SUPPLEMENTAL MATERIAL

1) **Supplemental Tables**

Table I: Predictors of undergoing LVAD versus OHT (excluding ECPR and VV ECMOs)			
	Odds ratio	**Confidence interval**	**P-value**
LVAD presence	0.01	0.001 – 0.29	0.046
Respiratory failure	0.25	0.1 - 0.6	0.003
Milrinone	0.37	0.18 – 0.74	0.006
Cardiogenic shock	0.38	0.19 – 0.76	0.007
Weight	0.98	0.97 – 1	0.03
Cardiomyopathy	2.1	1.08 – 4.32	0.03
Inotropes on ECLS	3.7	1.41 – 10.4	0.01
Cardiac pacemaker	6.3	1.35 – 47.6	0.04
An OR<1 denotes an LVAD strategy is more likely while OR>1 denotes that an OHT strategy is more likely.			

Table II: Predictors of mortality in OHT group (excluding ECPR and VV ECMOs)			
	Odds ratio	**Confidence interval**	**P-value**
ECMO discontinuation	0.019	0.004 – 0.08	<0.001
Year of ECMO	0.025	0.004 – 0.13	<0.001
Renal replacement therapy	2.85	1 – 8.8	0.06
Respiratory failure	5.8	1.38 – 26.6	0.018
An OR>1 denotes increased mortality whereas OR<1 denotes decreased mortality.			

Table III: Predictors of mortality in LVAD group (excluding ECPR and VV ECMOs)

	Odds ratio	Confidence interval	P-value
ECMO discontinuation	0.08	0.014 – 0.30	<0.001
Age	1.08	1.03 – 1.14	0.002
Surgical site bleeding	6.0	0.9 – 45.9	0.07
Peripheral cannulation bleeding	22.1	2.7 – 290	0.008
An OR>1 denotes increased mortality whereas OR<1 denotes decreased mortality.			

Table IV: Baseline demographic and clinical characteristics of transplant patients between 2011-2017 vs 2019

	All Transplants N=206	2011-2017 N=170	2019 N=36	P-value
Demographics				
Age (years, SD)	45.8 ± 14.0	45.2 ± 13.8	48.4 ± 14.7	0.21
Weight (kg, SD)	78.2 ± 20.5	77.8 ± 20.7	79.9 ± 20.5	0.58
Female	63 (30.6)	53 (31.2)	10 (27.8)	0.72
Race/Ethnicity				0.0001
White	106 (51.5)	85 (50)	21 (58.3)	
Black	18 (8.7)	13 (7.6)	5 (13.9)	
Asian	48 (23.3)	47 (27.6)	1 (2.8)	
Hispanic	10 (7.9)	8 (4.7)	2 (5.6)	
Comorbidities				
Coronary artery disease	14 (6.8)	11 (6.5)	3 (8.3)	0.97
Cardiomyopathy	103 (50.0)	87 (51.2)	16 (44.4)	0.58
Myocarditis	10 (4.9)	8 (4.7)	2 (5.6)	1
Valvular disease	10 (4.9)	9 (5.3)	1 (2.8)	0.83

Congenital heart disease	6 (2.9)	4 (2.4)	2 (5.6)	0.62
Arrhythmias	31 (15)	26 (15.3)	5 (13.9)	1
Hx of heart transplant	6 (2.9)	6 (3.5)	0 (0)	0.55
LVAD presence	1 (0.5)	1 (0.6)	0 (0)	1
Endocarditis	4 (1.9)	3 (1.8)	1 (2.8)	1
Hypertension	11 (5.3)	8 (4.7)	3 (8.3)	0.64
Hyperlipidemia	8 (3.9)	7 (4.1)	1 (2.8)	1
Diabetes Mellitus	14 (6.8)	10 (5.9)	4 (11.1)	0.44
CKD/ESRD	18 (8.7)	10 (5.9)	8 (22.2)	0.008
COPD	3 (1.5)	2 (1.2)	1 (2.8)	1
Encephalopathy/Neurologic disorder	12 (5.8)	9 (5.3)	3 (8.3)	0.45
Cerebrovascular Accident	4 (1.9)	4 (2.4)	0 (0)	0.79
Anemia	23. (6.3)	9 (5.3)	4 (11.1)	0.35
Thrombocytopenia	5 (2.4)	4 (2.4)	1 (2.8)	1
Bleeding	13. (6.3)	13 (7.9)	0 (0)	0.18
Cancer	3 (1.5)	3 (1.8)	0 (0)	0.97
Initial Presentation				
Acute coronary syndrome	17 (8.3)	15 (8.8)	2 (5.6)	0.75
Cardiogenic Shock	81 (39.3)	60 (35.3)	21 (58.3)	0.018
Cardiac arrest	36 (17.5)	27 (15.9)	9 (25)	0.29
Cardiac transplant rejection/complication	16 (7.8)	13 (7.6)	3 (8.3)	0.83
End-organ injury on presentation				
Acute kidney injury	30 (14.6)	21 (12.4)	9 (25)	0.09
Acid base disturbances	5 (2.4)	4 (2.4)	1 (2.8)	1
Liver injury	10 (4.9)	9 (5.3)	1 (2.8)	0.83
CKD=Chronic kidney disease, COPD=Chronic obstructive pulmonary disease, ECMO=Extracorporeal membrane oxygenation, ESRD=End-stage renal disease, LVAD=Left ventricular assist device, Hx=History				

Table V: Hemodynamic and cardiac indices of transplant patients between 2011-2017 vs 2019				
	All Transplants **N=206**	**2011-2017** **N=170**	**2019** **N=36**	**P-value**
Systolic blood pressure (mmHg)	84.0 ± 20.8	83.1 ± 22.1	87.1 ± 15.8	0.35
Diastolic blood pressure (mmHg)	53.4 ± 13.6	53.4 ± 14.5	53.3 ± 10.0	0.96
Mean blood pressure (mmHg)	62.3 ± 15.2	61.7 ± 16.1	64.4 ± 11.8	0.40
Systolic pulmonary artery pressure (mmHg)	40.8 ± 14.2	39.5 ± 15.7	43.9 ± 9.9	0.37
Diastolic pulmonary artery pressure (mmHg)	24.9 ± 8.5	25.0 ± 9.4	23.8 ± 6.3	0.69
Mean pulmonary artery pressure (mmHg)	30.5 ± 9.5	30.3 ± 10.5	31.0 ± 7.2	0.84
Pulmonary capillary wedge pressure (mmHg)	19.5 ± 9.9	19.0 ± 11.0	21.5 ± 0.70	0.76
Cardiac Index (l/min/m^2)	2.61 ± 2.9	2.86 ± 3.37	1.96 ± 0.7	0.57
SvO$_2$ (%)	58.19 ± 20.1	63.9 ± 18.3	34.5 ± 13.7	<0.001
SvO$_2$= Pulmonary artery oxygen saturation.				

Table VI: ECMO specifications/information of transplant patients between 2011-2017 vs 2019				
	All Transplants **N=206**	**2011-2017** **N=170**	**2019** **N=36**	**P-value**
ECMO Mode				0.38
Venous-Arterial (VA)	184 (89.3)	151 (88.8)	33 (91.7)	
Venous-venous to Venous-arterial conversion	5 (2.4)	3 (1.8)	5 (2.4)	
Venous-Venous-Arterial (VVA)	3 (1.5)	2 (1.2)	1 (2.8)	
Venous-Venous (VV)	6 (2.9)	6 (3.5)	0 (0)	
Support Type				0.90
Cardiac	185 (89.8)	152 (89.4)	33 (91.7)	
ECPR	15 (7.3)	13 (7.6)	2 (5.6)	
Pulmonary	6 (2.9)	5 (2.9)	1 (2.8)	
Procedure Timing				0.0045
On-ECMO support	153 (74.3)	119 (70.0)	34 (94.4)	
After ECMO support	53 (25.7)	51 (30.0)	2 (5.6)	
Pre-ECMO Cardiac Arrest	49 (23.8)	41 (24.1)	8 (22.2)	0.10

ECMO=Extracorporeal membrane oxygenation; ECPR=Extracorporeal cardiopulmonary resuscitation; LVAD=Left ventricular assist device

Table VII: Outcomes of transplant patients between 2011-2017 vs 2019				
	All Transplants **N=206**	**2011-2017** **N=170**	**2019** **N=36**	**P-value**
Length of stay (days)	56.9 ± 45.1	58.0 ± 48.6	51.8 ± 24.5	0.45
In-Hospital Mortality	58 (28.2)	56 (32.9)	2 (5.6)	0.002
ECMO support duration (hours)	249.0 ± 335.8	253.9 ± 352.4	225.9 ± 244.8	0.65
ECMO=Extracorporeal membrane oxygenation				

Table VIII: Predictors of decannulation before definitive treatment.			
	Odds Ratio	**95% Confidence Interval**	**P-value**
Age	0.98	0.96 – 1.00	0.13
Gender	1.76	0.97 – 3.2	0.06
Year of ECMO	0.41	0.17 – 0.94	0.04
Discontinuation intent	3.6	1.68 – 8.3	0.001
Cardiac arrest	1.94	0.98 – 3.8	0.05
IABP	1.86	1 – 3.47	0.048
Cardiac transplant rejection	5.77	0.89 – 48.4	0.07

Table IX: Demographics and baseline characteristics by ACS						
	Non-ACS LVAD N=126	**Non-ACS OHT N=215**	**P value**	**ACS LVAD N=41**	**ACS OHT N=19**	**P value**
Demographics						
Age (years, SD)	49.5 ± 15.0	45.7 ± 14.0	0.019	54.6 ± 10.2	46.4 ± 11.0	0.006
Weight (kg, SD)	88.7 ± 23.1	78.3 ± 20.6	<0.001	89.1 ± 20.7	77.4 ± 16.1	0.054
Female	32 (25.4)	66 (30.7)	0.27	12 (29.3)	7 (36.8)	0.77
Race/Ethnicity			0.003			0.08
White	78 (61.9)	110 (51.2)		28 (68.3)	10 (52.6)	
Black	18 (14.3)	19 (8.8)		4 (9.8)	1 (5.3)	
Asian	9 (7.1)	48 (22.3)		2 (4.9)	5 (26.3)	
Hispanic	6 (4.8)	11 (5.1)		0 (0.0)	2 (10.5)	
Comorbidities						
Coronary artery disease	15 (11.9)	11 (5.1)	0.04	10 (24.4)	5 (26.3)	1
Cardiomyopathy	48 (38.1)	112 (52.1)	0.02	12 (29.3)	6 (31.6)	1
Myocarditis	6 (4.8)	12 (5.6)	0.93	0 (0)	1 (5.3)	0.69
Valvular disease	9 (7.1)	9 (4.2)	0.78	1 (2.4)	2 (10.5)	0.48
Congenital heart disease	0 (0)	6 (2.8)	0.14	0 (0)	1 (5.3)	0.69
Arrhythmias	18 (14.3)	34 (15.8)	0.82	6 (14.6)	0 (0)	0.19
Hx of heart transplant	0 (0)	20 (9.3)	0.001	1 (2.4)	2 (10.5)	0.48
LVAD presence	8 (6.3)	1 (0.5)	0.003	3 (7.3)	0 (0)	0.56
Hypertension	8 (6.3)	9 (4.2)	0.53	3 (7.3)	2 (10.5)	1
Hyperlipidemia	2 (1.6)	9 (4.2)	0.32	6 (14.6)	1 (5.3)	0.53
Diabetes Mellitus	15 (11.9)	16 (7.4)	0.23	6 (14.6)	2 (10.5)	0.97
CKD/ESRD	12 (9.5)	18 (8.4)	0.20	3 (7.3)	0 (0)	1
COPD	4 (3.2)	4 (1.9)	0.68	3 (7.3)	0 (0)	0.56
Encephalopathy/Neurologic disorder	9 (7.1)	14 (6.5)	0.9	5 (10.2)	0 (0)	0.56
Cerebrovascular Accident	1 (0.8)	3 (1.4)	1	1 (2.4)	1 (5.3)	1
Anemia	7 (5.6)	12 (5.6)	1	3 (7.3)	2 (10.5)	1
Thrombocytopenia	6 (4.8)	5 (2.3)	0.36	1 (2.4)	1 (5.3)	1
Bleeding	3 (2.4)	11 (5.1)	0.34	3 (7.3)	2 (10.5)	1
Cancer	5 (4)	3 (1.4)	0.25	0 (0)	0 (0)	NA
Initial Presentation						

Acute coronary syndrome	NA	NA	NA	41	19	NA
Cardiogenic Shock	88 (69.8)	79 (36.7)	0.001	36 (87.8)	12 (36.2)	0.06
Cardiac arrest	31 (24.6)	36 (16.7)	0.10	17 (41.5)	6 (31.6)	0.65
End-organ injury on presentation						
Acute kidney injury	27 (21.4)	30 (14)	0.10	15 (36.6)	5 (26.3)	0.62
Acid base disturbances	7 (5.6)	5 (2.3)	0.20	4 (9.8)	1 (5.3)	0.93
Liver injury	7 (5.6)	10 (4.7)	0.91	5 (12.2)	0 (0)	0.27
CKD=Chronic kidney disease, COPD=Chronic obstructive pulmonary disease, ECMO=Extracorporeal membrane oxygenation, ESRD=End-stage renal disease, LVAD=Left ventricular assist device, Hx=History						

Table X: Hemodynamics by ACS						
	Non-ACS LVAD N=126	**Non-ACS OHT N=215**	**P value**	**ACS LVAD N=41**	**ACS OHT N=19**	**P value**
Systolic blood pressure (mmHg)	88.7 ± 20.1	84.9 ± 21.9	0.18	91.2 ± 26.4	90.6 ± 15.0	0.95
Diastolic blood pressure (mmHg)	58.3 ± 15.0	53.9 ± 13.5	0.02	59.5 ± 23.3	55.1 ± 12.4	0.59
Mean blood pressure (mmHg)	69.2 ± 15.6	63.0 ± 15.8	0.006	69.2 ± 24.0	65.1 ± 13.3	0.61
Systolic pulmonary artery pressure (mmHg)	44.8 ± 13.3	40.6 ± 14.3	0.16	40.4 ± 11.1	32 ± 7.6	0.18
Diastolic pulmonary artery pressure (mmHg)	26.0 ± 7.9	24.6 ± 8.5	0.41	24.7 ± 8.0	20.8 ± 6.0	0.38
Mean pulmonary artery pressure (mmHg)	33.5 ± 9.2	30.6 ± 9.7	0.17	30.5 ± 8.6	24.6 ± 5.1	0.24
Pulmonary capillary wedge pressure (mmHg)	24.4 ± 8.9	19.5 ± 9.9	0.23	27.0 ± 8.5	26.0 ± 0	0.92
Cardiac Index (l/min/m^2)	2.02 ± 0.8	2.52 ± 2.7	0.42	1.93 ± 0.3	1.71 ± 0.4	0.29
SvO$_2$ (%)	50.8 ± 17.6	56.0 ± 20.1	0.33	61.9 ± 18.5	70.7 ± 20.1	0.5

Table XI: ECMO specifications/information by ACS						
	Non-ACS LVAD N=126	**Non-ACS OHT N=215**	**P value**	**ACS LVAD N=41**	**ACS OHT N=19**	**P value**
ECMO Mode			0.035			0.10
Venous-Arterial (VA)	107 (84.9)	192 (89.3)		36 (87.8)	18 (94.7)	
Venous-venous to Venous-arterial conversion	13 (10.3)	6 (2.8)		5 (12.2%)	0 (0)	
Venous-Venous-Arterial (VVA)	3 (2.4)	3 (1.4)		0 (0)	1 (5.3)	
Venous-Venous (VV)	2 (1.6)	6 (2.8)		NA	NA	
Support Type			0.22			0.80
Cardiac	113 (89.7)	194 (90.2)		37 (90.2)	16 (84.2)	
ECPR	12 (9.5)	14 (6.5)		4 (9.8)	3 (15.8)	
Pulmonary	1 (0.8)	7 (3.3)		0 (0.0)	0 (0)	
Procedure Timing			0.11			0.03
On-ECMO support	109 (86.5)	170 (79.1)		34 (82.9)	10 (52.6)	
After ECMO support	17 (13.5)	45 (20.9)		7 (17.1)	9 (47.4)	
Pre-ECMO Cardiac Arrest	42 (33.3)	43 (20.0)	0.02	17 (41.5)	8 (42.1)	1

Table XII: Outcomes by ACS						
	Non-ACS LVAD N=126	**Non-ACS OHT N=215**	**P value**	**ACS LVAD N=41**	**ACS OHT N=19**	**P value**
Length of stay (days)	54 ± 48	58 ± 48	0.43	36 ± 62	75 ± 45	0.02
In-Hospital Mortality	36 (28.6)	66 (30.7)	0.77	12 (29.3)	2 (10.5)	0.20
ECMO support duration (hours)	231 ± 193	289 ± 488	0.20	205 ± 140	215 ± 266	0.84

Standardized data collection form for the ELSO registry:

https://www.elso.org/Portals/0/Files/PDF/ELSOECLSRegistryForm8.0_2020.pdf