


CONFERENCE REPORTS AND EXPERT PANEL



Mechanical ventilation in patients with acute brain injury: recommendations of the European Society of Intensive Care Medicine consensus

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Abstract

Purpose: To provide clinical practice recommendations and generate a research agenda on mechanical ventilation and respiratory support in patients with acute brain injury (ABI).

Methods: An international consensus panel was convened including 29 clinician-scientists in intensive care medicine with expertise in acute respiratory failure, neurointensive care, or both, and two non-voting methodologists. The panel was divided into seven subgroups, each addressing a predefined clinical practice domain relevant to patients admitted to the intensive care unit (ICU) with ABI, defined as acute traumatic brain or cerebrovascular injury. The panel conducted systematic searches and the Grading of Recommendations Assessment, Development and Evaluation (GRADE) method was used to evaluate evidence and formulate questions. A modified Delphi process was implemented with four rounds of voting in which panellists were asked to respond to questions (rounds 1–3) and then recommendation statements (final round). Strong recommendation, weak recommendation, or no recommendation were defined when > 85%, 75–85%, and < 75% of panellists, respectively, agreed with a statement.

Results: The GRADE rating was low, very low, or absent across domains. The consensus produced 36 statements (19 strong recommendations, 6 weak recommendations, 11 no recommendation) regarding airway management, non-invasive respiratory support, strategies for mechanical ventilation, rescue interventions for respiratory failure, ventilator liberation, and tracheostomy in brain-injured patients. Several knowledge gaps were identified to inform future research efforts.

Conclusions: This consensus provides guidance for the care of patients admitted to the ICU with ABI. Evidence was generally insufficient or lacking, and research is needed to demonstrate the feasibility, safety, and efficacy of different management approaches.

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