

Sedation in Critically Ill Patients



Mark Oldham, MD^a, Margaret A. Pisani, MD, MPH^{b,*}

KEYWORDS

- Sedation • Critically ill patients • Intensive care unit • Pain • Circadian rhythm
- Delirium

KEY POINTS

- Our understanding of the importance of sleep on recovery of patients who experience critical illness is still in its infancy.
- Although there is biological plausibility regarding the impact and importance of sleep in intensive care unit (ICU) patients especially related to immune dysfunction, infection risk, prolonged length of mechanical ventilation, and delirium development and duration, there are little published data.
- Despite the challenges of caring for critically ill patients, following the recommended guidelines for pain, agitation, and delirium, paying attention to early mobilization and sleep hygiene and individualizing patient care as needed, should lead to the best outcomes for patients.
- Future research studies should continue to inform our practice regarding treatment of pain, agitation, and delirium in the ICU.

INTRODUCTION

Sedation in the intensive care unit (ICU) is a topic that has been frequently researched, and debate still exists as to what are the best sedative agents for critically ill patients. There is increasing interest in sleep and circadian rhythm disturbances in the ICU and how they may impact on outcomes. In addition to patient-related and ICU environmental factors that likely impact sleep and circadian rhythm in the ICU, sedative and analgesic medications may also play a role. This article focuses on

- Current practice guidelines related to pain, sedation, and delirium in the ICU
- Effects of medications used for pain, sedation, and delirium on sleep stages
- Effects of medications used for pain, sedation, and delirium on circadian rhythm
- Conclusions on the interactions between medications, sleep, and circadian rhythm in the ICU

Disclosures: none.

^a Department of Psychiatry, Yale-New Haven Hospital, 15 York Street, New Haven, CT 06510, USA; ^b Section of Pulmonary, Critical Care & Sleep Medicine, Yale University School of Medicine, PO Box 208057, TAC S425C, New Haven, CT 06520-8057, USA

* Corresponding author.

E-mail address: margaret.pisani@yale.edu

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BACKGROUND

When patients are critically ill and admitted to an ICU, they are frequently intubated and mechanically ventilated. Historically when patients were placed on a ventilator they received large amounts of sedation. Work by Kress and colleagues¹ in 2000 demonstrated that you could safely stop sedation on a daily basis and allow patients to wake up. The benefits of this daily interruption of sedation and awakening has now been studied in several other trials and linked to spontaneous breathing trials in ventilated patients. Several recent reviews have summarized the importance of minimizing the amount of sedation in critically ill patients. **Fig. 1** presents a schematic of the inter-relationship between critical illness, ICU care, and long-term outcomes.

Sedation in the Intensive Care Unit: Current Practice and Practice Guidelines

The Society of Critical Care Medicine released updated practice guidelines about the management of pain, agitation, and delirium (PAD) in 2013.² These guidelines used the GRADE methodology (Grading of Recommendations, Assessment, Development, and Evaluation) in their development. During the process of guideline development, the task force members posed clinically relevant questions that could be systematically evaluated using evidence in the literature. These questions were then transformed into descriptive clinical statements and actionable items. Each statement and recommendation included an assessment of the strength of the evidence based on the strength of the evidence and the relative risk or benefit of the treatment. Statements were defined as *weak* or *strong*; weak recommendations were worded as *we suggest*, and strong recommendations were worded as *we recommend*. No recommendation was made when there was a lack of sufficient evidence and consensus opinion was not used to make recommendations. In addition, an anonymous, online, iterative voting schema was used to achieve rapid and transparent consensus regarding the statements and recommendations. **Table 1** highlights the recommendations for PAD from the 2013 PAD guidelines.

Pain, agitation, and delirium assessments

The guidelines stress the importance of frequent evaluation of critically ill patients using validated measurement tools. For pain, using a patient self-report with a 1 to 10 numerical rating scale (NRS) is the preferred method for those patients who are able to respond. In those patients who are unable to use an NRS, a Behavioral Pain Scale (BPS) is recommended. Either the BPS³ or Critical-Care Pain Observation Tool (CPOT)⁴ can be used in the evaluation of critically ill patients. Both instruments are valid

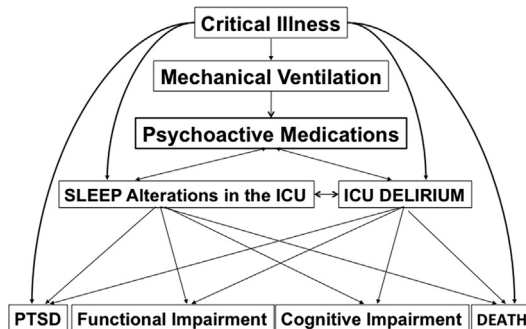


Fig. 1. The interaction between critical illness, ICU care, and patient outcomes. PTSD, posttraumatic stress disorder.

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