



**ISHLT ACADEMY MASTER CLASS IN PULMONARY TRANSPLANTATION**

**Tuesday, April 26, 2016**

**8:00 AM – 1:00 PM**

**Marriott Wardman Park Hotel, Washington, DC, USA**

***THURGOOD MARSHALL BALLROOMS SOUTH & WEST***

## ISHLT ACADEMY MASTER CLASS IN PULMONARY TRANSPLANTATION

Tuesday, April 26, 2016

8:00 AM – 1:00 PM

**Chair:** Kevin M. Chan, MD, University of Michigan Health Systems, Ann Arbor, MI, USA

### Scientific Program Committee

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

David Hormuth, MD, Indiana University School of Medicine, Indianapolis, IN, USA

Lorriana Leard, MD, University of California San Francisco, San Francisco, CA, USA

Geert M. Verleden, MD, PhD, FERS, University Hospital Gasthuisberg, Leuven, Belgium

**Course Summary:** The Pulmonary Council Education Workforce is proud to offer this educational opportunity to ISHLT members. This Master Class is intended for members with higher levels of expertise (completed the core curriculum course on lung transplantation and/or primary practice in lung transplantation  $\geq 5$  years) who have managed patients with one or more of the topics intended for discussion. The course setting will generate a highly interactive environment composed of a smaller group of individuals designed to enhance individual expertise and network development. Utilizing the concept of “convergent discussion”, faculty moderators will use controversial statements or case presentations to lead the group through audience participation, towards specific answers based on practice gaps and learning objectives. Following a 15 minute introductory and overview presentation, each participant will rotate through 60 minute course deliberations on antibody mediated rejection (AMR), chronic lung allograft dysfunction (CLAD), extra-corporeal lung support (ECLS), and lung organ donor management. We anticipate that this method of collaborative learning will lead to application and integration of new knowledge into participant practice.

### Educational Goals

The overarching goal is to provide an advanced learning opportunity for specialists in the field of lung transplantation on the treatment of AMR, CLAD, ECLS and organ donor management.

### Target Audience

Experienced (primary practice in lung transplantation  $\geq 5$  years or completed the ISHLT core curriculum course on lung transplantation) Transplant Pulmonologists/Respirologists, Cardiothoracic Surgeons with Lung Transplant experience, Physician Specialists in Lung Transplantation (Pathology, Immunology, Anesthesiology, etc), Nurses, Physician Assistants and Allied Health Professionals with involvement in Lung Transplantation.

### Practice Gaps

**1:** The presence of HLA and non-HLA donor specific antibodies (DSA) is associated with various types of antibody mediated graft dysfunction. A surveillance strategy to monitor lung transplant recipients for donor HLA and non-HLA antibodies, understanding the criteria for AMR and developing an approach to management of clinical AMR, are practice gaps in specialist knowledge that result in limitations of clinical care.

**2:** Chronic lung allograft dysfunction (CLAD) encompasses a heterogeneous group of clinical syndromes with substantial variability in disease progression and response to treatment. However, optimal strategies for phenotyping, preventing, detecting and treating CLAD remain controversial. Individual practitioners often lack the depth of experience and knowledge to address these management issues.

**3:** The use of ECMO as a bridge-to-lung transplantation is becoming increasingly more common. The indications, management, transplant evaluation difficulties and the postoperative short-term management of these patients may be problematic. Practitioners may lack the extensive expertise required to appropriately address these decisions

**4:** Significant variability exists in the management of potential lung donors. Ventilator strategies and the recognition of the futility of continued donor management differ greatly between OPOs and transplant centers. An understanding that the standardization of lung donor management will lead to more uniform information across regions will close this practice gap in specialist knowledge.

### **Learning Objectives**

Upon completion of the Master Class, participants will be able to:

1. Understand the strategies to monitor donor specific antibody activity in lung transplant recipients.
2. Diagnose, monitor and treat clinical antibody mediated rejection (AMR) in lung transplant recipients.
3. Understand the role of testing, risk factors and features for the diagnosis and differentiation between restrictive versus obstructive chronic lung allograft dysfunction (CLAD).
4. Understand the significance of macrolide responsive CLAD and discuss the optimal modality and timing of treatment in non-responders according to CLAD phenotyping.
5. Understand best practice plans for success using ECMO as a bridge to lung transplantation.
6. Discuss the different factors that should lead to ECMO termination without transplantation.
7. Understand a strategy of ventilator management and donor lung recruitment that will lead to more consistent outcomes.
8. Identify factors that will lead to the recognition of deteriorating donor lungs while understanding the role for ex-vivo lung perfusion (EVLP).

### **Accreditation Statement**

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

### **Credit Designation Statement**

ISHLT designates this live activity for a maximum of 4.25 *AMA PRA Category 1 Credits*.™ Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### **ANCC Credit**

Amedco is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. This course is co-provided by Amedco and the International Society for Heart and Lung Transplantation (ISHLT). Maximum of 4.25 contact hours.

### **Disclosure**

Current guidelines state that participants in CME activities must be made aware of any affiliation or financial interest that may affect the program content or a speaker's presentation. Planners, Faculty and Chairs participating in this meeting are required to disclose to the program audience any real or apparent conflict(s) of interest related to the content of their presentations or service as Chair/Planner. Please refer to the Participant Notification document for a list of all disclosures. Additionally, all speakers have been asked to verbally disclose at the start of their presentation if a product they are discussing is not labeled for the use under discussion or is still investigational.

**ISHLT ACADEMY MASTER CLASS IN PULMONARY TRANSPLANTATION**

**TUESDAY, APRIL 26, 2016**

**8:00 AM – 1:00 PM**

**SCIENTIFIC PROGRAM SCHEDULE**

**(All Sessions for those assigned to the Orange Group will take place in Thurgood Marshall South)**

**7:15 AM – 8:00 AM**

**REGISTRATION AND MORNING COFFEE**

**8:00 AM - 8:15 AM**

**WELCOME AND INTRODUCTIONS**

Lorriana Leard , MD, University of California San Francisco, San Francisco, CA, USA

**8:15 AM – 9:15 AM**

**SMALL GROUP INTERACTIVE DISCUSSION A: ANTIBODY MEDIATED REJECTION**

**Moderator:** Lorriana Leard, MD

The presence of HLA and non-HLA donor specific antibodies (DSA) is associated with various types of antibody mediated graft dysfunction. Antibody mediated rejection (AMR) may also be a contributing factor to the development of chronic lung allograft dysfunction (CLAD) as well as decreased survival. The ISHLT has developed an Expert Consensus Document on the clinical and pathological definition of AMR. This has important implications for clinical practice, therapeutic interventions, and the design of research protocols.

**8:15 AM**

**Case Scenario: Asymptomatic lung transplant recipient found to have positive donor specific antibodies four weeks following the procedure**

Dolly Tyan, PhD, Stanford University, Stanford, CA, USA

**Teaching/Discussion Points**

- a. What is included in an evaluation for Pulmonary AMR
- b. Surveillance of pre-transplant and post-transplant DSA
- c. What does a positive DSA mean in the face of normal graft function and normal pathology
- d. Role of C4d staining in the evaluation of Pulmonary AMR
- e. Is there a role for medical therapy in the setting of a positive DSA with no pathologic or clinical findings?

**8:45 AM**

**Case Scenario: Lung transplant recipient found to have an abnormal CT of the chest, positive donor specific antibodies and histopathology consistent with antibody mediated rejection**

Deborah Levine, MD, University of Texas Health Science Center, San Antonio, TX, USA

**Teaching/Discussion Points**

- a. What is Pulmonary AMR?
- b. What are the pathologic findings of Pulmonary AMR?
- c. What are the different treatment strategies for Pulmonary AMR?
- d. When do you initiate therapy for Pulmonary AMR?
- e. What indices indicate a positive response to therapy?

**9:20 AM – 10:20 AM**

**SMALL GROUP INTERACTIVE DISCUSSION B: CHRONIC LUNG ALLOGRAFT DYSFUNCTION (CLAD)**

**Moderator:** Geert M. Verleden, MD, PhD

It is becoming increasingly evident that chronic lung allograft dysfunction (CLAD) encompasses a heterogeneous group of clinical syndromes with substantial variability in disease progression and response to treatment. However, optimal strategies for phenotyping, preventing, detecting and treating CLAD remain controversial.

**9:20 AM**

**Case Scenario: Bilateral lung recipient with a history of obstructive airway complications and declining graft function two years after transplantation**

Geert M. Verleden, MD, PhD, FERS, University Hospital Gasthuisberg, Leuven, Belgium

**Teaching/Discussion Points**

- a. Differential diagnosis and confounders of CLAD
- b. Baseline FEV1 in patients with obstructive airway complications
- c. Role of bronchoalveolar lavage in identification of response of CLAD to therapy
- d. Second line treatment options for CLAD
- e. Photopheresis-when to start and when to stop
- f. Is there a role of surgery in graft dysfunction

**9:50 AM**

**Case Scenario: Bilateral lung recipient with declining lung function, obstructive pattern and evolving pulmonary opacities**

Jens Gottlieb, MD, Hannover Medical School, Hannover, Germany

**Teaching/Discussion Points**

- a. CLAD phenotyping and differential diagnosis
- b. Risk factors for CLAD
- c. Criteria to phenotype CLAD
- d. Evolution patterns within CLAD
- d. Treatment of CLAD
- e. Role of retransplantation, azithromycin, other treatment options? **REPEATED**

**10:20 AM – 10:45 AM**

**COFFEE BREAK**

**10:45 AM – 11:45 AM**

**SMALL GROUP INTERACTIVE DISCUSSION C: EXTRACORPOREAL LUNG SUPPORT (ECLS) AS A BRIDGE TO TRANSPLANTATION**

**Moderator:** Goran Dellgren, MD, PhD

The use of ECMO as a bridge-to-lung transplantation is becoming increasingly more common especially after improvements in technology that allow extra-corporeal lung support in the awake, ambulating patient. The indications, management, transplant evaluation difficulties and the postoperative short-term management of these patients may be problematic

**10:45 AM**

**Case Scenario: 65 year old woman with dermatomyositis related ILD is on vvECMO due to acute pneumonia and continues to deteriorate. The lung transplant team is consulted at this time**

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

**Teaching/Discussion Points**

- a. ECMO decisions: vv and va ECMO – when should transition be considered?
- b. Awake versus sedated?
- c. Tracheostomy versus oral/nasal intubation?
- d. Physiotherapy versus cautious conservative management
- e. Kidney function decisions: RRT versus forced diuresis
- f. How to manage work-up in non-listed patients when lung transplantation is the only remaining option?

**11:15 AM**

**Case Scenario: 30 year old man with CF, on the waiting list for lung transplantation, develops pneumonia requiring mechanical ventilation and subsequent ECMO support. Hemoptysis and barotrauma ensue**

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

**Teaching/Discussion Points**

- a. When should complications on non-weanable ECMO be regarded as too much to pursue lung transplantation?
- b. What combination of complications should result in ECMO termination without lung transplantation?
- c. How do we balance empathy, hope and social needs in a patient that cannot be weaned from ECMO?
- d. Ethical arguments to pursue/decline LTx in a young very sick patient that cannot be weaned from ECMO?
- e. How to manage the patient when there is no other option than ECMO-termination?
- f. How to manage the relatives when there is no other option than ECMO-termination?

**11:50 AM – 12:50 AM**

**SMALL GROUP INTERACTIVE DISCUSSION D: LUNG DONOR MANAGEMENT**

**Moderator:** David Hormuth, MD, Indiana University School of Medicine, Indianapolis, IN, USA

Significant variability exists in management of potential lung donors. Ventilator strategies, fluid choice and use of adjunctive antimicrobial and pharmacologic measures differ greatly between OPOs and transplant centers. While it must be recognized that some measures have significant implications on other potential donor organs, some affect the lungs alone. Standardization of lung donor management will allow standardized interpretable information across regions and the number of quality organs will be increased.

**11:50 AM**

**Case Scenario: Forty year old male donor, nonsmoker, who suffered a traumatic brain injury. Bilateral lungs are offered to your recipient who is currently hospitalized for hypoxemia (LAS 54). PaO<sub>2</sub>/FiO<sub>2</sub> = 276**

David Hormuth, MD, Indiana University School of Medicine, Indianapolis, IN, USA

**Teaching/Discussion Points**

- a. Selection criteria
- b. Recruitment techniques
- c. Donor Operation management
- d. Options to optimize post-transplant function

**12:20 PM****Case Scenario: 32 year old male smoker, declared brain dead on hospital day 3; PaO<sub>2</sub>/FiO<sub>2</sub> = 350.****Lungs are accepted for your patient but the donor surgery is delayed and the most recent PaO<sub>2</sub>/FiO<sub>2</sub> = 260**

Matthew Hartwig, MD, Duke University, Durham, NC, USA

**Teaching/Discussion Points**

- a. Analysis of deterioration of oxygenation
- b. Futility- are these lungs no longer suitable
- c. Intraoperative analysis - could a single lung be an option
- d. Potential role for ex-vivo lung perfusion

**12:50 PM – 1:00 PM****CLOSING REMARKS**

Kevin M. Chan, MD, University of Michigan Health Center, Ann Arbor, MI, USA