



## Lung Recruitment in Patients with Severe ARDS



Acute Respiratory Distress Syndrome (ARDS) affects up to 10% of patients in the ICU. Typical symptoms of ARDS include an increase in lung weight and a reduction of aerated lung tissue. For the treatment of ARDS alveolar recruitment is key, however, this has not yet been shown to benefit severe ARDS cases. It has been suggested that lung recruitment manoeuvres (LRM) and increased positive end-expiratory pressure (PEEP) would be beneficial in severe cases, although, this depends on the potential for lung recruitment (PLR). Previous studies have identified PLR as a marker for the severity of ARDS in patients.

In a recent observational study carried out at Guy's and St Thomas' Hospital, researchers assessed the potential for lung recruitment in severe ARDS patients undergoing extracorporeal membrane oxygenation (ECMO). Also, researchers explored the association between PLR and outcomes such as the length of stay in the ICU, overall survival and ECMO duration.

It was found that, for severe ARDS patients that needed ECMO, there was a 24.3% median recruitability and that the PLR varied from -2% to 76.3%, whilst lung weight remained relatively similar. The high median recruitability is consistent with the results from a previous study suggesting that the PLR increases with the total lung weight and therefore shows the severity of ARDS presenting in the patient. Patients with low PLR showed low compliance and increased average driving pressures of  $23.8 \pm 4.2$  cmH<sub>2</sub>O.

The study also found that a high PLR in severe ARDS cases may be linked to better patient outcomes. This could be seen even without influence from recruitment or adaptations in mechanical ventilation settings – as patients were given standard settings. It is, therefore, possible to suggest that the high lung recruitability in these patients is a result of pathophysiologic changes in the lungs which could lead to faster treatment and an improved prognosis.

In terms of the effects of PLR on the measured outcomes, it was found that patients with a low PLR had both lengthier ECMO runs and ICU stays. However, there was no statistical significance for PLR association with ICU mortality rates.

Source: [Critical Care Medicine](#)

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