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.

of vaccination. Symptoms were variable but ranged from asymptomatic to acute respiratory failure. However, all patients had resolution of CMV DNAemia by the censor date with a range of 7 days to 45 days. Therapy included reduction of immunosuppression, intravenous ganciclovir, and oral valganciclovir. The median peak CMV DNA PCR in the cohort was 15,900 IU/ml with a range of 272 IU/ml to 175,973 IU/ml. None of the recipients developed IgG antibodies to SARS-CoV-2 in response to vaccination. There were no documented cases of COVID-19 in these transplant recipients.

Conclusion: CMV DNAemia after COVID-19 mRNA vaccination in solid organ transplant recipients may be an under-recognized phenomenon. Although the risk-benefit assessment strongly favors COVID-19 vaccination, due to the greater risk of adverse events with COVID-19 infection care teams should consider active monitoring for CMV disease activity in these patients. In some cases, CMV prophylaxis may be warranted depending on patients' risk profile. Our findings warrant study in a larger prospective study.

(1308)

Long Term Outcomes Following Double Lung Transplantation for Severe COVID-19 Infection

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Purpose: : Lung transplantation is a potentially lifesaving treatment for severe COVID-19 acute respiratory distress syndrome (ARDS), when optimized medical treatment fails to accomplish lung recovery. However, since the long-term outcomes remain unknown, concerns related to the use of lung transplantation in critically ill COVID-19 patients persist. In the current study, we evaluated consecutive patients that underwent lung transplantation for severe COVID-19 ARDS at our center and compared their post-transplant outcomes with those undergoing transplantation for non-COVID-19 pathology during the concurrent study period.

Methods: All consecutive patients undergoing lung transplantation between January 2020 to May 2021 were included. The study included two cohorts of patients that underwent transplantation for non-COVID-19 disease (nC19) or refractory COVID-19 ARDS (C19). For additional analysis, we included consecutive patients with severe COVID-19 that required veno-venous extracorporeal membrane oxygenation (ECMO).

Results: We found that post-procedure complications and length of stay were significantly greater compared to transplants performed for non-COVID-19 lung diseases during the concurrent study period. Following transplant the COVID-19 cohort demonstrated a more rapid improvement in Karnofsky performance status. At one year, all recipients in COVID-19 cohort were alive with post-transplant survival no different than institutional non-COVID-19 recipients. Furthermore, when compared to propensity-matched recipients from SRTR, post-transplant survival of institutional COVID-19 ARDS patients was non-inferior. There was progressive reduction in the probability of separation from extracorporeal membrane oxygenation (ECMO) with time and ECMO support greater than 30 days was associated with a significantly greater risk of death in patients with COVID-19 ARDS. In those who remained unweanable from ECMO after 30 days, lung transplant was an independent predictor of survival.

Conclusion: We conclude that lung transplantation in selected patients with severe COVID-19 ARDS who remain unweanable from extracorporeal life support can result in post-transplant outcomes comparable to recipients with chronic end-stage lung diseases and non-COVID-19 ARDS.

(1309)

COVID19 in Lung Transplanted Patients: Chronicles from an Italian Epicenter

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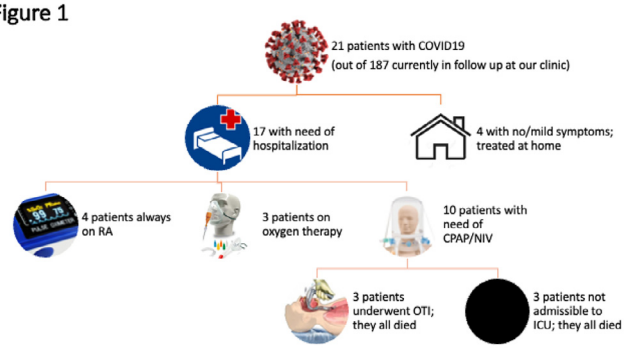
Purpose: Lombardy was one of the hardest hit regions in Italy during the COVID19 pandemic. We hereby report our experience with SARS-CoV2 infection in lung transplant recipients.

Methods: We retrospectively collected clinical data on all the consecutive cases of COVID19 in our centre, based in Milan, from March 2020 to August 2021. Diagnosis was always confirmed by a positive nucleic acid amplification test (RT-PCR) for SARS-CoV-2 on nasopharyngeal swab and/or tracheal aspirate.

Results: 21 patients were diagnosed with COVID19. Figure 1 summarizes the clinical course of these individuals. We reduced immunosuppressive regimen in all these patients, typically holding the antiproliferative agent and augmenting steroids; when hospitalized, everybody received initial empiric antibiotic treatment with piperacillin/tazobactam and high-dose LMWH. Hydroxychloroquine was used only in the "first wave" (4 patients). One patient was compassionately administered anakinra and remdesivir as a "rescue therapy". Lymphocitopenia was a common presenting sign (14 patients, 66%). Aspergillus co-infection occurred in 5 patients (24%). Mortality rate was 29%; 4 out of these 6 patients were affected by CLAD and 3 had chronic kidney disease. Of note, in March 2021, we tested all our patients for anti-SARS-CoV-2 nucleocapsid antibodies before starting vaccinations: we found three additional seropositive patients, who were not included in the present analysis, but had been presumably affected by an asymptomatic/mild form of the disease.

Conclusion: Apart from immunosuppression, the majority of our patients presented at least one risk factor for mortality in COVID-19 (diabetes, chronic kidney disease, arterial hypertension) and, for this reason, we felt that they should be hospitalized to enable close monitoring and prompt management of possible complications and deterioration. Clinical course seemed favorable in only two thirds of our patients but, for the time being, none of these individuals showed sign of new-onset CLAD after COVID19.

Figure 1



(1310)

Epidemiologic Analysis of Delta Variant SARS-CoV-2 in a Cohort of Lung Transplant Recipients

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Purpose: Lung transplant (LTx) recipients have increased risk of infection with SARS-CoV-2 and have reduced efficacy from COVID-19 vaccination. The Delta variant of SARS-CoV-2 has increased virulence compared to earlier variants. We hypothesized that LTx recipients would have increased susceptibility to Delta variant infection despite vaccination.

Methods: We performed a retrospective cohort study of 314 LTx recipients followed between 1/1/2020-9/30/2021. Diagnosis of SARS-CoV-2 infection by PCR was recorded; Delta variant comprised >99% of strains from 6/1/2021-9/30/2021. Data regarding COVID-19 vaccination status, symptom development, hospitalization, intubation, and death were collected.

Results: Forty-four patients (14%) were diagnosed with COVID-19, 18 (41%) of which were Delta variant. The rate of infection with Delta was 4-fold higher than with earlier strains (Figure, 0.016 vs. 0.004 cases / patient months, $p<0.001$). Fifteen (83%) patients diagnosed with Delta variant