Incidence of Pericardial Effusions and Atrial Fibrillation in DCD vs. DBD Orthotopic Heart Transplantation

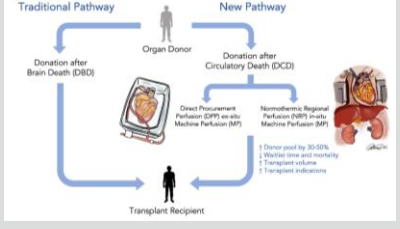
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Background

- Orthotopic heart transplantation (OHT) is the definitive treatment for end-stage heart failure.
- Donation after Brain Death (DBD) was the standard method of donor heart procurement until Donation after Circulatory Death (DCD) was reintroduced in 2019.
- A DCD donor experiences irreversible cessation of circulatory and respiratory function. After a mandatory warm ischemic period, the donor heart is recovered and reanimated using normothermic machine perfusion before transplantation.



Study population

- A total of 251 adults receiving orthotopic heart transplants at the Massachusetts General Hospital in Boston, MA, between 2018 and 2024 were divided into two groups – DCD (49%) and DBD (51%).
- DCD transplants were limited to DPP.

Recipient Demographics by Group	DBD	DCD	p-value
Age [med. (IQR)]	60 (53-67)	58 (49-66)	0.128
Men	75%	76%	1.000
Race			0.051
White	79%	85%	
Black	5%	8%	
Other	20%	7%	
BMI [med. (IQR)]	27 (23-31)	28 (25-31)	0.186
LVAD Bridge	29%	39%	0.009*
Donor Demographics by Group			
Age [med. (IQR)]	36 (28-46)	36 (28-42)	0.301
Men	64%	78%	0.008*
Race			<0.001*
White	65%	85%	
Black	10%	5%	
Other	17%	10%	
BMI [med. (IQR)]	27 (23-32)	28 (25-32)	0.164

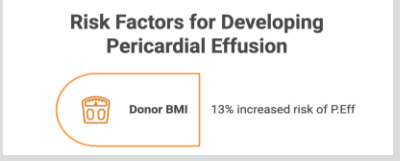
* = statistically significant

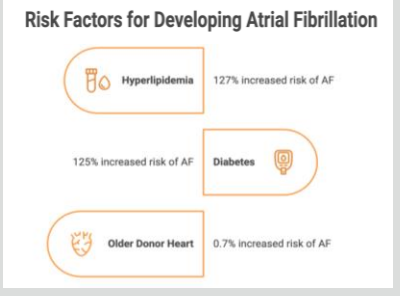
Methods

- We performed a retrospective, single-center analysis. Recipient and donor data were obtained from electronic medical record review and from the United Network for Organ Sharing (UNOS) database.
- Patients were categorized by DCD or DBD donor type.
- The primary outcome for this study was the development of atrial fibrillation or pericardial effusion within the first-year post-transplant. The incidence and predictors of the two outcomes were analyzed individually.
- Descriptive statistics and logistic regression analyses were performed using RStudio. Statistical significance was defined by a p-value less than 0.05 (95% confidence).

Results

- The incidence of both outcomes within the first year was similar between groups.
- First-year outcomes over-all were also similar between donor types.





Discussion and Conclusions

- We found that donor and recipient characteristics, rather than donor type, were associated with developing atrial fibrillation and pericardial effusions.
- Given that the literature on the incidence of these outcomes in terms of DCD vs. DBD transplants, this study shows that there might be differences in the recipient and donor that should be further explored.
- Larger studies are needed to validate these associations and assess additional post-transplant outcomes such as rejection, primary graft dysfunction, and survival.