



Care of Critically Ill Adults

Time to move: Shifting the ICU paradigm to improve outcomes for survivors of critical illness



Intensive care unit acquired weakness (ICUAW) affects up to 65% of patients in the intensive care unit (ICU) and is associated with increased mortality, as well as a longer duration of mechanical ventilation and ICU stay.¹ Importantly, ICUAW also contributes to post intensive care syndrome (PICS), with ICU survivors experiencing long term negative effects on cognitive and physical functioning and mental health.² In a recent study of medical and surgical critical care patients, 26% of ICU survivors had physical disability at three months post discharge and 19% experienced problems in at least two domains of PICS (cognitive, physical, or mental health).³

Early identification of ICUAW in our critically ill patients is an important strategy to address the problem. In this issue, Braganca and colleagues offer further validation of handgrip dynamometry for the diagnosis of ICUAW when compared to the gold standard Medical Research Council (MRC) muscle strength score criteria.⁴ Handgrip certainly provides a simple and fast method for clinical recognition of patients with ICUAW. However, similar to MRC testing, handgrip assessment is not possible with many of our at risk patients. Only 44% of screened mechanically ventilated patients could be included in Braganca and colleagues study.⁴ Similarly, in a study evaluating muscle strength, 46% of the patients could not be evaluated using MRC criteria due to inattention.⁵

Although the underlying specific cause of patient inattention or exclusion from testing cannot be explicitly determined from either study report, certainly sedation and delirium are significant barriers to MRC muscle strength testing and handgrip dynamometry, as both require an awake and cooperative patient. Despite guidelines calling for decreasing sedation since 2002,^{6,7} these guidelines are not consistently integrated into intensive care unit practice.^{8,9} This minimizes our ability to diagnose ICUAW with either of these two measures.

The challenge of addressing ICUAW goes beyond identification and measurement. Early mobility interventions are safe and effective, improve functional outcomes, minimize time on the ventilator, and decrease delirium.^{10,11} However, estimates of patients receiving out of bed early mobility in the ICU are as low as 10%.¹² Even within the context of a prospective research study over 60% of patients were never mobilized, with sedation as the most commonly reported modifiable barrier.¹³ Awakening and Breathing Coordination, Delirium Monitoring, and Early Exercise/Mobility (ABCDE) bundle adoption into practice is equally low with only 12% of survey respondents reporting routine integration of all the bundle components.⁹

Many of the identified modifiable risk factors for development of ICUAW and PICS¹² are the same factors that preclude our ability to

measure or intervene. Critical care practitioners and researchers are stuck in a vicious cycle with sedation as both a risk factor for negative outcomes and a barrier to evaluation and intervention for ICUAW and delirium. However, we are not doomed to measure complications after discharge nor to insufficiently address them during critical illness. Numerous resources are available to support practice change around sedation and mobility.¹⁴ There is an urgent need to create a paradigm shift in the ICU to support a new normal where the interactive patient on the ventilator is expected and the sedated immobile patient is uncommon. With this shift we move away from measuring the impact of complications and move to proactively decreasing the number of ICU survivors suffering long term negative outcomes. However, this paradigm shift will not be simple nor easy. It will take collaboration amongst interprofessional ICU team members^{15,16} as well as organizational support and investment. This sustained change to practice is possible through commitment and passion for the effort. It is time to move to improve quality of life for our ICU survivors.

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