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Outcomes of SARS-CoV-2 Infection in Lung Transplant Recipients: A Single Center Experience

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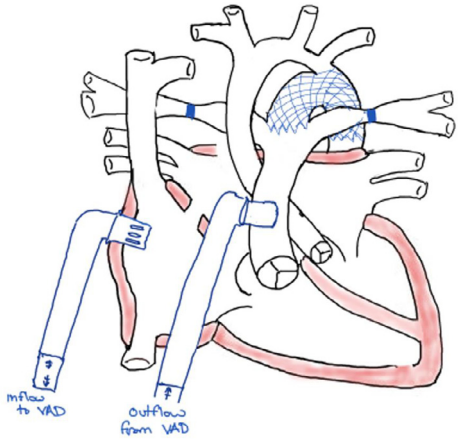

Figure 2. PediMag extracorporeal continuous flow VAD cannulation strategy.

(1305)

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Purpose: Outcomes of Covid-19 in lung transplant recipients (LTr) were reported in the beginning of the pandemic. Only few centers reported on their experience since December 2020 when vaccines received emergency use authorization. We aim to investigate the outcome of SARS-CoV-2 infection in a cohort of LTr at our center in Detroit, Michigan.
Methods: Retrospective chart review study of adult LTr with confirmed SARS-CoV-2 infection from March 2020 to August 2021.
Results: Thirty LTr were diagnosed with SARS-CoV-2 infection confirmed by RT PCR of nasopharynx. Median age at diagnosis was 63; 53% were males; 57% Caucasians and 40% of African descendance. Most patients underwent bilateral LT for interstitial lung disease (46%) and for pulmonary sarcoidosis (23%). The median time post LT was 3.1 years. Most patients needed hospitalization for respiratory failure secondary to Covid-19 (73%). Eleven patients were initially managed as outpatient. Five patients received outpatient combination of monoclonal antibodies with three of them later requiring hospitalization for development of hypoxia. None of the patients with initial out of the hospital management died. Amongst 21 hospitalized LTr, six patients were diagnosed with severe pneumonia and ARDS requiring heated high flow and invasive mechanical ventilation (IMV) in 4 patients. 28-day mortality was 10% and ICU mortality was 25% (50% mortality in those on IMV). Twelve hospitalized patients (57%) were treated with remdesivir. Augmented systemic corticosteroids was used in 85% of cases. Cycle cell inhibitor was held in 71% of the cases. Bilateral ground glass opacities of the allografts were common. None of the patients that received at least one dose of mRNA vaccine died.
Conclusion: Outcomes in LTr infected with SARS-CoV-2 varies. Early reports showed high mortality rate in severe and critical Covid-19 in LTr. Although hospitalization rate in this cohort was high, only four patients in our cohort required IMV during acute Covid-19. Two of them died; both were unvaccinated. Another unvaccinated patient died due to allograft rejection two months after testing positive to SARS-CoV-2. Most cases were mild to moderate despite frequent radiographic findings of pneumonia. Underreporting and exclusion of mild cases as well as likely protective effect of vaccination and use of monoclonal antibodies may explain our different outcomes.

(1306)

Changes in Therapy Outcome of Veno-Venous Extracorporeal Membrane Oxygenation for Therapy-Refractory COVID-19 Infections Throughout the Pandemic

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Purpose: Since the beginning of the current pandemic in late 2019, three accumulations of severe COVID-19 infections (so-called *infective waves*) caused a fulminant increase in hospitalization. In therapy-refractory patients, veno-venous extracorporeal membrane oxygenation (vv-ECMO) was used since the early beginning. However, potential developments in vv-EMCO therapy still need to be proven.
Methods: Between 2020 and 2021 a total of n=60 patients were treated with vv-ECMO for severe COVID-19 related acute respiratory distress syndrome in our department. The patients were prospectively enrolled into an institutional database, followed-up and subsequent retrospectively reviewed. Patients were divided concerning the date of vv-ECMO onset into three groups (03/2020-09/2020: 1. wave, n=11; 10/2020-02/2021: 2. wave, n=23; 03/2021-08/2021: 3. wave, n=26).
Results: From the first to the third wave, patients seemed to be younger, more likely to be female as well as more likely obese. While patients of the first wave regularly developed acute kidney failure (81.3 %), these adverse event was seldom in the second (21.7) and third wave (15.4 5) (p=0.01). In contrast to that, other device-related complications such as stroke, bleeding or visceral ischemia did not differ between the three waves. Most apparent changes during the pandemic were prolonged ECMO support duration (1. wave: 8.5 ± 2.1, 2. wave: 54.0 ± 122.7, 3. wave: 28.0 ± 18.6), ECMO weaning rate (1. wave: 18.2 %, 2. wave: 39.1, 3. wave: 44.0 %) and in-hospital mortality (1. wave: 81.8 %, 2. wave: 69.6, 3. wave: 56.0 %), although none of these effects reached statistical significance.
Conclusion: Although our data cover only a small study population, we observed clear trends towards younger and heavier patients during the pandemic. Most likely, due to a learning effect, support duration of ECMO patients distinctly increased during the pandemic. Subsequently, weaning and survival also increased. However, differences in patient selection could act as a major confounder for these results.

(1307)

Cytomegalovirus Infection Following Vaccination for COVID-19 in Thoracic Organ Transplant Recipients

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Purpose: Cytomegalovirus (CMV) is one of the main causes of infection after solid organ transplantation but CMV infection after vaccination for COVID has not been previously reported. The purpose of our study was to study cases of CMV DNAemia noted after COVID-19 mRNA vaccination in our thoracic organ transplant recipients.
Methods: Between March 1, 2021, and June 30, 2021, we identified 7 cases of CMV infection in thoracic organ transplant recipients within 30 days of COVID-19 mRNA vaccination. Descriptive statistics was used to study these cases.
Results: Our findings are summarized in the table. Of our patients, 3 were lung recipients, 3 were heart recipients while one was a dual heart-kidney recipient. Three patients received the mRNA-1273 (Moderna) vaccine while others received the BNT162b2 (Pfizer) vaccine. Age ranged from 42 to 73 years. Two of the lung transplant recipients and one heart recipient were CMV high-risk status (Donor+/Recipient-), while the others were recipient-seropositive for CMV. The median time to PCR detection of CMV DNAemia from the second dose of mRNA vaccine was 16 days with a range of 4 days to 30 days. None of these recipients had post-transplant CMV infection detected previously. All patients were off antiviral prophylaxis and on their standard immunosuppressive regimen at the time