

Prone Positioning During ECMO in Severe ARDS



The effectiveness of prone positioning to improve outcomes in patients with severe acute respiratory distress syndrome (ARDS) undergoing venovenous extracorporeal membrane oxygenation (VV-ECMO) compared to supine positioning is unknown.

The PRONECMO multicenter randomised clinical trial aimed to address the lack of robust evidence regarding prone positioning during VV-ECMO in patients with severe ARDS. Previous studies have indicated potential benefits of prone ventilation, including improved ventilation/perfusion matching and reduced lung stress and strain. The study specifically investigated whether early prone positioning during VV-ECMO, as opposed to supine positioning, would impact the time needed for successful ECMO weaning.

The study was conducted in 14 intensive care units (ICUs) across France between March 3, 2021, and December 7, 2021. The trial included 170 patients with severe ARDS who had been on VV-ECMO for less than 48 hours. Study patients were randomly assigned in a 1:1 ratio to either prone positioning (with at least four sessions lasting 16 hours each), totalling 86 participants or supine positioning with 84 participants.

The primary outcome of the study was to measure the time it took for successful weaning from ECMO within 60 days of randomisation. Secondary outcomes included the number of days free from ECMO and mechanical ventilation, length of stay in the ICU and hospital, occurrences of skin pressure injury, serious adverse events, and all-cause mortality at the 90-day follow-up.

Before ECMO initiation, 96% were in a prone position. Within 60 days, successful ECMO weaning occurred in 44% of the prone group and 44% of the supine group, with no significant difference in outcomes. No major differences between the two groups were observed in ECMO duration, ICU length of stay, or 90-day mortality. The prone position procedure did not result in any serious adverse events.

Overall, these findings show that in patients with severe ARDS supported by VV-ECMO, prone positioning did not significantly decrease the time required for successful weaning from ECMO compared to supine positioning.

Source: [JAMA](#)

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