

## Decreased survival of simultaneous heart-kidney transplant recipients in the new heart allocation era

M Shin, et al. *JHLT* August 2023 | <https://doi.org/10.1016/j.healun.2023.08.006>

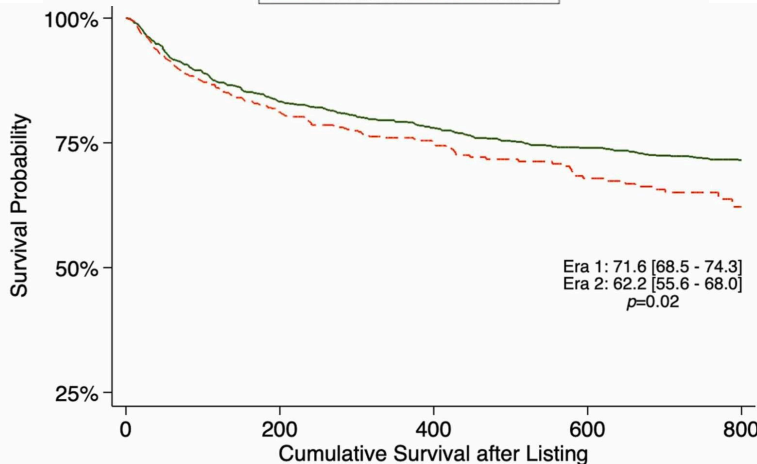
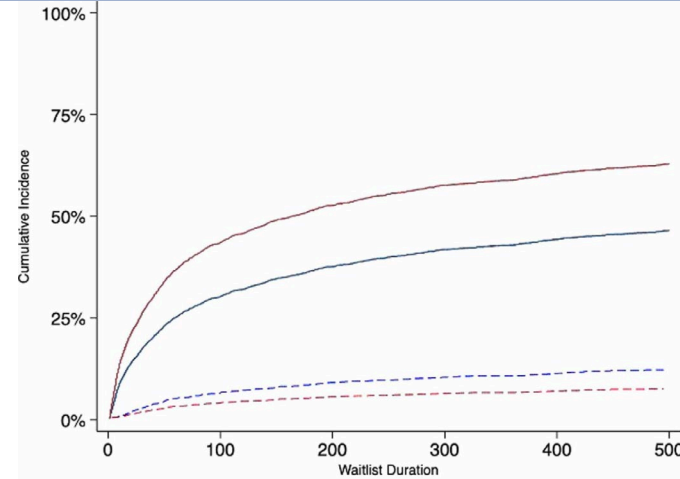
### Study Highlights

**Objective:** In 2018, the United Network for Organ Sharing (UNOS) implemented modifications to the heart allocation policy, aiming to reduce waitlist mortality. This study investigates the impact of the revised allocation system on the waitlist and posttransplant outcomes for simultaneous heart-kidney transplantation.

**Methods:** The study included adult patients listed for SHKT between 2012 and 2021, cross-validated across the Thoracic and Kidney UNOS databases. Patients were categorized by listing era. The waitlist outcomes, posttransplant survival, and posttransplant renal graft function were analyzed.

**Results:** Among 2,588 patients, Era 1 (2012-2018) had 1,406 (54.1%) and Era 2 (2019-2021) had 1,182 (45.9%). In Era 2, the likelihood of transplant increased, and waitlist mortality decreased ( $p < 0.01$ , respectively). However, 2-year posttransplant survival dropped ( $p < 0.01$ ) in Era 2. Actuarial survival, considering both phases, was markedly lower in Era 2 ( $p = 0.02$ ). Additionally, Era 2 had a higher risk of renal graft failure ( $p < 0.01$ ).

**Conclusions:** The allocation policy change has demonstrated an improvement in waitlist outcomes for patients listed for SHKT but may come at the cost of worsened posttransplant results.



Number at risk	0	200	400	600	800
Era 1	949	783	723	671	635
Era 2	736	447	223	136	39

### Reviewer's Comments

- SHKT's recent listings and transplants have been consistently on the rise, with a notable increase in the number of sick patients.
- Of particular significance is the first to document the mortality rate following SHKT worsened after the allocation change using UNOS data
- Future analysis, such as propensity matching, for mitigating selection bias - the inherent limitations of a retrospective study - is expected.

### Limitations

- Retrospective analysis of the UNOS database, limiting granularity
- Inability to capture variables that may influence outcomes, such as ex-vivo perfusion
- Baseline rate of data entry errors
- Limited 2-year study duration and short follow-up for the recent era
- Actuarial survival analysis does not consider delisted patients

## Lung transplant survival with past and concomitant cardiac revascularization

Tran, et al. *JHLT* Oct 2023 | <https://doi.org/10.1016/j.healun.2023.05.007>

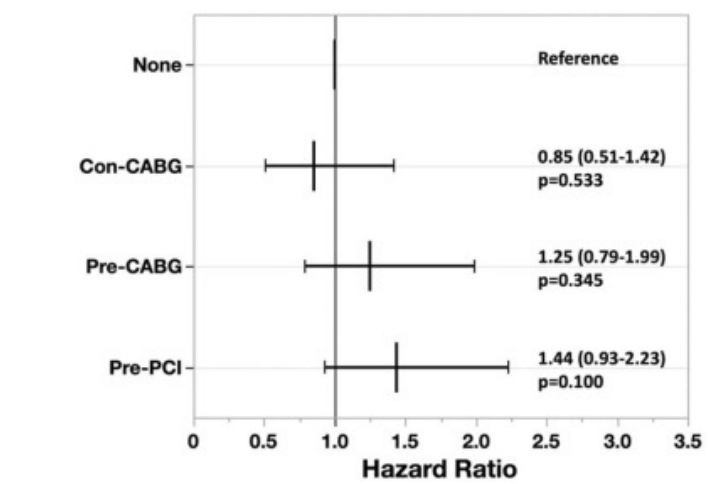
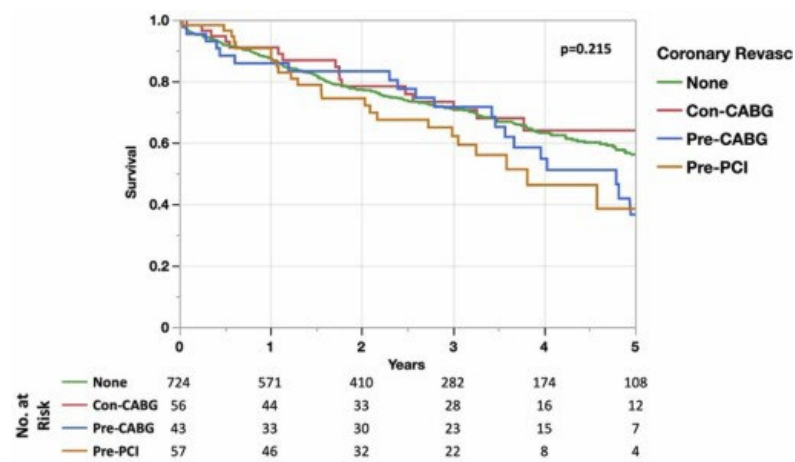
### Study Highlights

**Objective:** With the increasing number of lung transplants (LTx), patients with coronary artery disease (CAD) are now widely accepted as candidates with perioperative revascularization. The aim of the study is to review outcomes of perioperative revascularization, focusing on concomitant coronary bypass grafting (CABG).

**Methods:** A single center retrospective review of lung transplant patients from 2012 to 2021 (n=880). Patients were divided into 4 groups; 1) preoperative percutaneous coronary intervention (PCI), 2) preoperative CABG, 3) concomitant CABG, 4) no revascularization

**Results:** Groups were well balanced on demographics, ischemic time and lung allocation score. The no revascularization group had less idiopathic pulmonary fibrosis. The preoperative CABG group had higher portion of single LTx. There was no significance in survival with Kaplan-Meier analysis (p=0.471). Median survival was 5.6 yrs (Con-CABG), 4.8 yrs (pre-CABG), 3.8 yrs (pre-PCI) and 6.3 yrs (No revascularization). No significant difference in mortality risk between the groups in the log-rank test.

**Conclusions:** Perioperative cardiac revascularization did not affect survival outcomes after lung transplant. Patients requiring revascularization can safely undergo lung transplantation with no significant difference in survival



**Legend:** 5-year survival (top) and multivariable Cox regression with p-value of 0.283 (bottom)

### Reviewer's Comments

- The presence of CAD may not significantly impact lung transplant survival.
- Revascularization procedures seem to help counteract the potential negative effects of CAD on survival outcomes, underscoring the importance of appropriate perioperative revascularization.
- Perioperative cardiovascular morbidity have yet to be elucidated.

### Limitations

- The limited sample size could potentially weaken the strength of the analysis, especially for non-significantly different but low median survival of certain groups.
- Patients who underwent revascularization had higher tendency to receive single LTx more than double, which can affect survival outcomes.
- Non-revascularization group was significantly younger, which may contribute to non-transplant associated survival
- The decision for PCI vs CABG was guided by a committee, influencing the types of patients receiving each therapy and potentially affecting generalizability
- Patients eligible for preoperative CABG or PCI might have fewer risk factors and greater stability compared to the average lung transplant patient

# Heart Transplant Waitlist Outcomes and Wait Time by Center Volume in the Pre-2018 Allocation Change Era

Critsinelis, et al., *ASAIO Journal* September 2023 | <https://doi.org/10.1097/MAT.0000000000001966>

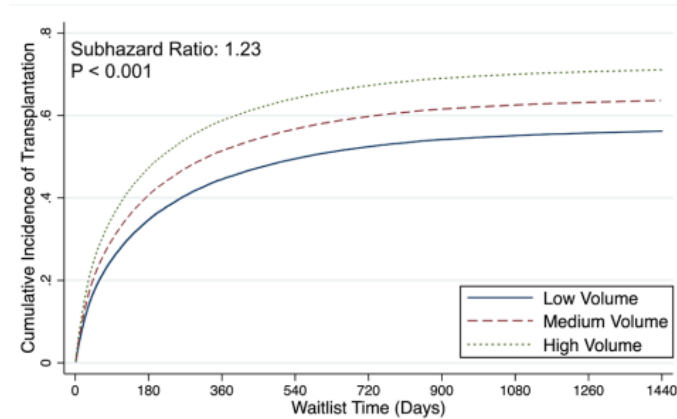
## Study Highlights

**Objective:** In cardiac transplantation, understanding the disparities in patient outcomes across centers of varying volumes is crucial for refining allocation policies and improving patient care. This study aimed to explore these disparities in waitlist outcomes, particularly before the 2018 allocation change.

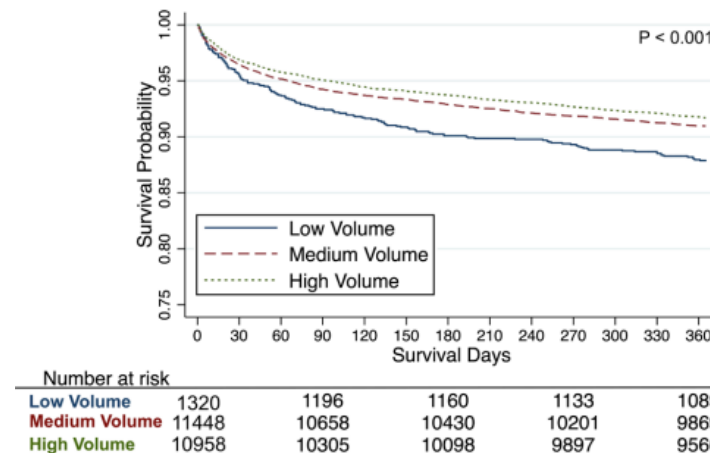
**Methods:** Data were sourced from the UNOS database. Adult heart transplant recipients from January 2008 to October 2018, were included. Centers were categorized as low (<10 Tx/year), medium (10-30 Tx/year), and high volume (>30 Tx/year).

**Results:** High-volume centers had higher rates of transplantation (71.3%) and lower rates of delisting due to death or deterioration (12.6%). Low-volume centers had higher rates of LVAD implantation (6.7%) and transferring to another institution (5.0%). Cox proportional hazards analysis showed high-volume centers had a lower hazard of death or delisting before transplant (HR 0.86, p<0.001).

**Conclusion:** High-volume centers generally achieve better transplantation outcomes and have fewer negative results. This study lays the foundation for monitoring the impact of allocation change policies and adapting them to bridge these disparities.



**Figure 1:** Cumulative Incidence of Transplantation Stratified by Center Volume



**Figure 2:** Survival Probability Stratified by Center Volume

## Reviewer's Comments

- The study offers critical insights into the impact of center volume on waitlist times, mortality rates, and post-transplant outcomes, which could be pivotal for healthcare policy.
- This comprehensive analysis covers multiple endpoints and suggests that institutional experience, volume and infrastructure are key determinants.
- It raises vital questions about the trade-off between high-volume centers and transplant accessibility, aligning with concerns about regionalization.
- It calls for further research into institutional and regional variations, as well as exploring the utilization and the role of mechanical circulatory support.

## Limitations

- The study's reliance on pre-2018 UNOS data limits its current applicability, and neglects more recent allocation changes and COVID-19 impacts.
- The UNOS database lacks granular data on institutional factors and selection criteria as well as the influence of UNOS regions on outcomes.
- The study excludes specific patient groups such as those with prior heart transplants, or multiple organ transplants and omits socioeconomic factors, limiting its generalizability.