

Table S1 Univariable and multivariable cox regression: 5-year survival

Variable	Univariable		Multivariable	
	Hazard ratio	P value	Hazard ratio	P value
Recipient factors				
Age (years)				
18–24	1.34	0.001	2.02	<0.001
25–34	0.85	0.018	1.25	0.051
35–44	0.82	0.001	1.03	0.764
45–54	0.86	0.001	Reference	
55–64	1.22	<0.001	1.20	0.002
≥65	1.39	0.001	1.40	0.004
Blood group				
A	0.96	0.380		
B	0.98	0.742		
O	1.03	0.517		
AB	1.10	0.308		
BMI				
<18.5	0.97	0.571		
18.5–24.9	0.94	0.150		
25.0–29.9	1.08	0.095		
30.0–34.9	1.04	0.570		
35.0–39.9	1.01	0.935		
≥40.0	1.58	0.265		
Diagnosis				
Alpha-1-antitrypsin deficiency	0.85	0.025	Reference	
COPD/emphysema	1.16	<0.001	1.12	0.104
Cystic fibrosis	0.87	0.025	0.95	0.666
IPF/UIP	1.17	0.005	1.14	0.114
Pulmonary hypertension	0.78	0.015	1.04	0.787
GFR (mL/min)				
<10	1.91	0.016	1.73	0.103
10–19	0.89	0.820		
20–29	1.50	0.164		
30–39	1.15	0.423		
40–49	1.01	0.952		
≥50	0.88	0.152		
Life support before transplant	0.90	0.412		

Table S1 (continued)

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Variable	Univariable		Multivariable	
	Hazard ratio	P value	Hazard ratio	P value
Waitlist time				
<6 months	1.16	<0.001	1.00	0.993
6 months to 1 year	1.11	0.032	Reference	
1–2 years	0.91	0.035	0.92	0.213
>2 years	0.73	<0.001	0.79	0.003
Donor/transplant factors				
Donor age (years)				
<15	1.06	0.489		
15–24	0.92	0.051		
25–34	0.98	0.706		
35–44	1.03	0.610		
45–54	1.10	0.096		
≥55	1.10	0.349		
Donor cause of death				
CVA	1.09	0.040	1.18	0.001
Anoxia	0.70	0.002	0.78	0.045
Head trauma	0.93	0.065		
Donor cigarette use	1.10	0.044	1.08	0.132
Donor ethnicity: African American	1.06	0.049	1.00	0.898
Donor GFR (mL/min)				
<10	0.97	0.889		
10–19	1.06	0.749		
20–29	1.36	0.018	1.47	0.008
30–39	0.92	0.468		
40–49	1.11	0.206		
≥50	0.92	0.140		
Gender match				
Male to male	1.05	0.251		
Male to female	1.05	0.249		
Female to male	1.04	0.591		
Female to female	0.88	0.007	0.89	0.034
ABO incompatible	1.02	0.968		

Table S1 (continued)

Table S1 (continued)

Variable	Univariable		Multivariable	
	Hazard ratio	P value	Hazard ratio	P value
HLA mismatch level				
0	2.51	0.194		
1	0.85	0.563		
2	0.82	0.085		
3	0.87	0.032	0.86	0.052
4	1.00	0.981		
5	1.00	0.919		
6	1.13	0.011	1.06	0.278
Ischemic time (hours)				
<1.0	0.96	0.879		
1.0–1.9	1.35	<0.001	1.25	0.036
2.0–2.9	1.14	0.016	1.04	0.589
3.0–3.9	1.13	0.008	1.06	0.413
4.0–4.9	1.00	0.930		
≥5.0	0.77	<0.001	0.96	0.527
Size match: undersized donor	0.96	0.586		
Size match: oversized donor	0.98	0.761		
Unilateral lung transplant	1.38	<0.001	1.18	0.013

P<0.05 is significant on multivariable analysis.

Table S2 Propensity score matching for unilateral transplant negates difference in ischemia time

Variable		20+ year survivors	1–20 year survivors	Bias percent reduction	P value
Unilateral transplant (%)	Unmatched	23.5%	63.6%		<0.001
	Matched	23.5%	23.5%	100%	1.000
Cold ischemia time (hours)	Unmatched	5.20	4.39		<0.001
	Matched	5.20	5.23	97.3%	0.858

Table S3 Female recipients with male versus female donors matched using significant variables from *Tables 1-3*

Variable		Male donor	Female donor	Bias percent reduction	P value
Recipient age (years)	Matched	48.9	48.6	1.9	0.709
Recipient BMI	Matched	23.0	23.0	0.7	0.884
Blood Group A	Matched	40.1%	41.1%	-2.1	0.682
Blood Group B	Matched	12.1%	10.5%	4.8	0.340
Blood Group O	Matched	43.8%	43.3%	1.0	0.839
Blood Group AB	Matched	4.1%	5.1%	-4.8	0.335
Alpha-1-antitrypsin	Matched	7.5%	6.3%	4.4	0.372
Cystic fibrosis	Matched	11.4%	12.9%	-4.6	0.356
COPD/emphysema	Matched	51.4%	52.2%	-1.5	0.762
IPF/UIP	Matched	11.4%	9.6%	5.8	0.251
Pulmonary hypertension	Matched	6.0%	6.0%	0.0	1.000
Recipient GFR (mL/min)	Matched	91.3	89.4	6.3	0.208
Waitlist time (years)	Matched	1.1	1.2	-8.9	0.081
Donor age (years)	Matched	26.1	32.6	-51.2	0.000
African American donor	Matched	32.7%	21.6%	16.8	0.001
Donor cigarette use	Matched	25.1%	31.5%	-14.0	0.005
Donor: recipient height	Matched	1.1	1.0	53.5	0.000
Donor GFR (mL/min)	Matched	75.4	86.6	-27.4	0.000
Cold ischemia time (hours)	Matched	4.3	4.5	-9.8	0.053
HLA mismatch level	Matched	4.6	4.6	-4.1	0.414
Unilateral lung transplant	Matched	61.5%	55.2%	12.9	0.011

Table S4 Multivariable cox regression for graft survival

Variable	20-year survival		10-year survival	
	Hazard ratio	P value	Hazard ratio	P value
Recipient factors				
Age (years)				
18–24				
25–34	0.78	<0.001	0.60	<0.001
35–44	0.84	<0.001	0.56	<0.001
45–54			0.58	<0.001
55–64	1.23	<0.001	0.72	0.005
≥65	1.47	<0.001	0.84	0.232
Blood group				
A	1.03	0.520	0.96	0.268
B				
O	1.10	0.063		
AB	1.21	0.023	1.18	0.047
BMI				
<18.5	0.90	0.427	0.96	0.544
18.5–24.9	0.84	0.176	0.91	0.122
25.0–29.9	0.96	0.774	1.02	0.739
30.0–34.9	0.94	0.637		
≥35.0				
Diagnosis				
Alpha-1-antitrypsin deficiency			Reference	
COPD/emphysema	1.11	0.021	1.13	0.023
Cystic fibrosis	1.08	0.215	1.03	0.705
IPF/UIP	1.02	0.741	1.03	0.597
Pulmonary hypertension	0.97	0.774	1.03	0.782
GFR (mL/min)				
<10	1.86	0.021	2.03	0.011
≥10				
Life support before transplant	0.97	0.712	0.88	0.223
Waitlist time				
<6 months	0.96	0.382	0.98	0.633
6 months to 1 year	Reference		Reference	
1–2 years	0.89	0.007	0.91	0.047
>2 years	0.79	<0.001	0.81	<0.001

Table S4 (continued)

Table S4 (continued)

Variable	20-year survival		10-year survival	
	Hazard ratio	P value	Hazard ratio	P value
Donor/transplant factors				
Donor age (years)				
<35				
35–44	1.04	0.275	1.08	0.075
≥45				
Donor cause of death				
CVA	Reference		Reference	
Anoxia	0.89	0.108	0.83	0.035
Head trauma	0.92	0.018	0.92	0.023
Donor cigarette use	1.07	0.038	1.06	0.129
Donor ethnicity: African American	1.04	0.078	1.03	0.259
Donor GFR (mL/min)				
<20				
20–29	1.25	0.032	1.31	0.017
≥30				
Gender match				
Male to male	0.95	0.179		
Male to female				
Female to male				
Female to female	0.87	<0.001	0.88	0.002
HLA mismatch level				
≤2				
3	0.89	0.011	0.87	0.011
4				
5				
6			1.09	0.034
Ischemic time (hours)				
<1.0				
1.0–1.9	1.18	0.023	1.20	0.023
2.0–2.9	1.06	0.221	1.07	0.225
3.0–3.9	1.04	0.326	1.08	0.130
4.0–4.9				
≥5.0	1.01	0.849	0.99	0.869
Unilateral lung transplant	1.30	<0.001	1.29	<0.001

P<0.05 is significant on multivariable analysis.

Table S5 1–20-year survivors subgroup analysis by graft versus non-graft cause of death

	Graft failure (N=1,100)	Non-graft (N=4,600)	P value
Preoperative characteristics			
Age (years)	48.6 (12.0)	49.8 (11.4)	0.002
BMI (kg/m ²)	23.5 (4.8)	23.5 (4.7)	0.88
Blood group			
A	433 (39.4%)	1,909 (41.5%)	0.2
B	129 (11.7%)	493 (10.7%)	0.33
O	488 (44.4%)	1,977 (43.0%)	0.4
AB	49 (4.5%)	220 (4.8%)	0.64
Diagnosis			
Alpha-1-antitrypsin deficiency	103 (9.4%)	458 (10.0%)	0.55
COPD/emphysema	515 (46.8%)	2,231 (48.5%)	0.32
Cystic fibrosis	137 (12.5%)	534 (11.6%)	0.43
IPF/UIP	54 (4.9%)	195 (4.2%)	0.33
Pulmonary hypertension	152 (13.8%)	664 (14.4%)	0.6
Male recipient	507 (46.1%)	2,260 (49.1%)	0.07
African American recipient	70 (6.4%)	257 (5.6%)	0.32
Waitlist time (years), mean (SD)	1.0 (1.0)	1.0 (0.9)	0.26
Donor age (years), mean (SD)	30.7 (13.2)	30.2 (12.8)	0.22
Male donor	709 (64.5%)	2,979 (64.8%)	0.85
African American donor	150 (13.6%)	617 (13.4%)	0.85
Donor cigarette use	262 (23.8%)	1,092 (23.7%)	0.96
Donor creatinine, mean (SD)	1.2 (1.9)	1.2 (1.7)	0.79
Donor COD			
Anoxia	51 (4.6%)	180 (3.9%)	0.27
CVA/Stroke	368 (33.5%)	1,545 (33.6%)	0.93
Head Trauma	547 (49.7%)	2,341 (50.9%)	0.49
Perioperative characteristics			
Hospital admission	59 (5.4%)	211 (4.6%)	0.28
ICU admission	17 (1.5%)	85 (1.8%)	0.5
Cold ischemia time (hours), mean (SD)	4.5 (1.7)	4.4 (1.7)	0.11
Recipient creatinine, mean (SD)	0.9 (1.2)	0.9 (1.3)	0.66
Life support	26 (2.4%)	130 (2.8%)	0.4

Table S5 (continued)

Table S5 (continued)

	Graft failure (N=1,100)	Non-graft (N=4,600)	P value
ABO matching			
Identical	1,020 (92.7%)	4,193 (91.2%)	0.093
Compatible	79 (7.2%)	405 (8.8%)	0.083
Incompatible	1 (0.1%)	2 (0.0%)	0.54
HLA mismatch level			
0	1 (0.1%)	1 (0.0%)	0.27
1	3 (0.3%)	20 (0.4%)	0.45
2	33 (3.0%)	126 (2.7%)	0.64
3	98 (8.9%)	461 (10.0%)	0.26
4	237 (21.5%)	1,047 (22.8%)	0.39
5	314 (28.5%)	1,351 (29.4%)	0.59
6	186 (16.9%)	780 (17.0%)	0.97
Gender match (donor to recipient)			
Male to male	411 (37.4%)	1,836 (39.9%)	0.12
Male to female	298 (27.1%)	1,143 (24.8%)	0.12
Female to female	96 (8.7%)	424 (9.2%)	0.61
Female to male	295 (26.8%)	1,197 (26.0%)	0.59
Single lung transplant	643 (58.5%)	2,985 (64.9%)	<0.001

P<0.05 is significant.