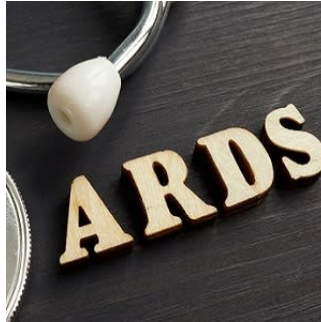


Risk Factors for ARDS in Mechanically Ventilated Adults



Acute respiratory distress syndrome (ARDS) is an inflammatory process that could lead to diffuse oedema and hypoxaemic respiratory failure. It is also characterised by increased pulmonary vascular permeability, increased lung weight, and loss of aerated lung. In low and middle-income countries, ARDS mortality ranges from 26 to 58%.

A large majority of patients require mechanical ventilation with positive pressure ventilation. Patients who survive the condition continue to face other issues. Many require prolonged rehabilitation, and may remain frail and disabled.

In this study, researchers from Peru attempted to determine the clinical and epidemiological differences in the clinical presentation of ARDS and the potential risk factors. This observational study was conducted in five intensive care units in Peruvian hospitals to characterise the clinical features of ARDS at onset and after onset of mechanical ventilation. Researchers also identified potential risk factors that increased the risk of ARDS.

Critically ill patients with acute respiratory failure who required at least 24 hours of mechanical ventilation were included in the study. Patients were followed-up for the 28 days. Researchers compared the baseline clinical features and the outcomes by the status of ARDS. The study enrolled 1657 patients (mean age 60 years, 55% males) of whom 334 had ARDS at onset and required mechanical ventilation and 180 developed ARDS after the initiation of mechanical ventilation. The average tidal volume at the start of mechanical ventilation was 8.7ml/kg for ARDS patients at the onset of mechanical ventilation, 8.6 ml/kg for those who developed ARDS after mechanical ventilation was started, and 8.5 ml/kg for those who did not develop ARDS.

The results revealed an overall 90-day mortality of 56% and 55% for ARDS after onset of mechanical ventilation and ARDS at the start of mechanical ventilation, respectively. The mortality of patients who never developed ARDS was 46%. Overall, adults without ARDS had a lower body mass index compared to those who had ARDS (26.5 kg/m² vs. 27.2 kg/m²). Patients who had higher peak pressure, those who developed higher mean airway pressure, and those who required higher positive end-expiratory pressure were at a higher risk for developing ARDS after the onset of mechanical ventilation.

While the study did not use optimal lung-protective strategies in the majority of patients, the researchers noted that patients who did not have ARDS at the initiation of mechanical ventilation were more likely to develop ARDS afterward if they required high PEEP, developed higher airway pressures and had a higher BMI. However, at the end of 90 days, the mortality rates between those who had ARDS at the onset, and those who developed ARDS while on mechanical ventilation were not different.

Source: [Critical Care](#)
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