

## Influences of primary graft dysfunction (PGD) on parenchymal remodeling after lung transplantation (LT) detected by mean quantitative computed tomography (CT).

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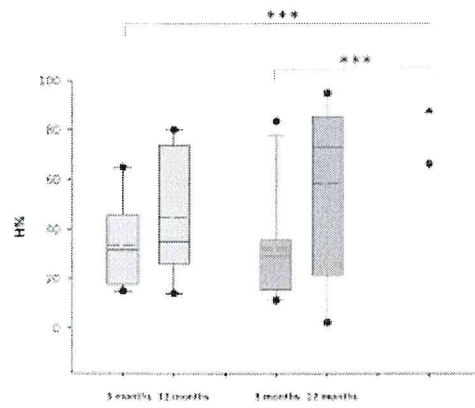
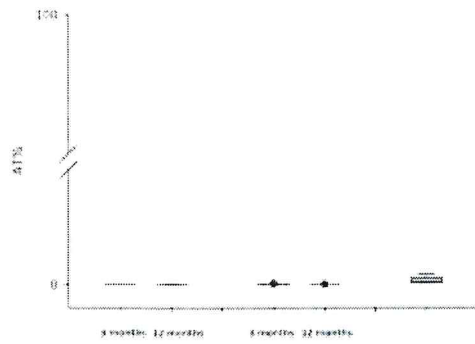
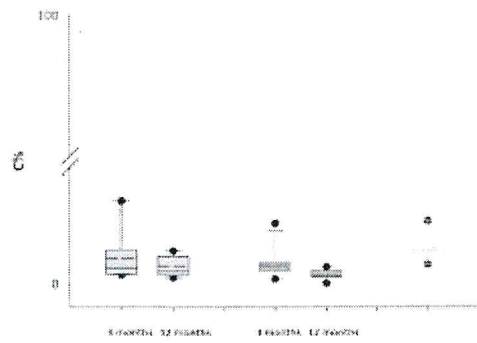
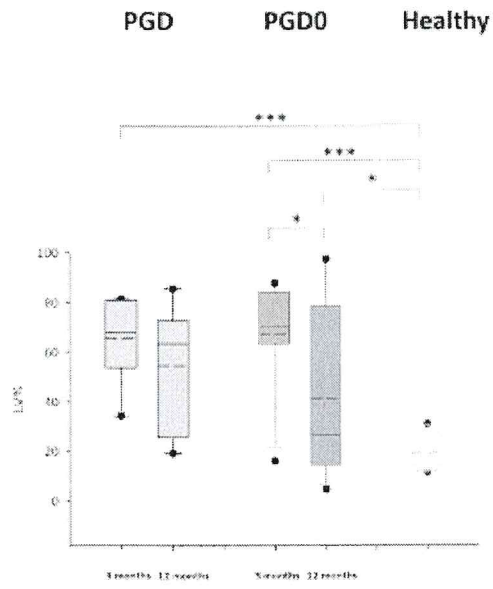
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Regional analysis by CT could be an attractive technique to interpret lung patterns after LT. We evaluate the application of CT functional mask derived parameters to determine whether development of PGD is associated with short and/or long term postoperative evidences of pulmonary function alterations.

18 consecutive patients who underwent bilateral LT were recruited. Patients were evaluated at 24, 48 and 72 hours after LT to establish PGD occurrence and grading. Patients without evidence of PGD constituted the PGD0 Group; patients with grade 2 and/or 3 composed the PGD Group. CT scans at 3 and 12 months after LT were analyzed to measure specific gas volume (SVg) changes normalized on expiratory SVgEXP of the whole lung ( $\Delta\text{SVg}/\text{SVgEXP}$ ) and to obtain functional masks of density variation ( $\Delta\text{HU}$ ), namely maps of low ventilation (LV), consolidation (C), air trapping (AT) and healthy parenchyma (H). Our main result was the evidence of a marked decrease in  $\Delta\text{SVg}/\text{SVgEXP}$ , both at 3 and 12 months after LT, indicating a high degree of ventilation defects. Higher grades of PGD were associated to higher percentages of LV while percentages of AT and C were negligible (fig). We demonstrate that quantification of ventilation defects by CT functional mask can offer insight into the correlation between PGD and pulmonary function after LT at short and mid-term.



**Session:**

**Lung transplant science: from primary graft to chronic allograft dysfunction** (Oral presentation)

**Date/Time:**

Monday, September 17, 2018 / 14:45-16:45

**Room:**

Terminal 7

**Category:**

Transplantation

**Keywords:**

Imaging, Transplantation, Biomarkers

- OA3330 **Influences of primary graft dysfunction (PGD) on parenchymal remodeling after lung transplantation (LT) detected by mean quantitative computed tomography (CT).**  
Andrea Aliverti (Milan, Italy), Caterina Salito, Davide Tosi, Francesca Pennati, Rosaria Carrinola, Lorenzo Rosso, Paolo Tarsia, Letizia Morlacchi, Mario Nosotti, Alessandro Palleschi
- OA3331 **Diagnosis of antibody-mediated rejection (AMR) on lung transplant biopsies: A retrospective single-center case study**  
Silvana Geleff (Vienna, Austria), Gottfried Fischer, Peter Jaksch
- OA3332 **Is influenza trivalent vaccination effective in lung transplant recipients?**  
Jana Kleinerova (Dublin 8, Ireland), Lana Khorsheed, Sean Walsh, Patricia Ging, Sara Winward, Iain Lawrie, Breda Lynch, Jim Egan
- OA3333 **Clinical implications of host-bacteria-virus interactions in lung transplantation**  
Daniel-Adrien Wurlod (Lausanne, Switzerland), Eric Bernasconi, Celine Pattaroni, John-David Aubert, Benjamin Marsland, Laurent Nicod
- OA3334 **Bronchiectasis as prognostic factor in bronchiolitis obliterans syndrome after lung transplantation**  
Anke Van Herck (Leuven, Belgium), Annelore Sacreas, Tobias Heigl, Stijn Verleden, Bart Vanaudenaerde, Walter De Wever, Geert Verleden, Robin Vos
- OA3335 **The murine orthotopic single lung transplantation model for chronic rejection: work in progress?**  
Tobias Heigl (Leuven, Belgium), Janne Kaes, Annelore Sacreas, Anke Van Herck, Greetje Vande Velde, Stijn Verleden, Geert Verleden, Wim Janssens, Robin Vos, Bart Vanaudenaerde
- OA3336 **B cells drive iBALT formation in a mouse model of chronic lung allograft dysfunction**  
Natalia Smirnova (München, Germany), Thomas Conlon, Carmela Morrone, Ali Oender Yildirim, Oliver Eickelberg

7.2A

Session 348

14.45 - 16.45

Poster discussion: What's new in lung function and exercise assessment in COPD?

Disease(s) : Airway diseases **Sleep and breathing disorders** **Respiratory critical care**

Method(s) : Endoscopy and interventional pulmonology Respiratory intensive care Epidemiology Imaging General respiratory patient care Physiology

Chairs : Andrea Aliverti (Milan, Italy), Nicoletta R. Morelli (Den Haag, Netherlands)

- PA3337 **Late Breaking Abstract - Optimizing FEV1/FVC threshold to predict COPD hospitalization and mortality: NHLBI pooled cohorts study**  
Surya Bhatt (Birmingham, United States of America), Pallavi Balte, Patricia Cassano, David Couper, David Jacobs, Ravi Kalhan, Robert Kaplan, George O'Connor, Joseph Schwartz, Sachin Yende, Jason Sanders, Mark Dransfield, Paolo Chaves, Wendy White, Elizabeth Oelsner
- PA3338 **Late Breaking Abstract - Comparison of High Flow Nasal Cannula with Noninvasive Ventilation in Facilitating Weaning COPD From Invasive Ventilation: A Prospective Randomized Controlled Study**  
Jie Li (Chicago, United States of America), Jing Guoqiang, Jie Li, Dong Hao, Tao Wang, Xiaozhi Wang
- PA3339 **Late Breaking Abstract - Effect of oxygen supplementation on sleep and nocturnal breathing in patients with chronic obstructive pulmonary disease travelling to high altitude: randomized trial**  
Lu Tan (Chengdu, China), Michael Furian, Tsogyal D Latshang, Sayaka S Aeschbacher, Fabienne Huber, Deborah Flueck, Mona Lichtblau, Stefanie Ulrich, Elisabeth D Hasler, Philipp M Scheiwiller, Silvia Ulrich, Malcolm Kohler, Konrad E Bloch
- PA3340 **FEV6 as a marker of airflow limitation: a cross-sectional study**  
Rishabh Raj (Mumbai (Maharashtra), India), Rajiv Mathur
- PA3341 **Comparison of pulsed flow from portable oxygen concentrators with continuous oxygen delivery.**  
John Chen (Edmonton (AB), Canada), Ira Katz, Georges Caillibotte, Marine Pichelin, Warren Finlay, Kaixian Zhu, Andrew Martin
- PA3342 **Impact of mid distance hypobaric flight simulation on walking distance and desaturation in COPD patients**  
Dominic Dellweg (Schmallenberg Grafschaft, Germany), Juliane Schmitt, Jens Kerl, Ekkehard Hoehn, Jutta Dellweg, Dieter Köhler, Peter Haidl
- PA3343 **Investigation of relationship between four meter gait speed test and cardiopulmonary exercise test to determine exercise capacity in COPD patients**  
Sevinc Sarinc Ulasli (Ankara, Turkey), Oğuz Karcioğlu, Ahmet Ugur Demir



