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Risks and Outcomes Associated with Pleural Space Infections After Lung Transplantation

Jane Simanovski

Hassan Nemeh

Lisa Allenspach

L. L. Mei

Lisa Stagner

See next page for additional authors

Authors

Jane Simanovski, Hassan Nemeh, Lisa Allenspach, L. L. Mei, Lisa Stagner, Julio Pinto Corrales, Kaitlin Olexsey, Domingo J. Franco-Palacios, and George Alangaden

symptoms to triage or hospitalization in those that survived vs died, 3.3 vs 9.4 days (p=0.003).

Conclusion: This is one of the largest cohorts reporting lung transplant recipients who contracted COVID19, and despite lungs being the organ directly affected by COVID19, mortality rates are comparable to rates reported in other solid organ transplants. Time to triage from symptom onset to clinic management or hospital admission for COVID appears to be associated with improved mortality rates.

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Donor and Peri-Transplant Hospitalization Risk Factors for Invasive Fungal Infection in Lung Transplant Recipients

A. Le Mahajan, K. Whitaker, E. Blumberg, L. Gardo, J. Lee, M. Crespo, C. Bermudez, L. Glaser, M. Wilck and J. Anesi. Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA.

Purpose: Invasive fungal infections (IFIs) remain a frequent complication in the lung transplant (LTx) population even in the current era of antifungal prophylaxis. The organ donor and peri-transplant period risk factors for IFI remain ill-defined. Our study goal is to identify novel risk factors for IFI, focusing on the organ donor and the recipient's transplant hospitalization.

Methods: We performed a single-center, case-control study. The source cohort included all adults who underwent LTx between 1/1/12-3/31/17. The primary outcome was a Probable or Proven IFI within 6 months of transplantation, as defined by EORTC/MSG criteria. Multivariable logistic regression and Cox proportional hazard regression analyses were used to identify independent risk factors for IFI.

Results: Of 329 LTx recipients, 45 (14%) developed IFI. The median time to IFI was 50 days (IQR: 25-110) after transplantation. Independent risk factors for IFI included: donor steroid pre-conditioning (aOR 2.24, 95%CI: 1.05-4.77, p=0.04); cardiopulmonary bypass (aOR 3.07, 95%CI: 1.06-8.87, p=0.04); ICU length of stay >30 days (aOR 3.34, 95%CI: 1.48-75, p<0.01); and bronchial anastomotic dehiscence (aOR 14.06, 95%CI: 1.99-99.34, p=0.01). Mold isolated on donor respiratory culture increased the hazard of IFI in LTx recipients (Table 1). Peri-transplant hospitalization complications that increased the hazard of IFI included: multiple positive fungal cultures, airway ischemia, and prolonged ICU stay (Table 1). Fungal treatment for ≥90 days after transplant was protective against development of IFI (Table 1).

Conclusion: IFI was common in our LTx cohort. Certain donor characteristics and peri-transplant complications increased the likelihood of IFI. Interventional studies, targeting the modifiable risk factors identified in this study, are needed to reduce IFI risk in LTx recipients.

Variable	Adjusted HR	95% CI	P-value
Donor mold culture	3.88	1.32-11.40	0.014
Multiple positive fungus cultures	1.16	1.07-1.25	<0.001
Airway ischemia	3.56	1.80-7.03	<0.001
ICU stay >30 days	2.87	1.49-5.54	0.002
Antifungal treatment for ≥90d	0.13	0.05-0.37	<0.001

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Risks and Outcomes Associated with Pleural Space Infections After Lung Transplantation

J. Simanovski,[1] H.M. Nemeh,[2] L.L. Allenspach,[3] L.L. Mei,[4] L.D. Stagner,[3] J.C. Pinto,[3] K.M. Olexsey,[3] D.J. Franco-Palacios,[3] and G.J. Alangaden.[5] [1]Transplant Institute, Henry Ford Health System, Detroit, MI; [2]Cardiac Surgery, Henry Ford Health System, Detroit, MI; [3]Pulmonary and Critical Care Medicine, Henry Ford Health System, Detroit, MI; [4]Biostatistics and Research Epidemiology, Henry Ford Health System, Detroit, MI; and the [5]Infectious Disease, Henry Ford Health System, Detroit, MI.

Purpose: Pleural space infections (PSI) are a serious complication after lung transplantation (LT) however there is limited data on the associated risk factors and outcomes of PSI. We examined: 1) risk factors associated with PSI after LT; 2) effect of PSI on LT outcomes.

Methods: This is a retrospective single center cohort study of 74 consecutive LT recipients (1/2018- 6/2020). Patients were divided into infected and non-infected groups, where PSI were defined as post-LT pleural effusions with pathogen(s) isolated from pleural fluid. Data were collected and compared between two groups with two-sample t-test or Fisher-exact. Multivariable logit model was performed with estimations of odds ratio (OR) and its confidence interval [CI].

Results: Among 74 LT recipients, 38 (51%) developed pleural effusions requiring drainage; of them 16 (42%) had PSI. Baseline demographics were similar in patients with and without PSI (Table). Notably, 88% of PSI group received steroids pre-LT compared to 55% in the non-infected group (p<0.05); 88% of the PSI group had an underlying diagnosis of interstitial lung disease versus 45% of the non-infected group (p<0.01). Overall post-operative complications occurred more frequently in the PSI group vs. non-infected group 77% vs. 25% (p<0.01) and airway complications in 86% vs. 44% (p<0.01). Hospital length of stay was longer in the PSI group with the median of 78 versus 31 days in the non-infected group (p<0.01). Results of logistical modeling showed high risk of PSI with presence of post-LT airway complications (OR =10.8 95% CI 1.7- 72.5) and presence of post operative complications (OR=10.6, 95% CI 1.8-63.5). There was no difference in the incidence of readmissions, acute cellular rejection or 1 year mortality between the two cohorts.

Conclusion: PSI remain a prevalent yet under-studied complication. Airway or post-operative complications after LT were associated with PSI. One-year outcomes were similar in LT recipients with and without PSI.

Characteristics of Patients with Infected and Non-Infected Pleural Effusions After Lung Transplant

Variable	All Patients	No Infection (N= 22)	Infection (N= 16)	p-value
Male Gender, N (%)	27 (71)	16 (73)	11 (69)	0.79
Age, years Mean ± SD	62.05± 5.99	62.50 ± 6.7	61.44 ± 4.98	0.60
Race, N (%)				
Black	5 (13)	4 (18)	1 (6)	0.36
Hispanic	1 (3)	1 (5)	0 (0)	
White	32 (84)	17 (77)	15 (94)	
Underlying Lung Disease, N (%)				
Interstitial Lung Disease	24 (63)	10 (45)	14 (88)	<0.01
Chronic Obstructive Pulmonary Disease	5 (13)	3 (14)	2 (13)	
Other	9 (24)	9 (41)	0 (0)	
History of Diabetes- A1C, Mean ± SD	6.32 ± 1.26	6.59 ± 1.52	5.95 ± 0.63	0.09
Steroid Use Pre-Transplant, N (%)	26 (68)	12 (55)	14 (88)	<0.05
Infections, Pre-Transplant, N (%)	12 (32)	6(27)	6 (38)	0.50
Lung Allocation Score, Mean ± SD	65.55 ± 20.10	61.91± 18.61	70.56 ± 21.57	0.19
Bilateral, N (%)	33 (87)	18 (82)	15 (94)	0.43
Ischemic Time, Mean ± SD	323.62 ± 64.85	311.19 ± 61.21	339.94 ± 67.79	0.19
Post-Operative Complications, N (%)	17 (45)	5 (23)	12 (75)	<0.01
Airway Complications, N (%)	12 (32)	3 (14)	9 (56)	<0.01
Post-Transplant Length of Stay, Mean ± SD	56.17 ± 51.37	38.35 ± 35.43	78.44 ± 60.13	0.03

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Pneumonia in the Early Post-Lung Transplant Period: A Prospective Study

L.N. Walti,[1] Q. Mohiuddin,[2] R. Bitterman,[1] T. Martinu,[3] M. Aversa,[3] A. Sidhu,[3] L. Del Sorbo,[4] and S. Husain.[1] [1]Multi Organ Transplant Center, Infectious Diseases, University Health Network, University of Toronto, Toronto, ON, Canada; [2]Infection Prevention and Control, University Health Network, University of Toronto, Toronto, ON, Canada; [3]Toronto Lung Transplant Program, University Health Network, University of Toronto, Toronto, ON, Canada; and the [4]Interdepartmental Division of Critical Care Medicine, University Health Network, University of Toronto, Toronto, ON, Canada.

Purpose: Hospital- (HAP) and Ventilator-associated pneumonia (VAP) are important complications early (<30 days) after lung transplantation (LT). However, current incidence, risk factors at LT and outcomes are not well reported.

Methods: We included all recipients who underwent LT 07/2019-02/2020 at our institution. We prospectively collected epidemiological and microbiological data in the first 30 days post-LT. We assessed incidence and