

V-V ECMO FOR COVID-19 RELATED SEVERE RESPIRATORY FAILURE. LONG-TERM OUTCOME AND NEGATIVE OUTCOME PREDICTORS IDENTIFICATION

Singer Sharon, Nilsson Hanna, Šimek Martin

Department of Cardiac Surgery, Department of Anaesthesiology and Intensive Care, Department of Pulmonary Care, Department of Medical Biophysics, University Hospital and Medical Faculty Palacky University, Olomouc, Czech Republic

Introduction

The COVID-19 pandemic is an acute respiratory disease caused by infection with the SARS-CoV-2 virus. It is transmitted mainly via respiratory droplets, the clinical course ranges from mild/severe pneumonia and life-threatening complications, such as ARDS, shock, and multi organ dysfunction. The overall mortality rate ranges from 0.5-3%, in elderly and individuals with underlying conditions it greatly increases.

Aim of study

Evaluate the long-term outcome of V-V ECMO support in COVID-19 related severe respiratory failure within the 2nd to 4th wave of the coronavirus pandemic.

Methods

Retrospective study analyzed 31 consecutive patients with critical hypoxemic and/or hypercapnic refractory respiratory failure on V-V ECMO support from October 2020 to May 2021.

Results

The mean ECMO support duration was 243.8 ± 65.1 hours, 22 patients were successfully weaned off. At least, 14 patients (45.2%) were discharged with a good neurological outcome (CPC 1). Follow-ups were done at 30 days, 3-, 6-, and 12-months, survival rate were 61.3%, 45.2%, 41.9%, and 41.9% respectively. Before cannulation we found that the survivor group had shorter symptom onset to respiratory failure, a higher P/F ratio, norepinephrine support, and lower IL-6 levels. In the survivor group the mean ICU and hospital stay was 29.5 ± 25.7 days and 44.5 ± 33.7 days respectively. All long-term survivors (13 patients) were found to have a good neurological outcome (CPC 1), but complained of mild health disturbances (NYHA II), with a mild/moderate respiratory dysfunction, 10 patients have returned to normal life.

Conclusion

Mid-term outcome of V-V ECMO support for COVID-19 severe respiratory failure is acceptable even in the realm of low-volume ECMO center. The functional status of the long-term survivors was reported to be good/acceptable despite the prolonged and complicated hospital stay.



Figure 1: Shows one of the patients on V-V ECMO

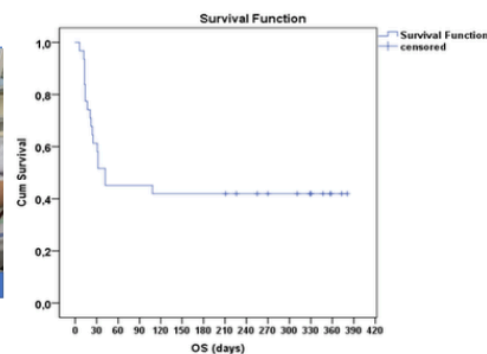


Figure 2: Shows a graph of the final results