



Heart Failure and Cardiomyopathies

COMPARISON OF DONATION TECHNIQUES IN THE US WITH A FOCUS ON NORMOTHERMIC REGIONAL PERFUSION

Moderated Poster Contributions
Moderated Poster Theater 02
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Session Title: Cardiac Transplantation: From Donor Optimization to Recipient Management
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Background: The characteristics of heart donation after circulatory death (DCD) and normothermic regional perfusion (NRP) are unknown.

Methods: UNOS database was analyzed for adult heart transplants from Dec 2019 to July 2023. Retransplant and multiorgan recipients were excluded from outcome analysis. Data is noted as median (IQ range).

Results: Total 12504 adult heart transplants were reported with known retrieval technique, donation after brain death (DBD): n= 11,606, core-cooling (CC) after DCD: n= 792 and NRP: n=106. While DCD utilization increased over time, NRP constituted 1% of the total heart donations in 2023 in the US. The DCD donations (NRP and CC) were more common in blood group O and durable LVAD implanted recipients. With DCD, recipients were less likely to be listed status 1 or 2 and distance traveled with donor heart was farther. Heart retrieval to transplant rates were lower in DCD, likely due to a stringent ex-situ monitoring capability commonly used with DCD (i.e., Organ Care System). While simultaneous kidney donation rates were similar, DCD liver donation rates were lower. Table 1 summarizes the findings. Median follow-up time was 211 days with both DCD techniques and 365 days with DBD. There was no difference in length of stay or graft failure rate. The one-year survival was comparable (NRP 91%, CC 93%, DBD 92%, p= 0.5).

Conclusion: DCD hearts were preferred in recipients likely to wait longer (group O, LVAD or lower listing status). NRP remains a novel technique in the US with low adoption rates.

Table 1: Comparison of characteristics between NRP, CC and DBD

	NRP (n= 106)	Core-cooling (n= 792)	DBD (n= 11,606)	P-value
Recipient age	56 (41 - 64)	57 (47 - 64)	56 (45 - 63)	0.072
Blood type O recipient	53 (50%)	404 (51%)	4717 (41%)	0.001
Days on waitlist	42 (16 - 301)	34 (10 - 150)	30 (9 - 134)	0.312
Durable LVAD prior to transplant	37 (35%)	207 (26%)	2398 (21%)	0.042
All ventricular assist device	46 (45%)	258 (34%)	3498 (31%)	0.020
Listing status 1 or 2	33 (31%)	274 (35%)	7234 (62%)	0.001
Donor age	29 (23 - 37)	30 (24 - 36)	32 (25 - 40)	0.001
Donor HCV NAT+	7 (7%)	36 (5%)	700 (7%)	0.415
Distance- donor to transplant centers (nautical miles)	442 (200 - 564)	319 (134 - 565)	230 (100 - 399)	0.001
Heart retrieval to transplant rate	91%	92%	99%	0.001
Simultaneous kidney donation	97 (92%)	709 (90%)	10374 (89%)	0.750
Simultaneous liver donation	57 (54%)	467 (59%)	10158 (88%)	0.001
Length of stay (days)	16 (12 - 24)	17 (12 - 26)	17 (12 - 27)	0.146
Acute rejection prior to discharge	7 (8%)	41 (6%)	715 (8%)	0.738
Graft failure	11 (12%)	70 (10%)	1084 (11%)	0.741