Heart Transplantation Outcomes in Multiorgan Transplants

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OBJECTIVES	ABSTRACT	METHODS
We sought to elucidate the differences in outcomes between	Using the UNOS registry, we compared outcomes in HL, HLK and HLL recipients	HL recipients were more likely to have

outcomes between

HLK, and HLL recipients. Analysis was performed using multivariate Cox proportional hazard regression model that adjusted for age, sex, race, diagnosis of diabetes, ischemic time, recipient wait-time, HLA mismatch, need for dialysis, and need for life support.

patients undergoing multiorgan transplants.

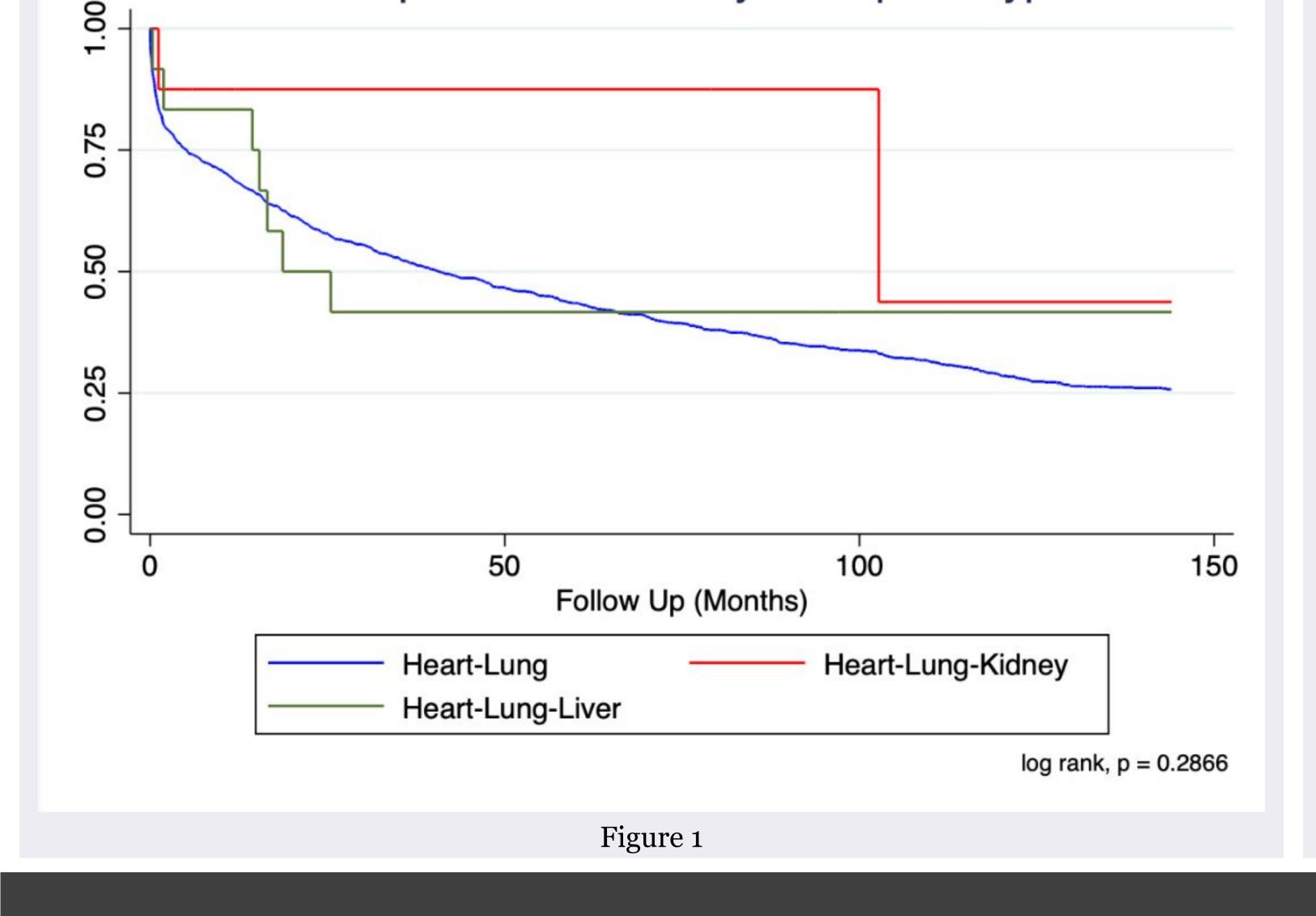
Specifically we assessed the differences in outcomes between patients undergoing Heart-Lung (HL) Heart-Lung-Kidney (HLK) and Heart-Lung-Liver (HLL) multiorgan transplantation

Patients who were younger than 18 years old or who were lost-to-follow-up were excluded. Kaplan-Meier survival analysis was performed.

undergone prior non-transplant cardiac surgery (HL 91.6% vs HLK 75.0% vs HLL 75.0% p=0.033).

HLK patients were more likely to require VAD support (HL 1.2%) vs HLK 12.5% vs HLT 0.0% p=0.015), have higher serum creatinine $(HL 1.0 mg/dL \pm 0.6 vs)$ HLK 2.4 ± 1.3 vs HLL $0.9 \pm 0.5 \, p < 0.001),$ require dialysis (HL

Transplant Outcomes by Transplant Type



1.5% HLK 37.5% and HLL 0.0% p<0.001), and have higher pulmonary capillary wedge pressures (HL 15.5mmHg \pm 9.4 vs HLK 26.2 ± 11.0 vs HLL $13.0 \pm 10.1 \text{ p}=0.038$).

There was no significant difference in mortality between the groups.

CONCLUSION



Despite increasing risk factors, Heart-lung transplant concomitant with either kidney or liver transplant did not affect survival compared to heart-lung transplants alone.

Carefully selected patients may benefit from triple organ transplantation, however, ethical issues of organ utilization may arise.

- 1. Cardiac Transplantation: Current **Outcomes and Contemporary** Controversies. Kittleson MM, Kobashigawa JA. JACC Heart Fail. 2017 Dec;5(12):857-868. doi: 10.1016/j.jchf.2017.08.021. Review.
- The future direction of the adult heart 2. allocation system in the United States. D.M. Meyer, J.G. Rogers, L.B. Edwards, et al. Am J Transplant, 15 (2015), pp. 44-54
- 3. OPTN/UNOS policy notice proposal to modify the adult heart allocation system. December 2016. Available at: https://optn.transplant.hrsa.gov/gover nance/public-comment/modify-adult-h eart-allocation-2016-2nd-round/.