



Editorial

ARDS, guidelines and ANZ practice: The persistent disconnect

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ARDS

Guidelines

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Guidelines aim to ensure consistent, high-quality care in intensive care units (ICUs), and provide a framework for clinical decision-making. They aim to help standardize practices and reduce variability in patient care.^{1–3} Expectations are that guidelines reflect the latest evidence and best practices. Thus, they may not only improve patient outcomes but also enhance the overall functioning of ICUs globally. By offering clear protocols for diagnosis, treatment, and management of patients, guidelines aim to minimize errors, optimize resource utilization, and ensure that patients receive the most effective interventions. In an ICU setting, where critical decisions must be made rapidly and often with limited information, guidelines serve as a tool to help clinicians navigate complex scenarios, align care with current scientific knowledge, and potentially improve the overall quality of care provided to critically ill patients.^{4,5}

Despite their critical role in shaping ICU practices, the adoption of evidence-based practices based on guidelines in ICUs is often limited. This may contribute to inefficiency and potentially leading to preventable adverse events and mortality.^{3,6} A recent study showed that compliance varied widely between guidelines in a paediatric ICU, with guidelines with binary decision branch points or single-page decision flow diagrams showing the highest compliance.⁷ In contrast, poor compliance was frequently linked to a lack of trust in the guidelines or time limitations.⁷

Many ICU guidelines are criticized for relying on weak recommendations and studies with limited power or inadequate design.^{3,6} Often, these guidelines are based on evidence that is derived from small-scale or low-quality studies, leading to recommendations that are not robust or universally applicable. This reliance on suboptimal evidence can result in practices that lack the necessary rigour to effectively address the complexities of patient care in the ICU. As a result, there is a risk of perpetuating substandard care practices and failing to provide the most effective interventions.

In this issue of *Critical Care Resuscitation*, Parke et al.⁸ present the results of a multicentre observational study investigating the characteristics and management of patients with moderate-to-severe acute respiratory distress syndrome (ARDS) admitted to

ICUs in Australia and New Zealand. In this study, adherence to evidence-based interventions for managing patients with ARDS was notably low. On the first day of ventilation, only 10% of patients received lung protective ventilation, and only 2% had their plateau pressure measured. Additionally, 24% of patients received tidal volumes exceeding 8 mL/kg of predicted body weight, and prone positioning was used in only 23% of cases. Despite this lack of adherence to recommended practices, the 28-day mortality rate was 30%, which is lower than the global average.⁹

The lack of compliance reported by Parke et al.⁸ is consistent with findings from previous studies,^{9–11} which documented suboptimal adherence to evidence-based practices, such as low-tidal volume ventilation for patients with ARDS. Frequently reported barriers to the implementation of lung protective ventilation are the under-recognition of ARDS,⁹ clinician concerns related to patient discomfort and/or adverse events (e.g., hypercapnia),¹² and the perceived loss of autonomy associated with using strict protocols.¹³ Another critical issue in this problematic scenario is the consistently higher risk for females being exposed to excessive tidal volumes, resulting from the infrequent and incorrect calculation of PBW.^{14–16}

This disconnect between recommended practices in guidelines and actual practices in ICUs may also be attributed to the perceived weaknesses of the recommendations, as previously described. In the two most recent guidelines for managing patients with ARDS, most recommendations are based on low-to-moderate quality evidence,^{17,18} reflecting a trend seen across many other critical care guidelines.¹⁹ The use of low tidal volume ventilation, for example, is mainly based on the findings of the ARMA trial, published more than 20 years ago.²⁰ Despite demonstrating benefits with low tidal volumes, the control group in the trial was exposed to excessively high tidal volumes, which differed from standard practices at the time.^{21,22} The median tidal volume before randomization was 10 mL/kg PBW, resulting in elevated tidal volumes for most patients in the control group. Additionally, among patients who met the inclusion criteria but were excluded from the ARMA trial, the overall mortality rate was 32%, comparable to the mortality observed in the low tidal volume group.^{21,22} Another hypothesis is that the disconnect between guidelines and practice may arise because of regional variation in mechanical ventilation management. A recent study of patients undergoing pressure support ventilation in Australia revealed that clinicians seldom adjust or titrate pressure support levels, indicating a prevalent “set and forget” approach.²³

Another significant concern in critical care is the persistent discrepancy between various guidelines addressing the same

clinical issue. Notably, the European¹⁷ and American¹⁸ guidelines for managing ARDS offer markedly different recommendations concerning three critical aspects: the selection of positive end-expiratory pressure (PEEP), indications for venovenous extracorporeal membrane oxygenation (VV-ECMO), and the use of neuromuscular blockade. Although both sets of guidelines are based on the same body of evidence and share approximately 30% of their panellists, these divergent recommendations underscore the limitations of current guidelines and the available evidence in critical care.²⁴ This inconsistency suggests that the opinions of panellists may have had a greater influence than the clinical trial evidence. In the end, it is quite ironic that guidelines, which are supposed to be evidence-based, seem to prioritize personal opinions over solid data – precisely the opposite of what they should be doing.

Despite the best efforts to standardize and improve ICU care, the underlying problem remains that there is insufficient quality of evidence to support some guidelines in critical care. As highlighted, many recommendations are based on outdated or inadequately powered studies, leading to recommendations that may not be universally applicable or robust enough to guide optimal care. This misalignment between guidelines and actual practice underscores a pressing need for more rigorous, high-quality research to inform future guidelines. Until then, the gap between recommended practices and real-world implementation is likely to persist, perpetuating inefficiencies and potentially compromising patient outcomes in ICUs worldwide.

Conflict of interest

Professor Serpa Neto is a member of the Editorial Board of CCRJ.

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