

Category : **Respiratory: other**

A111 - Extracorporeal membrane oxygenation for critically ill patients with covid-19 pneumonia: a retrospective cohort study

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Introduction:

In patients with severe respiratory failure from COVID-19, extracorporeal membrane oxygenation (ECMO) can facilitate lung-protective ventilation and may improve outcome. The aim of this study is to investigate the clinical course, characteristics and outcomes of patients supported with ECMO for COVID-19 pneumonia.

Methods:

All adult patients with a confirmed diagnosis of COVID-19 pneumonia admitted to the ICU of Jessa Hospital, Belgium and treated with ECMO between March 13, 2020, and June 30, 2021, were included. Data were prospectively entered into a database that included medical history, demographic data, laboratory results, ventilator settings, ventilator-derived parameters, therapeutic interventions and clinical outcomes. This database was retrospectively reviewed. The primary endpoint is ICU mortality. The study population is categorized based on primary endpoint. A Student t test or Mann Whitney U test and a Chi Square or Fisher's Exact tests were used to evaluate differences between survivors and non-survivors. A p-value <0.05 is considered statistically significant.

Results:

A total of 295 COVID-19 patients were admitted to the ICU, 24 needed ECMO and were analysed. Medical history, demographic data, laboratory results, ventilator settings, ventilator-derived parameters, therapeutic interventions and clinical outcomes, stratified for ICU mortality were analysed. ICU mortality was 45.8% (11/24). Only the following variables were significantly associated with ICU mortality: lower hospital length of stay (p=0.01), need of continuous veno-venous hemofiltration (CVVH) during ECMO (p=0.01), higher incidence of stroke (p=0.04) and major bleeding (p=0.004).

Conclusion:

We were not able to identify baseline variables, treatment and/or ventilator strategies nor laboratory results that are associated with ICU mortality in this small cohort of COVID-19 patients supported with ECMO. Our results suggest that CVVH, stroke or major bleeding during ECMO treatment may increase the risk of ICU mortality.

Table:

Outcomes	COVID-19 ECMO Survivors (n=13)	COVID-19 ECMO Non-survivors (n=11)	p-value
Length of stay in ICU (days)	39.00 ± 28.10	26.36 ± 18.42	0.15
Length of stay in hospital (days)	49.33 ± 27.50	26.36 ± 18.42	0.01
CVVH during ECMO	1 (7.69%)	6 (54.55%)	0.01
Length of ECMO (days)	13.66 ± 10.73	16.64 ± 17.17	0.93
Stroke	0 (0.00%)	3 (27.3%)	0.04
Major bleeding	6 (46.15%)	11 (100%)	0.004
Heparin-induced thrombocytopenia	1 (7.70%)	1 (9.10%)	0.90

Table 1: Clinical outcomes stratified for ICU mortality. Data are expressed as mean ± standard deviation or as frequencies. A p-value <0.05 is considered statistically significant.