p.m.

CASE SCENARIO D1: A Case of a DCD Lung Transplantation after Static EVLP

Marcelo Cypel, MD, Toronto General Hospital, Toronto, ON Canada

Teaching/Discussion Points

1. Indications for EVLP in controlled and uncontrolled EVLP.
2. Importance of length of agonal phase in DCD.
3. Selected donors that appear otherwise unusable for lung transplantation can be recognized as usable after a period of EVLP.
4. An approach to monitoring donor lungs during perfusion on the Toronto system will be outlined through a specific case (compliance, pO₂, perfusate fluid loss, bronchoscopy appearance).
5. Tricks and surgical techniques reviewed.

6. Outcomes of EVLP utilization will be reviewed.
7. Review reasons that some programs can't get an EVLP program off the ground (manpower, finances, maintenance of routine of doing cases); Role of remote EVLP facilities.

6:25 p.m.

CASE SCENARIO D2: A Case of Donor Lungs Retrieved using Portable EVLP for Prolonged Preservation

Dirk Van Raemdonck, MD, PhD, University Hospitals Leuven, Leuven, Belgium

Teaching/Discussion Points

1. Possible indications for prolonging cross clamp time
2. Static versus portable EVLP for prolonged lung preservation
3. Continuous versus intermittent EVLP for prolonged preservation
4. Hypothermic versus normothermic prolonged lung preservation
5. Emerging new techniques for cold storage of donor lungs

6:55 – 7:00 p.m.

CLOSING REMARKS

Shahid Husain, MD, MS, Toronto General Hospital, Toronto, ON Canada

Deborah Levine, MD, Stanford Hospital, Stanford, CA USA

7:00 p.m.

ADJOURN