

Caution for blood type O candidates: Increased Waitlist Time on VA-ECMO Decreases Survival to Heart Transplantation

Objective: Venoarterial extracorporeal membrane oxygenation (ECMO) support provides listing at status 1 for heart transplant (HTx) under the new allocation system. However, prolonged ECMO support may cause complications. We sought to determine the 1) association between waitlist days and reason for waitlist removal and 2) independent predictors of prolonged ECMO support defined as ?8 days.

Methods: The UNOS database was queried for adult ECMO-supported HTx candidates listed for a primary single-organ HTx between October 18, 2018 and March 31, 2021. Candidates were dichotomized based on waitlist time with analysis of delisting reasons at each day within 7 days. A further analysis was performed in which candidates were dichotomized based waitlist time above or below 7 days with reasons for delisting compared as candidates must be reverified each week. Baseline recipient characteristics were entered into a multivariable logistic regression model to determine independent predictors of waitlist removal ?8 days.

Results: 243 candidates were included. As waitlist time increased, the proportion of delisting due to death or clinical deterioration increased from 33/224 (14.7%) (?2 days) to 22/78 (28.2%) (?7 days). Concurrently, the proportion of HTx decreased from 184/224 (82.1%) (?2 days) to 49/78 (62.8%) (?7 days). Of candidates waitlisted for ?8 days, 40/68 (58.8%) survived to HTx while 21/68 (30.9%) were removed due to death or clinical deterioration (Figure A). On multivariable analysis, blood type O (aOR 2.34, 95% CI 1.22–4.46) was associated with an increased likelihood of waitlisting ?8 days, while older age (aOR 0.97 per year, 95% CI 0.95–0.998) and concomitant IABP support (aOR 0.33, 95% CI 0.11–0.95) were protective (Figure B).

Conclusion: As waitlist time increases, delisting due to death or clinical deterioration increases and survival to HTx decreases. Blood type O is independently associated with waitlisting for more than 1 week. Since blood type is non-modifiable, blood type O candidates may require prioritization or alternative bridging strategies.

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	≤/ days (N=175)	≥8 days (N=68)	Rugiuo	Multivariable OP	P.value.
Ane v	53 (39, 60)	51 [32 59]	0.29	0.97 (0.95_0.998)	0.04
Female cender	46 (26 3)	22 (32 4)	0.34	1.66 (0.82-3.35)	0.16
Periale gender	27 2 (24 2 24 6)	22 (32.4)	0.54	1.00 (0.02-3.30)	0.10
Blood type O	61 (34.0)	27.3 [24.0, 32.8]	<0.00	2 34 (1 22-4 46)	0.01
Ethnicity	01 (04.3)	33 (31.4)	0.45	2.04 (1.22-4.40)	0.01
Maite	122 (70.2)	42 (62 2)	0.40	Def	
Black	25 (10.3)	43 (03.2)		1.01 (0.36-2.94)	0.08
Othor	27 (15.4)	15 (22.1)		1.67 (0.65 2.64)	0.30
Donion*	27 (13.4)	10 (22.1)	0.10	1.00 (0.00-0.08)	0.55
Nertheast	E7 (22 A)	14 (20.6)	0.10	Def	
Southeast	45 (25.7)	27 (20.0)		1 87 (0 80-4 30)	0.15
Michaet	40 (22.0)	17 (35.0)		1.67 (0.64-2.96)	0.10
Mont	40 (22.9)	10 (14.7)		1.07 (0.04-5.00)	0.33
Private incurrence	102 (59.0)	40 (59 9)	0.00	1.04 (0.37-2.90)	0.94
Heart failure atiology	103 (30.5)	40 (00.0)	0.55	1.20 (0.00-2.30)	0.01
Nen ischemie	100 (69 6)	44 (64 7)	0.56	Def	
lechemic	55 (31.4)	24 (35.3)		1 55 (0 70-3 45)	0.28
Modical history	35 (31.4)	24 (00.0)		1.00 (0.70-0.40)	0.20
Dishoton	24 (10.5)	17 (25.0)	0.25	1 22 (0 60 2 02)	0.40
CVA	11 (6.4)	6 (9 9)	0.55	1 30 (0.42 4 68)	0.49
icp.	EQ (22.1)	24 (25 2)	0.75	1 16 (0 60 2 21)	0.00
Emolding	40 (22.0)	24 (35.3)	0.049	1.02 (0.02 4.01)	0.07
Drior cardiac euroen/	54 (30.0)	24 (35.3)	0.51	1 17 (0 58 2 33)	0.00
Instrong dependent	06 (54.0)	25 (51.5)	0.62	0.04 (0.49, 1.96)	0.00
Ventilater dependent	50 (34.5)	16 (22.5)	0.03	0.84 (0.40-1.00)	0.67
APD	36 (33.1)	E (7.4)	0.02	0.02 (0.05-1.75)	0.00
Creatinine >1.5 mg/dl	39 (22.3)	23 (33.8)	0.02	1 74 (0 84-3 63)	0.14
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