Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

hydroxocobalamin or methylene blue is more effective in relieving vasoplegia as defined by reducing vasopressor requirements.

Methods: This was a retrospective chart review performed at an academic medical center between March 2020 through August 2021. Patients ages 18-89 who received a dose of hydroxocobalamin or methylene blue while in a cardiac intensive care unit for vasoplegia were included for analysis. The primary outcome was the time to reduction of 50% of original vasopressor requirements, defined in norepinephrine equivalents. Secondary outcomes include change in mean arterial pressure (MAP), cardiac index, SVR, ICU length of stay (LOS), mortality, and the need for renal replacement therapy. The primary outcome will be expressed as means with standard deviations as well as a time to event analysis with a Kaplan-Meier Curve and log rank test.

Results: Patients were treated with a one-time 5mg dose of hydroxocobalamin (n=8) or dose(s) of methylene blue (n=15). The time to reduction of 50% of vasopressor requirements was 5.75 hours with hydroxocobalamin and 13.08 hours with methylene blue (p=0.0248). Change in MAP at 4 hours post dose was 7.75 mmHg with hydroxocobalamin and -0.93 mmHg in methylene blue (p=0.150). There was no difference in change in cardiac index (p=0.11), ICU LOS (p=0.11), or mortality (p=1). Change in SVR increased by 428.4 dynes/sec/cm5 with hydroxocobalamin and 95.6 dynes/sec/cm5 with methylene blue (p=0.0238). Need for renal replacement therapy was 62.5% with hydroxocobalamin and 13% with methylene blue (p=0.0257).

Conclusion: Use of hydroxocobalamin for vasoplegia is associated with a significantly faster time to a 50% reduction of vasopressor requirements and an increase in SVR post administration compared to methylene blue. Hydroxocobalamin was also significantly associated with an increase in need for renal replacement therapy. The clinical significance of these effects must be determined in larger, randomized controlled trials.

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Safety and Efficacy of SGLT2i Post Orthotopic Heart Transplantation

S. Sundaravel, R. Zolty, D. Stoller, B. Lowes and S. Lundgren. Cardiology, University of Nebraska Medical Center, Omaha, NE.

Purpose: Diabetes mellitus is common after orthotopic heart transplantation (OHT) due to steroid-induced hyperglycemia. Traditionally, it has been treated using parenteral insulin therapy. The use of sodium-glucose co-transporter 2 inhibitors (SGLT2i) in OHT recipients is not well established.

Methods: A retrospective chart review was performed on all the patients who underwent OHT at our center to identify patients on SGT2i post OHT. Clinical outcomes pre and post SGLT2i therapy were compared using the student t-test.

Results: Out of the 455 patients who had OHT at our single institution, 26 patients were on SGLT2i post OHT (1 patient was dual organ recipient - heart and liver transplant). The baseline characteristics are reported in Table 1. The median days from OHT to initiation of SGLT2i was 780 days (range 40-4986 days), and the median duration of therapy post-OHT was 169 days (range 38-2474 days). There was a statistically significant improvement in the average hemoglobin A1c, weight, and body mass index after starting SGLT2i (Results table). There was a trend towards improving renal function. There was no incidence of systemic infection, hypoglycemia, amputation, or euglycemic diabetic ketoacidosis while on SGLT2i. Two patients were able to discontinue insulin therapy after starting SGLT2i. There was no incidence or progression of cardiac allograft vasculopathy during the therapy. Two patients experienced graft rejection (1Antibody Mediated Rejection and 1 Acute Cellular Rejection) with drop in left ventricular systolic function that recovered after appropriate treatment.

Conclusion: SGLT2i can be used safely in OHT recipients. The renal protective mechanism of SGLT2i could be helpful to combat the nephrotoxicity of calcineurin inhibitors (CNI) used for immunosuppression and help prolong the use of CNI. Further randomized studies are required to explore the complete benefits of SGLT2i in OHT recipients

Table 1: Baseline characteristics:

Pre-Transplant Characteristic	Patients N=26
Age, yr (SD)	51.9 (12.4)
Male sex, N (%)	19 (73.1)
Body Mass Index, kg/m2 (SD)	31.1 (4.7)
Race	
White/Caucasian. N (%)	20 (76.9)
Black/African American, N (%)	5 (19.2)
Asian, N (%)	1 (3.8)
Nonischemic Cardiomyopathy, N (%)	18 (69.2)
Former Smoker, N (%)	18 (69.2)
Diabetes Mellitus, N (%)	16 (61.5)
Hypertension, N (%)	23 (88.5)
Hyperlipidemia, N (%)	19 (73.1)
Chronic Kidney Disease, N (%)	7 (26.9)
COPD, N (%)	2 (7.7)
Obstructive Sleep Apnea, N (%)	8 (30.8)
Hemoglobin A1c, % (SD)	6.7 (1.1)
Fasting glucose, mg/dL (SD)	111.8 (18.1)
Glomerular Filtration Rate, mL/min/1.73 m2 (SD)	66.5 (16.9)
Creatinine, mg/dL (SD)	1.2 (0.2)
Fick Cardiac Output, L/min (SD)	4.9 (1.4)
Fick Cardiac Index, L/min/m2 (SD)	2.4 (0.5)
Peak VO2, mL/kg (SD)	12.5 (2)
VO2 Predicted, % (SD)	47.1 (11.1)
VE/VCO2, (SD)	32.7 (4.3)

Results table:

	Pre-SGLT2i	3-month	P-value	6-month	P-value
Blood Glucose	187.47 (48.3)	139.37 (32.1)	0.0007	166.13 (37.53)	0.11
GFR	65.08 (16.6)	65.1 (17)	0.37	69.7 (20.2)	0.22
Creatinine	1.26 (0.4)	1.24 (0.4)	0.4	1.16 (0.3)	0.18
LVIDd	4.41 (0.59)	4.41 (0.6)	0.3		
Weight	102.8 (21.1)	93.8 (28.2)	0.19	97.9 (23.1)	0.006
BMI	32.6 (5.1)	31.6 (4.8)	0.003	31.3 (4.9)	0.008
A1c	8.3 (1.4)			7.99 (1)	0.04

For those that have paired samples at 1 year:

For BMI – (N=14) – Pre – 32.3kg/m2 (5.2) and 1-year – 30.5kg/m2 (4.2) ------ p-value 0.0225

For weight - (N=14) - Pre – 100.4kg (21.9) and 1-year – 95.8kg (20.4) ------- p-value 0.008

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Lung Transplantation for Post COVID19 End Stage Lung Failure: A Case Series from 3 Latin American Countries

P.F. Undurraga,[1] C. Morales,[2] M.N. Samano,[3] M. Wong Jaen,[4] L.M. Fernandes,[5] J. Dreyse,[6] and P.M. Pego Fernandes.[5] [1]Thoracic Surgery / Lung Transplant, Clinica Las Condes, Santiago, Chile; [2]Cirugia Infantil, Hospital Luis Calvo Mackenna, Santiago, Chile; [3]Lung Transplant, Hospital Israelita Albert Einstein, Sao Pablo, Brazil; [4]Thoracic Surgery, Hospital Christus Muguerza, Monterrey, Mexico; [5]Thoracic Surgery, Sao Paulo University, Sao Pablo, Brazil; and the [6]Pulmonology / Lung Transplant, Clinica Las Condes, Santiago, Chile.

Purpose: Lung transplantation has currently become a therapeutic option in severe cases of COVID-19, which present extensive and irreversible lung damage. We aim to assess demographic characteristics, and evolution of pre-transplant SARSCoV2 infection, complications, and post-transplant survival.

Methods: Retrospective case series from 4 Lung Transplant Centers of 3 Latin American countries: Chile, Brazil, and Mexico, including patients that underwent lung transplantation for post-COVID19 end stage lung failure.

Results: From January 2020 to September 2021, 13 bilateral lung transplants due to severe cases of post-COVID19 lung failure were

performed. 69.2% in men, with an average age of 44 years (range 25 to 61 years). From symptoms onset, average intubation time was 12.9 days, and connection to ECMO was, on average, at 12.3 days, (range 2 to 28 days). Transplants were on average at 85.5 days from the connection to ECMO (range 52 to 167). Mean was BMI was 28.3 kg/m2 (range 24.4 to 35.5). One patient had previous comorbidity (arterial hypertension). Before transplantation, 100% were connected to ECMO, none of them were sedated, 11 achieved standing, 3 of which kept walking, and 53.8% maintained spontaneous ventilation. Transplant surgical approach used was Clamshell in 11 patients and median sternotomy 2. Intra-operative cannulation was performed in 100%, being veno-venous in 2 and veno-arterial in 10 of them. 61.5% of the cases (8 patients) remained on ECMO after surgery, for an average of 6.6 days (0 to 22).61.5% of the patients had complications, being bleeding, vascular stenosis, infections, and kidney failure are described. Overall survival was 53.8% (7 patients) with a median follow-up of 64 days. The 30-day survival rate was 75%. Average time to discharge was 44.6 days after transplantation, with total average time of hospitalization of 142 days (74 to 257).

Conclusion: Transplantation is considered as part of the therapeutic arsenal in those patients who have confirmed irreversibility of lung damage, despite medical support. However, the delay in transplantation and the consequent connection to prolonged ECMO is observed consistently in our countries, probably due to a low rate of organ donation. This exhibits the need for a better assessment on when to perform the transplant, considering the low donor rate of lung transplant programs in Latin American countries.

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Racial Disparities in Death Due to SARS-CoV-2 in the United States: An Analysis of the OPTN Database

S.B. Wolfe,[1] D.C. Paneitz,[1] T. Calero,[2] A. Osho,[1] S. Rabi,[1] S.S. Li,[1] T. Astor,[3] E. Michel,[1] and N.B. Langer.[1] [1]Cardiac Surgery, Massachusetts General Hospital, Boston, MA; [2]University of Southern California, Los Angeles, CA; and the [3]Pulmonary and Critical Care Medicine, Massachusetts General Hospital, Boston, MA.

Purpose: Racial disparities in severe acute respiratory syndrome coronavirus 2 (COVID) incidence and mortality have been demonstrated in the United States (U.S.). Transplant recipients represent a particularly vulnerable population given their comorbidities and immunosuppression. With this in mind, we aimed to evaluate the relationship between race and mortality due to COVID in lung transplant recipients.

Methods: Adult lung transplant recipients in the U.S. were identified using the Organ Procurement and Transplantation (OPTN) database. Multiorgan transplants and patients transplanted after December 31, 2020 were excluded. Recipients who were deceased or lost to follow-up prior to January 2020 were excluded as they were not at risk for death due to COVID. Lung transplant recipients were stratified by race (Black, Hispanic, White, and other race). Death due to COVID was the primary outcome while all-cause mortality and non-COVID mortality were secondary outcomes. Student's t-test, Chi-square test, and Cox proportional hazards models were used for comparisons.

Results: 17,198 recipients met inclusion criteria (1,598 Black, 1,353 Hispanic, 13,755 White, and 492 other race). 231 (1.34%) deaths due to COVID were reported. COVID mortality rate was significantly different (p=0.001) by race, being lowest in White recipients (n=162 [1.18%]) and highest in Hispanic recipients (n=30 [2.22%]). Non-COVID mortality was lowest in Hispanic recipients (n=129 [9.53%]) and highest in Black recipients (n=236 [14.77%]; p=0.008). There was no significant difference in all-cause mortality (p=0.054). After adjustment, Hispanic (HR=2.18; p=0.005) recipients experienced higher rates of mortality due to COVID compared to whites, but no significant difference in Black recipients (HR=1.73; p=0.066). See table 1 for additional predictors of death due to COVID.

Conclusion: Racial disparities in death due to COVID persist in U.S. lung transplant recipients, despite adjusting for social determinants of health.

Table 1: Cox Proportional Hazards Regression for Mortality Due to COVID-19

	Univariate		Multivariate				
Variable	HR	p-value	HR	Std. Error	p-value	95% Confidence Interval	
White	1	.	1	.	.	.	.
Black	1.72	0.042	1.73	0.516	0.066	0.963	3.105
Hispanic	2.75	<0.001	2.18	0.607	0.005	1.265	3.764
Other	1.04	0.946	1.19	0.709	0.770	0.370	3.826
Age at Follow-Up in Years	1.05	<0.001	1.03	0.013	0.020	1.005	1.056
BMI	1.09	<0.001	1.05	0.024	0.030	1.005	1.101
Diagnosis							
Idiopathic Pulmonary Fibrosis	1	.	1	.	.	.	.
COPD/ Emphysema	0.55	0.017	0.67	0.187	0.147	0.384	1.154
Cystic Fibrosis	0.19	0.001	0.53	0.424	0.427	0.110	2.543
Other Pulmonary Fibrosis	1.07	0.822	1.01	0.303	0.977	0.560	1.818
Hypersensitivity Pneumonitis	0.55	0.317	0.66	0.395	0.491	0.207	2.130
Sarcoidosis	0.70	0.494	0.82	0.453	0.712	0.274	2.424
Alpha 1 Antitrypsin Deficiency	0.57	0.342	1.22	0.740	0.739	0.374	4.003
Primary Pulmonary Hypertension	0.82	0.696	1.50	0.816	0.461	0.513	4.356
Other	0.40	0.005	0.60	0.208	0.143	0.307	1.186
Education Level							
High School or Less	1	.	1	.	.	.	.
Attended College/ Technical	0.70	0.103	0.76	0.172	0.218	0.483	1.181
Associate/ Bachelor's Degree	0.52	0.013	0.58	0.156	0.044	0.345	0.985
Graduate Degree	0.50	0.062	0.50	0.193	0.074	0.237	1.069
Public Health Insurance	1.35	0.102	1.02	0.196	0.928	0.698	1.484
U.S. Citizen	0.37	0.011	0.59	0.264	0.236	0.242	1.418
Dialysis at Follow-Up	2.03	0.224	2.13	1.091	0.142	0.777	5.811
Steroid Use at Follow-Up	0.83	0.366	0.84	0.182	0.420	0.549	1.284
Pre-Transplant Pulmonary HTN	1.44	0.430	1.58	0.308	0.019	1.077	2.314
Bilateral Lung Transplant	0.36	<0.001	0.41	0.082	<0.001	0.272	0.601
Donor Age in Years	1.02	0.003	1.02	0.007	0.016	1.003	1.030
Donor History of Diabetes	1.65	0.079	1.41	0.417	0.241	0.793	2.520

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Comparing Outcomes of COVID-19 vs NonCOVID-19 Lung Transplant Recipients on ECMO as a Bridge to Transplant

S. Pasupneti, Z. Tulu, V. Rao, J.W. MacArthur, J.J. Mooney and G.S. Dhillon. Stanford University Hospitals, Stanford, CA.

Purpose: Despite advances in treatments for COVID-19, a subset of patients develop end stage lung disease, necessitating lung transplantation. However, COVID-19 ARDS often requires prolonged intubation with sedation and paralytics, resulting in profound deconditioning. As such, extracorporeal membranous oxygenation (ECMO) is a useful bridge to transplant to allow for a wakeful state and facilitate rehab. This study compares outcomes among patients with COVID-19 and nonCOVID-19 lung disease placed on ECMO as a bridge to transplant.

Methods: All patients on veno-venous ECMO prior to lung transplantation at a single center from Jan 2020 - Oct 2021 were identified. Patient characteristics and post-transplant outcomes were abstracted for comparison.

Results: A total of 7 patients were identified in the COVID-19 (C) cohort and 11 in the nonCOVID-19 (NC) cohort. Age and LAS at transplant were similar **(Table 1)**. As expected, total duration on ECMO was longer for C cohort patients (85.4 vs 14.5 days). Patients in the C cohort had longer ischemia times and more returns to the OR within 72 hours of transplant (71% vs 45%). Rates of hemodialysis within 30 days of transplant were lower in the C cohort (14% vs 18%). Further, C cohort patients had higher rates of detectable donor specific antibodies by IgG (71% vs 55%), though all were negative by C1q and compatible cross matches. While total and ICU lengths of stay were longer in the C cohort, this group had a shorter