AntiHLA antibodies before and after Lung Transplantation: a role on medium – long term outcomes?

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Purpose
The development of donor specific human leukocyte antigen (HLA) antibodies (DSA) has already been identified as a risk factor for graft dysfunction and poor survival in the context of lung transplantation (LuTx), but available evidence is not conclusive. The aim of our study was to evaluate the possible existing correlation between pre-existing and/or post transplant developing DSA and recipients’ outcome.

Results
132 patients were considered: 70 (53%) males, median age at LuTx 36 (29.51) years.
Among the “silent” patients: 63% remained negative after LuTx, 20% developed non-DSA and 17% DSA. Among “reactive” recipients: 15% remained negative after LuTx, 39% maintained non-DSA and 46.2% developed de-novo DSA. Finally, considering “activated” individuals: the vast majority (80%) maintained pre-transplant DSA and developed new ones, while the remaining 20% lost pre-transplant DSA but showed de-novo non-DSA. DSA tended to appear much earlier in pre-transplant allo-sensitized patients (1 vs. 3 months). These results are depicted in tables and figures.

Finally, both pre and post LuTx DSA showed correlation with the development of chronic lung allograft dysfunction (CLAD) (HR 3.43; 1.99-9.89 and HR 3.35; 1.46-7.68).

Methods
This was a prospective, observational study on consecutive LuTx recipients from January 2013 to December 2017. Every individual underwent DSA surveillance with blood specimens collection before and after LuTx surgical procedure. Three groups were defined based on pre-formed antibody setting at time of LuTx: silent, if no antibody was found on their blood; reactive, patients with non-DSA antibodies; and activated, patient with DSA antibodies. Correlation between antibodies panel (before and after LuTx) and outcomes (lung allograft dysfunction and survival) was then investigated.

Figure A – Pre transplant antibodies status

Figure B – Post transplant antibodies status

Conclusions
These preliminary findings support the role of both pre-existing and post LuTx developed DSA as a potentially dangerous risk factor for CLAD development, while they did not correlate with acute cellular rejection and/or survival.

References
POSTER SESSION 3: LUNG FAILURE/TRANSPLANTATION (ADULT)
Room: Banda Sea 1

Poster Discussants:
Andrew Courtwright, MD, PhD, University of Pennsylvania, Philadelphia, PA, USA
Peter Hopkins, FRACP, Prince Charles Hospital, Brisbane, Australia
Lorriana Leard, MD, UCSF Medical Center, San Francisco, CA, USA
Deborah Levine, MD, UT Health Science Center, San Antonio, TX, USA
Sebastian Michel, MD, Ludwig Maximilian University/Munich University, Muenchen, Germany
Caroline Patterson, MD, Papworth Hospital, Cambridge, United Kingdom
Aida Venado, MD, UCSF Medical Center, San Francisco, CA, USA
Robin Vos, MD, PhD, University Hospitals Leuven, Leuven, Belgium

(1014) Time to Therapeutic Tacrolimus Serum Concentrations and the Impact on Early Acute Cellular Rejection in Adult Lung Transplant Recipients: K. Mekanovic1, J. Schiefferdt2, L. Shah3, H. Robbins3, M. Aversa4, S. Arcasoy5, L. Benvenuto5. 1Department of Pharmacy, Rhode Island Hospital, Providence, RI; 2Department of Pharmacy, New York-Presbyterian Hospital, New York, NY; 3Department of Medicine, Columbia University Irving Medical Center, New York, NY

(1015) Acute Rejection (AR) and Lymphocytic Bronchiolitis (LB) in a Multicenter Lung Transplant Cohort: J. L. Todd1, M. L. Noeby2, H. Kopetzki3, M. Sever4, J. Kirchner5, C. W. Frankel6, L. D. Snyder7, E. N. Pavliako8, T. Martinu9, W. Tsuang10, M. Shino11, N. Williams12, M. A. Robien13, L. G. Singer14, M. Budev15, P. D. Shah16, J. M. Reynolds17, S. M. Palmer18, J. A. Belpiero19, S. S. Weigt20. 1Duke Univ Med Ctr, Durham, NC; 2Rho Federal Systems Division, Chapel Hill, NC; 3University of Toronto, Toronto, ON, Canada; 4Cleveland Clinic, Cleveland, OH; 5University of California Los Angeles, Los Angeles, CA; 6National Institute of Allergy and Infectious Disease, Bethesda, MD; 7Johns Hopkins University, Baltimore, MD


(1018) Clinical Antibody Mediated Rejection of Lung Is Not One Disease, but includes Distinct Obstructive, Restrictive and Indolent Phenotypes: D. Abelson1, S. Garnett2, A. Awford3, A. Kwok3, N. Watson4, J. Colgan5, A. Rigby6, M. Pilt7, A. R. Glavine1. 1Lung Transplant Unit, St. Vincent’s Hospital, Sydney, Australia; 2Integrative Biomedical Sciences, University of Cape Town, Cape Town, South Africa; 3Department of Radiology, St. Vincent’s Hospital, Sydney, Australia; 4Solid Organ Transplantation, Australian Red Cross Blood Service, Sydney, Australia

(1019) Anti-HLA Antibodies before and after Lung Transplantation: A Role on Medium-Long Term Outcomes?: E. Benazzi1, L. Morlacchi2, A. Cannavo3, L. Rosso4, A. Pallucchini5, V. Rossetti6, I. Righi7, S. Pasamonti8, B. Dalpedri9, E. Longhi9, M. Cardillo10, P. Tarsia11. 1Transplant Coordination (NTT); Dept. of Services and Preventive Medicine, Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico di Milano, Milano, Italy; 2Internal Medicine Department, Respiratory Unit and Cystic Fibrosis Adult Centre, Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico di Milano, Università degli Studi di Milano, Milano, Italy; 3Thoracic Surgery and Lung Transplant Unit, Fondazione IRCCS Ca’ Granda Ospedale Maggiore Policlinico di Milano; Università degli Studi di Milano, Milano, Italy

(1020) Evaluating Novel Graft Failure Thresholds after Lung Transplantation: J. Liu, D. Li, K. Jackson, J. Weinkauf, A. Kapasi, D. Lien, A. Hirji, K. Halloran. Department of Medicine, University of Alberta. Edmonton, AB, Canada

(1021) Impact for Survival and Chronic Lung Allograft Dysfunction of ISHLT Consensus of Antibody Mediated Rejection after Lung Transplantation: Y. Hoda1, M. Sato1, L. Thuita1, H. Niiikawa2, K. S. Ayyan3, T. Okamoto4, C. F. Farver5, A. Zhang6, M. Budev7, E. H. Balestone8, K. R. McCurry9. 1Cardiac Surgery, The University of Tokyo Hospital, Tokyo, Japan; 2Thoracic Surgery, The University of Tokyo Hospital, Tokyo, Japan; 3Quantitative Health Sciences, Cleveland Clinic, Cleveland, OH; 4Department of Thoracic and Cardiovascular Surgery, Cleveland Clinic, Cleveland, OH; 5Anatomic Pathology, Cleveland Clinic, Cleveland, OH; 6Allograft Department, Cleveland Clinic, Cleveland, OH; 7Respiratory Institute, Cleveland Clinic, Cleveland, OH

(1022) COMBINATION Therapies Including TOCHILIZUMAB Decrease the Progression of CLAD: Initial Clinical Experience: D. J. Ross1, A. Der Hovanessian2, B. Kukhal3, E. Reed4, C. Nator5, J. Schaemann6, A. Ardehali7. 1Medicine, David Geffen - UCLA School of Medicine, Los Angeles, CA; 2Medicine, David Geffen - UCLA School of Medicine, Los Angeles, CA; 3Immunogenetics, David

Friday, April 5, 2019
6:00 PM - 7:15 PM
INTERNATIONAL SOCIETY FOR HEART AND LUNG TRANSPLANTATION

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