Clinical Outcomes in Lung Transplantation in People Living with HIV: A Competing Risk Analysis

1168

German A. Contreras[1], George Golovko [2]

Infectious Diseases, Department of Internal Medicine, University of Texas Medical Branch at Galveston, Galveston, TX, USA, [2] Department of Computational Biology, University of Texas Medical Branch at Galveston, Galveston, TX, USA.

BACKGROUND

- Little is known about post-transplant outcomes in people living with HIV (PLWH). Traditional survival analysis typically assumes the presence of a single outcome, but in real-world scenarios, multiple competing events can influence survival and other key metrics. This study aims to assess clinical outcomes in PLWH post-LTx using a competing risk analysis to better understand the true incidence of complications and death.

METHODS

Retrospective cohort study of PLWH and non-PLWH

✓*Inclusion criteria*: Aged 18 and older, who underwent LTx between 2022 and 2024

✓*Data source*: Data were collected from 64 healthcare organizations within the TriNetX U.S. Network.



✓*Statistical methods*: We applied the Aalen-Johansen method to estimate the cumulative incidence function (CIF) for three post-transplant outcomes:

- *Non-infection complications* (e.g., surgical complications).
- *Infection complications* (CMV, bacterial pneumonia, bacteremia, mycosis, CDI, RSV), and death.

✓The analysis spanned one year after transplantation, stratifying by HIV status.

RESULTS

✓ 63 PLWH and 3,874 non-PLWH were included

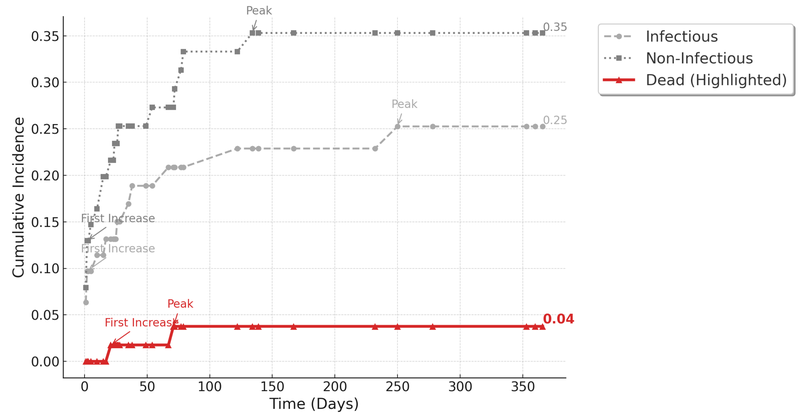
✓ The median age at the time of transplantation was 56 years for both groups

✓ A high proportion of males (66.1% vs. 59%) and non-Hispanics (71% vs. 67.1%) in both cohorts.

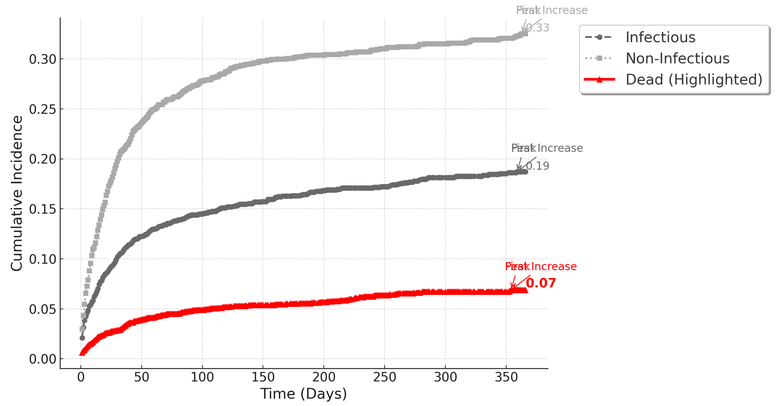
✓ ART: 55% Integrase inhibitor-based regimens
45% Protease inhibitor-based regimens
5% NNRTI-based regimens

Lung Transplant outcomes in PLWH are similar to outcomes in non-PLWH. CMV disease is a growing problem in both populations

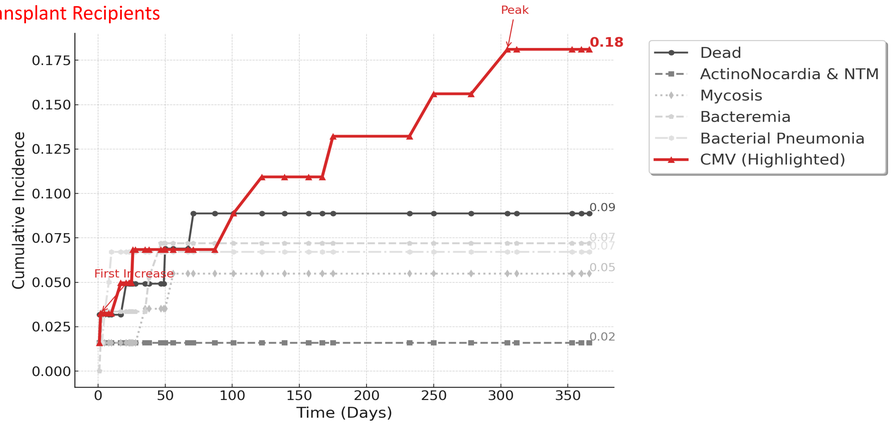
1 year Cumulative Incidence on Majors Outcomes in PLWH with Lung Transplant Recipients



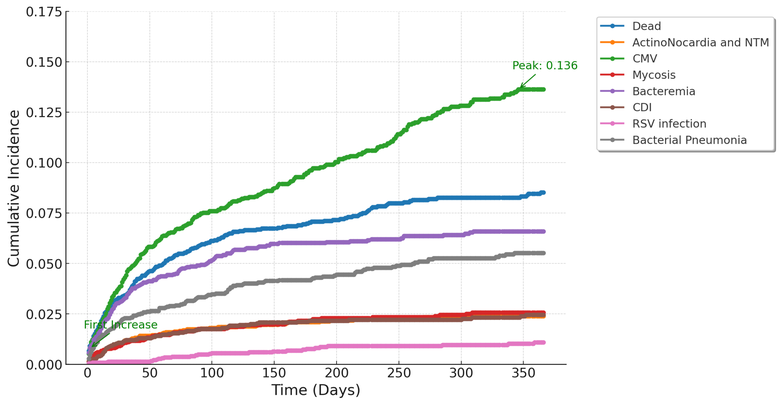
1-year Cumulative Incidence on Majors Outcomes in non-PLWH with Lung Transplant Recipients



1-year Cumulative Incidence on Majors Infectious Diseases Outcomes in PLWH with Lung Transplant Recipients



1-year Cumulative Incidence on Majors Infectious Diseases Outcomes in non-PLWH with Lung Transplant Recipients



Footnote to Figures These plots visualize the cumulative incidence (lines) of a specified outcome over time, as estimated using the Aalen-Johansen method, demonstrating non-infectious events as the most prevalent outcomes across 1 years of follow-up amomg PLWH and non-PLWH. B) CMV is the most robust upward trend, highlighted with a bold red and green line for emphasis. The visualization effectively captures the temporal dynamics of infection risks, facilitating a clear understanding of which conditions warrant the most attention. ActinoNocardia and NTM: Actinomycosis, Nocardia and non-tuberculous mycobacteria.

CONCLUSIONS

PLWH undergoing LTx experience a distinct post-transplant complication profile, particularly regarding infection risks. Despite a higher incidence of infection complications, PLWH had lower mortality within the first year post-LTx, suggesting that further investigation into tailored infection prevention strategies and post-transplant management is warranted. These findings underscore the importance of using competing risk analysis to capture the full spectrum of outcomes in this unique patient population.