

ISHLT ACADEMY
CORE COMPETENCIES IN LUNG TRANSPLANTATION
26 APRIL 2022 | JOHN B. HYNES CONVENTION CENTER, BOSTON, MA, USA

Academy Chairs:

Chair: Cynthia Gries, MD, MSc, Advent Health Transplant Institute, Orlando, FL, USA

Co-Chair: Daniel Chambers, MBBS, MRCP, FRACP, MD, The Prince Charles Hospital, Brisbane, Australia

Co-Chair: Göran Dellgren, MD, PhD, Sahlgrenska University Hospital, Goteborg, Sweden

Faculty:

Saima Aslam, MD, University of California San Diego, La Jolla, CA, USA

Marie M. Budev, Do, MPH, The Cleveland Clinic, Cleveland, OH, USA

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

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

John Dark, MB, FRCS, Newcastle University, Newcastle upon Tyne, United Kingdom

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

Andrew J. Fisher, PhD, FRCP, Newcastle University, Newcastle upon Tyne, United Kingdom

Konrad Hoetzenecker, MD, PhD, Medical University of Vienna, Vienna, Austria

Deborah Levine, MD, UT Health Science Center, San Antonio, TX, USA

Me-Linh Luong, MD, St. Luc Hospital, Montreal, QC, Canada

Haifa Lyster, MSc, Royal Brompton, Harefield, Middlesex, United Kingdom

Jesper Magnusson, MD, PhD, University of Gothenburg, Gothenburg, Sweden

Fernanda Silveira, MD, University of Pittsburgh Medical Center, Pittsburgh, PA, USA

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

Target Audience

While all members are invited to enroll, this course is primarily designed to be of benefit for health care professionals who are in the early stages of their careers or who are in training, or who are part of a new program, or who desire an update on the current state of the field. The information presented is intended to provide a strong foundation of the core competencies of Lung Transplantation, rather than as a detailed update for those who are already proficient in the field.

Educational Goals

The Core Competency Course in Lung Transplantation will provide a detailed examination of the clinical practice of lung transplantation today through focused presentations with an emphasis on clinical practice, the course will provide a historical context, cover candidate selection, donor management and organ procurement, post-transplant management and complications.

Learning Objectives

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

1. Explain in detail how to evaluate and list potential candidates for lung transplantation.
2. Discuss perioperative management of the donor, lung procurement, and operative strategies including use of extracorporeal life support and ex vivo lung perfusion.
3. Identify the most common post-transplant complications including immediate post-operative complications, acute and chronic allograft dysfunction, infections, and other systemic complications.
4. Describe the immunosuppressive and preventative medication regimens that utilized in lung transplant recipients, the rationale for their use, and their potential complications.

CME Information

Physicians

Accreditation Statement – The International Society for Heart and Lung Transplantation (ISHLT) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation Statement – ISHLT designates this live activity for a maximum of 7.00 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Nurses and Pharmacists



In support of improving patient care, this activity has been planned and implemented by Amedco LLC and International Society for Heart & Lung Transplantation. Amedco LLC is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Nurses (ANCC) Credit Designation Statement – Amedco LLC designates this activity for a maximum of 7.00 ANCC contact hours.

Pharmacists (ACPE) Credit Designation Statement – Amedco LLC designates this activity for a maximum of 7.00 knowledge-based CPE contact hours.

NOTE to Pharmacists: The only official Statement of Credit is the one you pull from CPE Monitor. You must request your certificate within 30 days of your participation in the activity to meet the deadline for submission to CPE Monitor.

SCIENTIFIC PROGRAM

7:55-8:00 AM (5 mins)

WELCOME AND OVERVIEW OF COURSE

8:00 AM - 9:00 AM (60 mins)

SESSION 1: LUNG TRANSPLANTATION: GETTING FROM HERE TO THERE – HISTORY, CANDIDATE AND DONOR SELECTION

Moderated by Cynthia Gries, MD MSc

8:00-8:10 AM (10 mins)

History of Lung Transplantation

John Dark, MB, FRCS, Freeman Hospital, Newcastle upon Tyne, United Kingdom

Teaching/Discussion Points:

1. Context and historic background for lung transplantation
2. Historic aspects of indications and outcomes in lung transplantation
3. Current challenges and limitations associated with lung transplantation
4. Utility of the ISHLT registry report and resources

8:10-8:30 AM (20 mins)

Lung Transplant Candidacy, Selection, and Listing

Cynthia Gries, MD, MSc, Advent Health Transplant Institute, Orlando, FL, USA

Teaching/Discussion Points

1. General and disease-specific considerations for lung transplant referral and evaluation
2. Lung Transplant workup: Appropriate testing, cancer screening, vaccination, consultation and multidisciplinary support of the lung transplant candidate
3. How to handle the sensitized patient. Current understanding of risks associated with an elevated PRA, testing, and the importance of a virtual crossmatch vs. a prospective.

8:30-8:35 AM (5 mins)

Q&A

8:35-8:55 AM (20 mins)

Bridging Strategies to Lung Transplantation

Konrad Hoetzenecker, MD, PhD, Medical University of Vienna, Vienna, Austria

Teaching/Discussion Points

1. Technical aspects of extracorporeal mechanical oxygenation (ECMO) and selection of peripheral vs. central and veno-venous vs. venous-pulmonary vs. veno-arterial
2. Indication for ECMO prior to transplant patient
3. Contraindications for ECMO as a bridge to transplant
4. Ambulatory ECMO and implications on outcomes
5. When to withdraw support and delist patients

8:55-9:00 AM (5 mins)

Q&A

9:00 AM – 10:05 AM (65 mins)

SESSION 2: SURGICAL AND POST-OPERATIVE MANAGEMENT OF LUNG TRANSPLANT RECIPIENTS

Moderated by Göran Dellgren, MD, PhD

9:00-9:15 AM (15 mins)

Lung Allograft Donation and Procurement

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

Teaching/Discussion Points

1. Types of donors as relevant to lung transplantation (DBD, DCD)
2. Physiologic implications of donor brain death, basic pathophysiology, and donor certification issues
3. Optimal donor management
4. Factors that go into donor selection: acceptance of the marginal donor
5. Procurement procedures and how to recognize possible adverse events
6. Options for allograft optimization including Ex Vivo Lung Perfusion (EVLP)

9:15-9:20 AM (5 mins)

Q&A

9:20-9:35 AM (15 mins)

Surgical Options and Procedural Issues in Lung Transplantation

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

Teaching/Discussion Points

1. Principles and practice of size matching between donor and recipient
2. Options and choice of surgical incision
3. Technical aspects of surgical implantation including anastomotic techniques
4. Indications for use of Mechanical circulatory support (ECMO, vs ECC vs none intraoperatively)

9:35-9:40 AM (5 mins)

Q&A

9:40-10:00 AM (20 mins)

Surgical Complications and Post-OP Management after Lung Transplantation

Göran Dellgren, MD, PhD, Sahlgrenska University Hospital, Goteborg, Sweden

Teaching/Discussion Point

1. Differential diagnosis and treatment strategies for graft failure in the early postoperative period
2. Role of ECMO support after lung transplantation
3. Management of pleural complications after lung transplantation
4. Diagnostic and treatment strategies for bronchial, pulmonary artery and pulmonary venous complications
5. Potential cardiac complications (such as atrial fibrillation and pericardial effusions) and therapeutic approaches in post lung transplant recipients

10:00-10:05 AM (5 mins)

Q&A

10:05 AM – 10:30 AM (25 mins)

COFFEE BREAK

10:30 AM – 12:00 PM (90 mins)

SESSION 3: PREVENTING AND TREATING REJECTION

Moderated by Cynthia Gries, MD MSc

10:30-10:50 AM (20 mins)

Induction and Maintenance Immunosuppression

Haifa Lyster, MSc, Royal Brompton, Harefield, Middlesex, United Kingdom

Teaching/Discussion Points

1. Options for induction therapy and potential complications
2. Evidence for the triple agent immunosuppression regimen that is used most commonly in lung transplant recipients
3. Classes of immunosuppression medication and the most common side effects
4. Monitoring of levels of the calcineurin inhibitors; appropriate range of levels
5. Genetic variants that may affect absorption and metabolism of immunosuppressive medications
6. Drug-drug interactions with the calcineurin inhibitors
7. CNI free regimens-how do you manage when patients don't tolerate a CNI

10:50-10:55 (5 mins)

Q&A

10:55-11:10 AM (15 mins)

Acute Cellular Rejection (ACR)

Deborah Levine, MD, UT Health Science Center, San Antonio, TX, USA

Teaching/Discussion Points

1. Basic immunology of ACR
2. Detection, evaluation and diagnosis, including the role for surveillance bronchoscopy
3. Pathologic grading system for ACR
4. Treatment of ACR

11:10-11:15 AM (5 mins)

Q&A

11:15-11:35 AM (20 mins)

Antibody Mediated Rejection (AMR)

Deborah Levine, MD, UT Health Science Center, San Antonio, TX, USA

Teaching/Discussion Points

1. Consensus definitions for AMR
2. Potential monitoring systems for assessment of Donor Specific Antibodies, histopathology changes, and C4D staining
3. Therapeutic challenges
4. Managing

11:35-11:40 AM (5 mins)

Q&A

11:40-11:55 AM (15 mins)

Chronic Lung Allograft Dysfunction (CLAD)

Andrew J. Fisher, PhD, FRCP, Newcastle University, Newcastle upon Tyne, United Kingdom

Teaching/Discussion Points

1. Diagnosis
2. Classification system
3. Treatment

11:55 AM - 12:00 PM (5 mins)

Q&A

12:00 PM - 1:00 PM (60 mins)

LUNCH BREAK (a box lunch is included in the registration fee)

1:00 PM – 2:00 PM (60 mins)

SESSION 4: BUGS AND THEIR DRUGS: PROPHYLAXIS, DIAGNOSIS AND MANAGEMENT OF INFECTIONS AFTER LUNG TRANSPLANT

Moderated by Göran Dellgren, MD, PhD

1:00-1:15 PM (15 mins)

Bacterial and Mycobacterial Infections in Lung Transplantation

Fernanda Silveira, MD, University of Pittsburgh Medical Center, Pittsburgh, PA, USA

Teaching/Discussion Points

1. Evaluation of immunity and pulmonary/non-pulmonary infections in the lung transplant candidate
2. Significance and evaluation of bacterial and mycobacterial infections in the lung donor
3. Implications of donor derived infections
4. Impact of the surgical disruption of the normal pathways of innate lung immunity on the development of infection in the lung transplant recipient
5. Incidence, diagnosis and management of *C. Difficile* in post lung transplant patients

1:15-1:20 PM (5 mins)

Q&A

1:20-1:35 PM (15 mins)

Fungal Infections in Lung Transplant Recipients

Me-Linh Luong, MD, St. Luc Hospital, Montreal, QC, Canada

Teaching/Discussion Points

1. Role of antifungal prophylaxis, particularly in the context of geographic variance of endemic fungal infections
2. Epidemiology of aspergillus colonization vs. infection and review therapy
3. Emergence of more resistant fungal infections in solid organ transplant recipients
4. Prophylaxis and management of endemic fungal infections (*Coccidioides*, *Histoplasma*, etc.)

1:35-1:40 PM (5 mins)

Q&A

1:40-1:55 PM (15 mins)

Viral Pathogens from A to V (Adenovirus, CMV, EBV, HSV, RSV, and VZV)

Saima Aslam, MD, University of California San Diego, La Jolla, CA, USA

Teaching/Discussion Points

1. CMV status, prophylaxis vs. preemptive therapy
2. CMV disease manifestations, therapeutic approach, resistance and prognosis
3. Management of viral infections such as Herpes Simplex Virus (HSV) and Varicella Zoster (VZV)
4. Significance of respiratory viral infections and their management
5. COVID vaccination and management

1:55-2:00 PM (5 mins)

Q&A

2:00 PM – 3:10 PM (70 mins)

SESSION 5: POST TRANSPLANT CLINIC ABC'S

Moderated by Cynthia Gries, MD MSc

2:00-2:20 PM (20 mins)

Complications After Lung Transplant : Metabolic, Hematologic and Neurologic

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

Teaching/Discussion Points

1. Hypertension: Transplant specific issues regarding management of hypertension
2. Diabetes: Optimal management of diabetes mellitus following solid organ transplantation
 - a. Oral therapy vs. insulin in lung transplants. Is it safe to use oral therapy?
3. Renal disease: prevention and management
4. Bone health: Appropriate diagnostic and therapeutic management for osteoporosis
5. Hematological disease:
 - a. Neutropenia
 - b. Thrombocytopenia (Including TTP)
 - c. Hypogammaglobulinemia
 - d. Anemia
6. Neurological
 - a. PRES
 - b. Neuropathy

2:20-2:25 PM (5 mins)

Q&A

2:25-2:45 PM (20 mins)

Complications after Lung Transplant: Gastrointestinal Issues

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

Teaching/Discussion Points

1. Etiologies behind the common gastrointestinal symptoms patient have post lung transplantation
2. Management of esophageal dysmotility after transplant
3. Evaluation and management of GERD after transplant
4. Evaluation and management of gastroparesis after transplant.
5. Significance of aspiration in lung transplant recipients and its association with BOS (chronic rejection)
6. Diarrhea workup in an immunocompromised patient

2:45-2:50 PM (5 mins)

Q&A

2:50-3:05 PM (15 mins)

Malignancies in Lung Transplant Recipients

Jesper Magnusson, MD, PhD, University of Gothenburg, Gothenburg, Sweden

Teaching/Discussion Points

1. Incidence of malignancy in lung transplant recipients (skin cancer, lymphomas, etc)
2. Appropriate screenings for cancer and preventative strategies (bone scans, colonoscopy)
3. Post Transplant Lymphoproliferative Disease (PTLD) in Thoracic Transplantation - Recognition
4. Immunosuppression: What to do if patient has malignancies

3:05-3:10 PM (5 mins)

Q&A

3:10-3:30 PM (20 mins)

COFFEE BREAK

3:30 PM – 5:00 PM (90 mins)

SESSION 6: CAN I DO THIS AFTER TRANSPLANT?

Moderated by Göran Dellgren, MD, PhD

3:30-3:45 PM (15 mins)

Adherence

Cynthia Gries, MD, MSc, Advent Health Transplant Institute, Orlando, FL, USA

Teaching/Discussion Points

1. Risk factors for poor adherence
 - a. Monitoring prior to transplant
 - b. Health Literacy
 - c. Psychological symptoms
2. Assessing adherence
 - a. Tacrolimus Standard Deviation
 - b. Monitoring device

3:45-3:50 PM (5 mins)

Q&A

3:50-4:05 PM (15 mins)

Reproductive Health after Lung Transplantation – Contraception, Fertility, and Pregnancy

Marie M. Budev, Do, MPH, The Cleveland Clinic, Cleveland, OH, USA

Teaching/Discussion Points

1. Implications of fertility and pregnancy in a lung transplant recipient, including risks to the transplant recipient, organ and fetus
2. Medical care considerations during pregnancy for lung transplant recipients
3. Literature regarding outcomes for pregnancies post-transplant
4. Family planning options for patients undergoing transplantation
5. Contraception recommendations and potential contraindications

4:05-4:10 PM (5 mins)

Q&A

4:10-4:25 PM (15 mins)

This is My Life – Outcomes and Quality of Life Post Transplant

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

Teaching/Discussion Points

1. Post-transplant outcomes
2. Health Related Quality of Life before and after lung transplant
3. Long term outcomes after lung transplantations
4. Determinants of Health Related Quality of Life (HRQOL) and potential interventions that could further improve HRQOL in lung transplant recipients

4:25-4:30 PM (5 mins)

Q&A

4:30-4:55 PM (25 mins)

What I Know Now That I Wish I Knew Then: Illustrious Insights

Andrew J. Fisher, PhD, FRCP, Newcastle University, Newcastle upon Tyne, United Kingdom

4:55-5:00 PM (5 mins)

COURSE SUMMARY AND EVALUATION

Cynthia Gries, MD MSc

5:00-5:30 PM (30 mins)

NETWORKING

Speakers will be available for questions

5:30 PM

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