ICU
MANAGEMENT & PRACTICE

Impact of Treatment Variability on ARDS Mortality

Acute Respiratory Distress Syndrome (ARDS) is a potentially fatal condition characterised by acute hypoxaemia, and bilateral radiographic infiltrates and a mortality of 36 to 47%. Interventions like lung protective ventilation (LPV) and prone positioning have been shown to improve survival but remain underused. Other treatment methods such as neuromuscular blockade, extracorporeal membrane oxygenation, steroids and pulmonary vasodilators are still used in the management of ARDS, but their benefit and potential also remain unclear.

Another issue with the treatment and management of ARDS is the significant variation in treatment practices that have been reported. In particular, variations in treatments for COVID-19 related ARDS have emerged recently.

The Severe ARDS: Generating Evidence Study, a multicentre observational cohort study, was conducted to determine the impact of treatment variability on mortality in patients with moderate to severe ARDS. A total of 2466 mechanically ventilated adults with ARDS and Pao_2 to Fio_2 ratio of ≤ 150 with positive end-expiratory pressure of ≥ 5 cm H_2O were included in the study. The primary outcome was 28-day in-hospital mortality. Investigators explored the univariate relationship between LPV adherence and the primary outcome. They also assessed variation in ventilator management, adjunctive therapy use and mortality.

Results of the study demonstrate that adherence to lung protective ventilation was 31.4% and varied between centres. Adjunctive therapies were used in 57.5% of patients. Among these, systemic steroids were the most commonly used, followed by neuromuscular blockade, pulmonary vasodilators, prone positioning, and extracorporeal membrane oxygenation. In most centres, adjunctive therapies were used in combination, and most were initiated before or within one day of development of ARDS.

Rates of adjunctive therapy use, methods used, and mortality also varied between centres. Overall, 28-day in-hospital mortality was 40.7%. Morality was higher in patients with severe ARDS compared with those with moderate ARDS. Standardised mortality ratios ranged from 0.33 to 1.98 among centres.

These findings show significant centre-to-centre variability in ARDS management. This highlights significant areas of opportunity for improving ARDS outcomes. Early adherence to LPV was associated with lower mortality and could help improve the overall quality of care processes. There is a need for further collaboration to identify treatment-level factors that influence patient outcomes.

Source: CHEST

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