Prolonged VV ECMO in Adult Patients: Clinical Characteristics, Complications, and Outcomes from a Brazilian Multicenter Cohort

Authors and Affiliations

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Background: Prolonged venovenous extracorporeal membrane oxygenation (VV ECMO) use has increased in recent years, particularly after the COVID-19 pandemic. However, data on patient characteristics, complications, and outcomes remain limited.

Objective: To describe the clinical characteristics, complications, and outcomes of adult patients receiving prolonged VV ECMO in two high-complexity centers.

Methods: Retrospective observational study conducted at two Brazilian centers. Adult patients supported with prolonged VV ECMO (>14 days) between September 2024 and May 2026 were included; bridge-to-transplant cases were excluded. Survivors and non-survivors were compared using Mann–Whitney and Fisher's exact tests ($p<0.05$).

Results: Nine patients were included. Median age was 58 years, BMI 23.5 kg/m², SAPS 3 score 58, and SOFA score 13. Before cannulation, median PaO_2/FiO_2 ratio was 76.5, driving pressure 15 cmH_2O, pH 7.27, and $PaCO_2$ 71 mmHg. All patients were cannulated for refractory hypoxemia; infectious etiologies accounted for 66.7% of cases. Median pre-ECMO mechanical ventilation duration was 2 days; 88.9% received rescue therapies and 44.4% underwent prone positioning. Median ECMO duration was 34 days. Hematologic complications (77.8%), renal failure (88.9%), and infections (33.3%) were frequent. Rehabilitation during ECMO was feasible in 44.4% of cases. Median ICU and hospital lengths of stay were 45 days. Hospital mortality was 66%. Statistical significance was observed only for rehabilitation ($p=0.012$).

Conclusions: Patients receiving prolonged VV ECMO had high illness severity, prolonged support, and frequent complications. Nevertheless, one-third survived to hospital discharge, and rehabilitation was feasible during support, suggesting that ECMO duration alone may not reflect recovery potential.

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