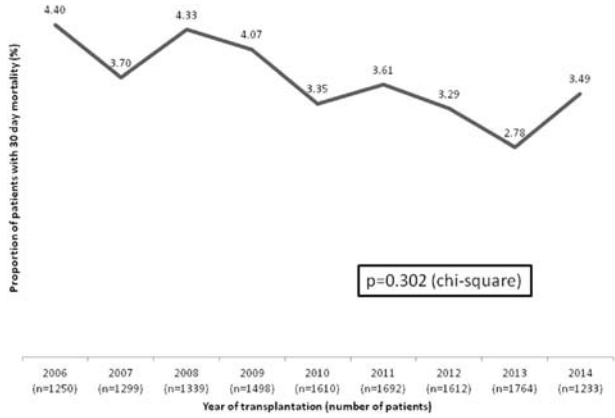
trends in the incidence of 30 day mortality during the post-lung allocation score (LAS) era and determine its independent predictors.

Methods: We queried the UNOS database for adult LT patients from 2006-14. Patients with dual organ or previous transplantation and those with missing survival data were excluded. With 30 day mortality as the primary outcome variable, donor, recipient and procedure related variables were analyzed as potential predictors. Multivariate logistic regression analysis was conducted to determine independent associations.

Results: The overall 30 day mortality was 3.6% (482/13297) and yearly incidence remained stable (p=0.302, Figure). Among patients with 30 day mortality where cause of graft failure had been reported, 'primary non-function' (118/162, 72.8%) was the most common etiology. Underlying diagnosis other than obstructive airway disease or cystic fibrosis (adjusted OR: 1.48, 1.14-1.92; p=0.004), history of non-transplant cardiac or lung surgery (1.62, 1.06-2.48; p=0.026), mean pulmonary pressures>35 mm Hg (1.57, 1.22-2.02; p<0.001), disabled or worse functional status at transplant (1.31, 1.04-1.66; p=0.024), use of extra-corporeal membrane oxygenation as bridge to transplant (1.84, 1.1-3.1; p=0.021), LAS at match (0.99, 0.98-0.998, p=0.014), ischemic time>6 hours (1.57, 1.25-1.96; p<0.001) and blunt injury as the mechanism of donor death (1.41, 1.13-1.76; p=0.002) were independent predictors of 30 day mortality.

Conclusion: Early mortality after LT has remained stable in the post LAS era. A specific etiology for graft failure is not reported among majority of patients. Early mortality after LT appears to be largely related to recipient characteristics at the time of listing and transplantation although blunt trauma as the mechanism of donor death and long ischemic time are additional adverse prognostic variables.



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Rothman Index Predicts Perioperative Outcomes After Lung Transplantation

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Purpose: Re-admission after lung transplantation (Ltx) surgery to the Intensive Care Unit (ICU) is associated with higher morbidity and mortality. Recognizing factors associated with re-admission to the ICU may identify recipients at greatest risk for poor outcomes. The Rothman Index (RI) is an acuity metric that incorporates 26 variables. The maximal and optimal RI is 100, and a low RI score is associated with declining or poor clinical status. There is no available literature that assesses the utility of RI in predicting patient outcomes after Ltx. This study aims to determine whether RI at multiple points in time after Ltx can predict short and long term outcomes.

Methods: This is a retrospective cohort study of single and bilateral Ltx at our center between June 1st 2014 and August 31st 2016. RI was calculated for every patient throughout hospital stay at various time points. This includes before Ltx, immediately after Ltx, at the day of transfer out of the ICU, and at the day of hospital discharge. The outcomes of interest were mechanical ventilator days, reintubation rates, ICU and hospital lengths of stay (LOS), ICU readmission, hospital readmission within 30 days and survival. Linear regression was used to analyze the continuous variables and logistic regression was used to analyze categorical outcomes.

Results: 76 patients satisfied the inclusion and exclusion criteria. Lower RI immediately after Ltx was significantly associated with longer duration of mechanical ventilation and ICU LOS (p-values: 0.024 and 0.03 respectively). Lower RI at ICU discharge was significantly associated with more ICU readmission and longer hospital LOS (p-values: 0.006 and 0.048 respectively).

Conclusion: In this study, RI immediately after Ltx was a strong predictor of duration of mechanical ventilation and ICU LOS, and RI at the time of ICU discharge was a strong predictor of ICU readmission and hospital LOS. Identifying recipients that are likely to be re-admitted to the ICU after Ltx may help to closer monitor those patients which might need additional support to prevent re-admission. RI enables us to identify Ltx recipients with a higher likelihood of ICU readmission.

The RI score can serve as a prognostic factor after Ltx and should be considered when patients are being admitted to ICU after LTx and discharged from the ICU.

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Demographic Disparities in Post-Lung Transplant Mortality

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Purpose: We examine whether there are disparities in post-lung transplant mortality by gender, age, and sex since the implementation of the lung allocation score (LAS). Identifying characteristics associated with higher risk of mortality can allow for closer monitoring and prognostication for patients.

Methods: Using SRTR, we performed a retrospective observational study of adult lung transplant recipients from 5/1/2005-7/31/2015. Cox regression was used to compare hazard ratios by race (African American; AA and non-African American; non-AA), sex, and age (18-30, 31-40, 41-60 and 61-80) after adjusting for donor and recipient characteristics, as well as transplant procedure type and LAS.

Results: Differences in risk of post-transplant mortality by gender and age categories were significant (Figure; logrank p<0.001), while there was no significant difference in mortality between AA and non-AA recipients (Figure; p=0.2). In the adjusted model, relative to recipients aged 41-60, recipients aged 18-30 and 61-81 years had 25% and 36% higher risk of mortality, respectively (aHR = $_{1.09}1.25_{1.44}$ and $_{1.28}1.36_{1.45}$), while recipients aged 31-40 had 18% lower risk (aHR= $_{0.72}0.82_{0.95}$) (Table). Relative to comparable male recipients, female recipients had 9% lower risk of death (aHR=0.02), while there was no significant difference between AA and non-AA recipients (p=0.8).

Conclusion: Differences exist in lung transplant outcomes by sex and age, whereby women had lower risk of death and recipients aged 18-30 and 61-81 had higher risk of death relative to 41-60 year old recipients. Unlike liver and heart transplants, there was no significant difference by race in lung transplant outcomes. Further investigation into potential biological mechanisms is warranted.