

ECMO for COVID-19



Extracorporeal membrane oxygenation (ECMO) has been used in patients with COVID-19 who develop severe acute respiratory distress syndrome (ARDS). ECMO has previously been used in other infectious outbreaks, including the 2009 influenza A (H1N1) and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) outbreak.

The Extracorporeal Life Support Organisation (ELSO), the World Health Organization and the Surviving Sepsis Campaign (SSC) guidelines all recommend the use of ECMO in patients with COVID-19 related severe ARDS. However, recently updated guidelines from SSC suggest that ECMO should be considered only for carefully selected patients with COVID-19 and severe ARDS.

In this systematic review and meta-analysis, researchers aimed to summarise outcome data and identify risk factors for unfavourable outcomes to guide clinical decision-making and future research. Twenty-two observational studies with 1896 patients were included in the meta-analysis. The primary outcome was in-hospital mortality, while secondary outcomes included the duration of ECMO therapy and mechanical ventilation, weaning rate from ECMO and complications during ECMO.

Venovenous ECMO was the predominant mode used as per the analysis. In-hospital mortality in COVID-19 patients supported with ECMO was 37.1%. Mortality in the venovenous ECMO group was 35.7%. Both age and ECMO duration were associated with increased mortality. Duration of ECMO support as per the pooled data was 15.1 days, while weaning was accomplished in 67.6% of patients. Across the studies, a total of 1583 ECMO complications were reported, among which renal complications were most common, followed by mechanical and infectious complications.

Findings from this analysis show that the majority of patients with COVID-19 ARDS received venovenous support. In-hospital mortality in patients who received ECMO was 37.1% during the first year of the pandemic. This was similar to non-COVID-19 related ARDS. Increasing age was a risk factor for death. Overall, venovenous ECMO can be considered an effective intervention in selected patients with COVID-19 ARDS.

Source: [Critical Care](#)

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