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Meeting Abstract: Abstracts From the American Heart Association's 2024 Scientific Sessions and the American Heart Association's 2024 Resuscitation Science Symposium

Abstract 4138936: Outcomes of Over 1,000 Heart Transplants Using Donation After Circulatory Death Donors in the United States

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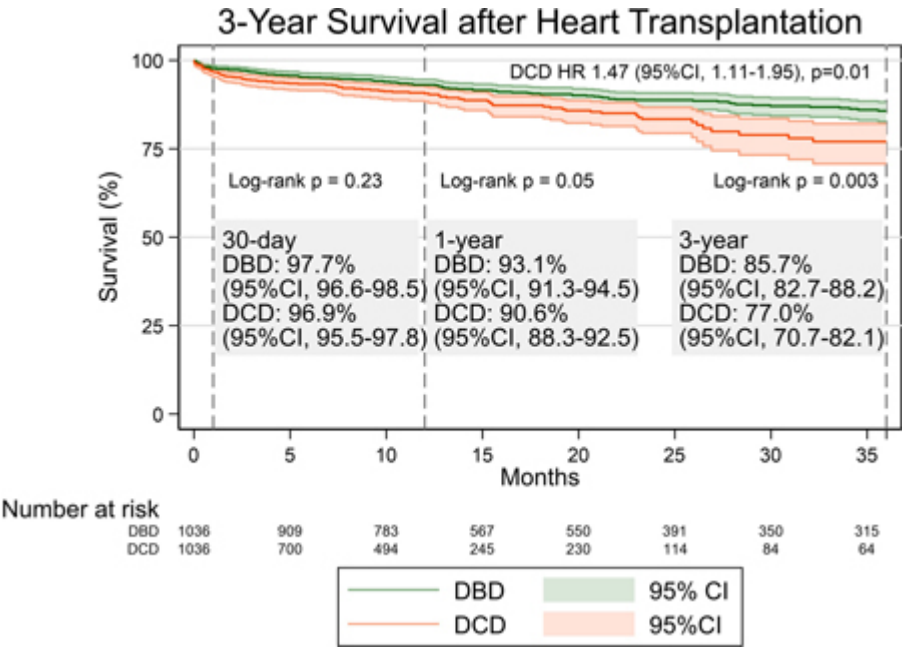
Abstract

Introduction: Heart transplantation (HT) with donation after circulatory death (DCD) donors has been increasing exponentially since its resurgence in the US. The aim of this study was to evaluate national outcomes of DCD HT.

Methods: Adult HT recipients from 2019-2023 were identified from the United Network Organ Sharing registry. Patients were categorized based on donor-type (donation after brain death [DBD] or DCD). Kaplan-Meier and multivariable Cox regression analyses were used for survival. A propensity-matched analysis was also performed. A further sub-analysis was conducted comparing outcomes of DCD HT using normothermic regional perfusion (NRP) versus direct procurement and perfusion (DPP).

Results: Among 19,684 HTs identified, 14,122 DBD and 1,139 DCD were included. The number of DCD HT increased from 7 in 2019 to 534 in 2023. In unadjusted analysis, 30-day (97.1% vs 96.7%, $p=0.46$) and 1-year (91.2% vs 90.5%, $p=0.59$) survival were comparable between DBD vs. DCD donors, although 3-year survival was worse in DCD recipients (DBD 83.7% vs DCD 76.8%, $p=0.05$; DCD multivariable HR 1.25, 95% CI 1.02-1.54; $p=0.03$). Similar findings were observed in the propensity-matched analysis, where DCD recipients had worse 1- and 3-year survival, findings that were confirmed after risk-adjustment (Figure). In sub-analysis comparing NRP versus DPP, unadjusted survival was comparable at all time intervals although there was a trend towards improved survival with NRP at 3-years (NRP 85.7% vs DPP 74.4%, $p=0.08$; NRP multivariable HR 0.63, 95% CI 0.39-1.02; $p=0.06$).

Conclusions: This represents the largest real-world series to date of DCD HT and associated outcomes. DCD HT has increased substantially in the past several years and now comprises 15% of all HT performed in the United States. Although early outcomes are comparable with DBD donors, mid-term survival was worse by use of DCD, warranting further research. Although not statistically significant, use of NRP technique when using DCD for HT may confer a survival benefit.



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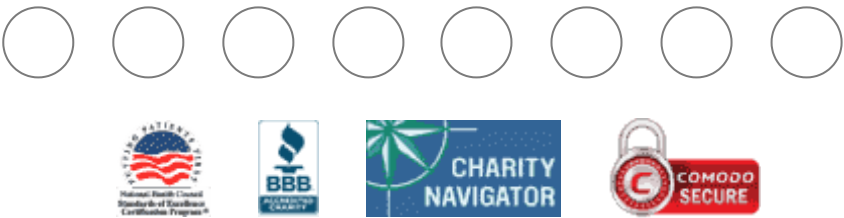
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