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post-transplant hospital length of stay. Median time post-transplant was 212 days for the C cohort and 154 days for the NC cohort; survival was 100% for both groups at follow up.

Conclusion: For patients with COVID-19 ARDS, ECMO is a useful bridge to transplant to mitigate complications associated with prolonged mechanical ventilation. These preliminary data suggest prolonged periods of ECMO pre-transplant do not result in significant adverse events post-transplant. Additional analyses of graft function and survival at 6 and 12 months are ongoing.

	COVID-19 (n = 7)	nonCOVID-19 (n = 11)
Age (y)	47.1 ± 10.0	55.4 ± 9.3
LAS at transplant	88.4 ± 1.1	88.2 ± 2.6
Total duration ECMO (d)	85.4 ± 53.5	14.5 ± 12.9
Total ischemia time, L lung (min)	317.5 ± 162.3	296.4 ± 69.9
Total ischemia time, R lung (min)	381.7 ± 162.5	367.4 ± 74.0
Total LOS (d)	100.6 ± 23.4	81.4 ± 36.1
Post-transplant LOS (d)	49.6 ± 13.1	54.1 ± 28.4
Post-transplant ICU LOS (d)	39.7 ± 71.7	13.0 ± 6.8

Table 1. Comparison of baseline characteristics and outcomes of COVID-19 vs nonCOVID-19 lung transplant recipients. Values shown are average ± standard deviation.

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A Comparison of Short-Term Morbidity and Mortality Among Inpatient Lung Transplant Recipients Transplanted for COVID-19 and Other Restrictive Lung Diseases

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Purpose: Patients with respiratory failure (RF) who are hospitalized at the time of lung transplant (LTx) have higher post-LTx morbidity and mortality than those who are well enough to remain at home. Complications may be even worse in patients transplanted for COVID-19 (C19), as they are commonly critically ill having endured prolonged mechanical ventilation, ECMO support, myopathy, malnutrition, and superimposed infections. In a retrospective cohort study, we compared inpatient lung transplant recipients (LTxRs) transplanted for C19 vs. other underlying restrictive lung diseases (RLDs)

Methods: After IRB approval, patients who underwent inpatient LTx between 1/1/2014 and 8/31/2021 were categorized by indication: C19 or RLD. We excluded LTxRs <18 years old, a primary indication for LTx other than UNOS disease group D, and redo LTx. Primary outcomes were postoperative morbidity and 90-day survival.

Results: Out of 163 inpatient LTxRs, 141 met inclusion criteria: 11 (7.8%) with C19 and 130 (92.2%) with RLD. LTxRs with C19 were younger, had a longer pre-LTx hospital stay, and more likely needed pre-LTx mechanical ventilation and ECMO support. LTxRs with C19 were also more likely to have severe adhesions intraoperatively and their chest was more commonly left open after LTx due to a perceived risk of ongoing bleeding. In addition, LTxRs with C19 had a higher prevalence of PGD3 at 72 hours and longer post-LTx hospital stays and trended toward longer post-LTx mechanical ventilation and need for inpatient rehabilitation. The 2 groups had similar 90-day survival (C19, 100% vs. RLD, 95.4%, $p=0.472$), however, LTxRs with C19 had a higher incidence of acute cellular rejection and DSA production ($>2,000$ MFI) within 6 months of transplant.

Conclusion: LTxRs with C19 are typically sicker and have more post-LTx complications than LTxRs with RLD hospitalized at the time of LTx. However, 90-day survival is comparable and high in both groups. Long-term follow-up is needed.

Variable	Inpatient LTx for C19 (n=11)	Inpatient LTx for RLD (n=130)	p-value ^Ω
Baseline			
Male sex	9 (81.8)	108 (71.1)	0.444
Age (years) [†]	47 (42.5, 56.7)	61.6 (54.8, 67.8)	0.009
Body mass index at listing (kg/m ²) [†]	28.9 (25.3, 30.2)	26.1 (22.8, 29.7)	0.358
Lung allocation score [†]	84.5 (48.5, 88.5)	76.5 (52.8, 88.9)	0.843
Duration from initial hospitalization to LTx (days) [†]	100 (85, 121)	15 (9, 22)	<0.001
Pre-transplant			
Mechanical ventilation before LTx	10 (90.0)	57 (37.5)	0.001
Life support (vasopressors) before LTx	7 (70.0)	63 (41.4)	0.077
ECMO	8 (72.7)	42 (27.0)	0.002
Dialysis between listing and LTx	1 (9.1)	4 (2.8)	0.230
mPAP (mmHg) [†]	25.5 (22, 36.5)	26 (20, 34)	0.877
PCWP (mmHg) [†]	11 (8, 16)	10 (6, 14)	0.453
Cardiac output (L/min) [†]	7.35 (6.3, 8.7)	5.5 (4.8, 6.7)	0.012
Intraoperative			
CFB/ECMO	7 (63.6)	65 (58.0)	0.719
Bleeding	2 (18.2)	38 (31.3)	0.387
Severe adhesions	8 (72.7)	33 (29.5)	0.004
Ischemia time, right lung (minutes) [†]	250.5 (214, 368)	275 (216, 318)	0.844
Ischemia time, left lung (minutes) [†]	221.5 (170, 297)	241 (203, 308)	0.737
Perioperative			
Duration of mechanical ventilation			0.082
<48 hours	0 (0.0)	63 (41.4)	
48 hours – 5 days	3 (27.3)	25 (16.4)	
>5 days	8 (72.7)	50 (39.5)	
Ventilator support, duration unknown	0 (0.0)	3 (2.0)	
Unknown	0 (0.0)	1 (0.7)	
Chest left open	8 (72.7)	11 (37.9)	0.049
Inhaled nitric oxide at 72 hours post-transplant	4 (40.0)	13 (10.3)	0.006
Dialysis prior to discharge	2 (18.2)	14 (9.3)	0.339
30-day readmission	2 (20.0)	34 (31.8)	0.432
Discharge disposition			0.076
Home	0 (0.0)	52 (34.2)	
Skilled nursing facility	0 (0.0)	3 (2.0)	
Acute rehabilitation	11 (100.0)	92 (80.5)	
Death	0 (0.0)	5 (3.3)	
Duration of hospital stay (days) [†]	47 (26, 61)	23 (14, 39)	0.002
Blood products transfused during first 2 weeks, total [†]	11 (8, 17)	8 (2, 25)	0.813
Packed red blood cells	5 (3, 8)	3 (1.5, 8)	0.134
Fresh frozen plasma	4 (2, 8)	3 (0, 5)	0.132
Platelets	2 (1, 2)	1 (0, 2)	0.342
Follow-up outcomes			
ACR grade A2 in 6 months	4 (40.0)	11 (10.3)	0.017
De novo DSA >2000 MFI in 6 months	7 (63.6)	16 (18.5)	0.001
ACR events in 6 months, total [†]	1 (0, 1)	0 (0, 1)	0.143
≥1-year outcomes			
De novo DSA >2000 MFI within 1 year	N/A	17 (11.2)	N/A
ACR events, total [†]	N/A	0 (0, 1)	N/A

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Airway Complications After Lung Transplant for Post Coronavirus Disease (COVID-19) Acute Respiratory Distress Syndrome (ARDS) Related End Stage Lung Disease: Single Centre Experience

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Purpose: Severe COVID-19 ARDS related end stage lung fibrosis with irreversible changes is a newer indication for lung transplantation with acceptable survival rate. Airway complication post lung transplant is a major source of morbidity and mortality with incidence as high as 25 to 49 percent. Patients with end stage COVID-19 fibrosis are likely to be clinically deconditioned with long duration of extracorporeal oxygenator (ECMO) support, high burden of sepsis and prolonged respiratory support which may affect the airways post lung transplantation.

Methods: This is a retrospective observational study after obtaining institutional ethical clearance. We reviewed electronic medical data of patients who underwent lung transplantation for post COVID-19 ARDS related fibrosis. We evaluated the incidence and type of airway complications and the various therapeutic interventions applied for its management.

Results: Between May 2020 and September 2021 our centre performed 23 bilateral lung transplants for end stage COVID-19 ARDS related fibrosis. 22 patients were on ECMO support with mean duration of 50.9 days before transplantation. All patients underwent lung transplantation with central Venous-Arterial ECMO support with mean organ ischaemia time of 360 ± 154 minutes. The incidence of airway complication in our study group was 56%. We observed anastomotic narrowing in 3(13%), distal airway narrowing in 4(17%) and sloughing/coating of anastomotic site in 5(22%) patients. Nonspecific inflammatory polypi around the bronchial anastomotic site were noticed in 4(17%) and mild airway anastomotic dehiscence in 2 subjects. 8(34%) patients required serial bronchoscopy and balloon