CONFERENCES REPORTS AND EXPERT PANEL

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

Chiara Robba1, Daniele Poole2, Molly McNett3, Karim Asehnoune4, Julian Böse5,6, Nicolas Bruder7, Arturo Chieregato8, Raphael Cinotti9, Jacques Duranteau10, Sharon Einav11, Ari Ercole12, Niall Ferguson13,14, Claude Guerin15,16, Ilias I. Siempos17,18, Pedro Kurtz19, Nicole P. Juffermans20,21, Jordi Mancebo22, Luciana Mascia23, Victoria McCredie13, Nicolas Nin24, Mauro Oddo25, Paolo Pelosi1,26, Alejandro A. Rabinstein27, Ary Serpa Neto28,29, David B. Seder30, Markus B. Skrifvars31, Jose I. Suarez32,33,34, Fabio Silvio Taccone35, Mathieu van der Jagt36, Giuseppe Citerio37 and Robert D. Stevens32,33,34*

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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.

*Correspondence: rstevens@jhmi.edu
32 Department of Anesthesiology and Critical Care Medicine, Johns Hopkins University School of Medicine, 600 N. Wolfe St, Phipps 455, Baltimore, MD 21287, USA
Full author information is available at the end of the article