

## Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility and Sleep Disruption in Adult Patients in the ICU

### About the Guideline

- The 2018 guideline expands on the 2013 guideline for the prevention and management of pain, agitation/sedation, and delirium with the addition of immobility and sleep disruption.
- The 2018 guideline builds on the 2013 recommendations of light sedation, avoidance of benzodiazepines, and early mobility, with an emphasis on assessments, protocols, and a stepwise interventional approach. Reduction of risk factors and a multimodal approach to the prevention and management of pain, agitation/sedation, delirium, sleep disruption, and immobility are recommended.
- The patient-centered guidelines include 37 recommendations of which only two are strong and the rest, conditional.
- The recommendations below are all conditional unless indicated as strong. Actionable interventions deemed to be of highest interest to intensive care unit (ICU) clinicians are highlighted here. There are two good practice statements based on the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) principles.

### Key Clinical Considerations

Become familiar with the recommendations and best-practice statements provided in this guideline, especially if you work in an acute care setting.

#### **Pain management**

*Good Practice Statement:* “Management of pain for adult ICU patients should be guided by assessment and pain should be treated before sedation is considered” (Devlin et al., 2018, p. e837).

To implement this recommendation, use an assessment-driven protocol that requires regular pain and sedation assessments using validated tools.

- Analgosedation is defined as one of the following:
  - Analgesia-first sedation (analgesia before a sedative to reach the sedative goal)
  - Analgesia-based sedation (an analgesic is used instead of a sedative to reach the sedative goal)
- Preemptive, preprocedural analgesia using opioids with the lowest effective dose or nonsteroidal anti-inflammatory drugs (NSAIDs) as an opioid alternative is recommended.
- The following can be used as opioid adjuncts:
  - Neuropathic pain medications (gabapentin, carbamazepine, pregabalin) for neuropathic pain or for post-cardiovascular surgery pain
  - Acetaminophen
  - Nefopam
  - Low-dose ketamine (1-2 µg/kg/hour) for post-surgical pain
  - Massage therapy, music therapy, cold therapy (e.g., cold packs to site prior to chest tube removal), and relaxation techniques

- Do not use the following:
  - Inhaled volatile anesthetics for procedural pain
  - Lidocaine as an opioid adjunct for pain management
  - A COX-1 selective NSAID as an opioid adjunct for pain management
  - Local anesthesia or nitrous oxide for chest tube removal or other preprocedural pain management
  - NSAID topical gels for preprocedural analgesia
  - Hypnosis or cybertherapy (virtual reality)
  - Physiologic measures (vital signs) as valid indicators for pain
- Valid and reliable pain assessment tools
  - The 0 to 10 Numeric Rating Scale is the standard for patients who can reliably self-report.
  - Robust tools for patients who are unable to reliably self-report include the following:
    - Behavioral Pain Scale (BPS)
    - Critical-Care Pain Observation Tool (CPOT)

### **Sedation/agitation**

Light sedation can be achieved by both daily sedative interruptions (DSI) and nursing-protocolized (NP) targeted sedation protocols. While no consensus exists, light sedation may be defined as a Richmond Agitation Sedation Scale (RASS) score of -2 to +1.

- The following medications are recommended:
  - Propofol or dexmedetomidine over benzodiazepines in the mechanically ventilated patient
  - Propofol over benzodiazepines in the mechanically ventilated post-cardiac surgery patient
- Valid and reliable sedation/agitation assessment tools include the following:
  - Richmond Agitation-Sedation Scale (RASS)
  - Sedation-Agitation Scale (SAS)

### **Delirium**

*Good Practice Statement:* “Critically ill adults should be regularly assessed for delirium using a valid tool” (Devlin et al., 2018, p. 843).

- The following interventions are recommended:
  - Dexmedetomidine to treat delirium and agitation in mechanically ventilated patients where agitation is preventing weaning or extubation. *Note:* dexmedetomidine should only be used to treat and not prevent delirium.
  - Reduction of risk factors and strategies to improve cognition, improve sleep, and increase mobility.
  - Short-term haloperidol or atypical antipsychotics to treat severe delirium only. Discontinue meds as soon as symptoms are resolved.
- Do not use the following:
  - Bright-light therapy to reduce delirium
  - Haloperidol and atypical antipsychotics to treat subsyndromal delirium

- Haloperidol, atypical antipsychotics, dexmedetomidine, ketamine, or HMG-CoA ( $\beta$ -Hydroxy  $\beta$ -methylglutaryl-Coenzyme A) reductase inhibitors (statins) to prevent or routinely treat delirium
- Valid and reliable delirium assessment tools include the following:
  - Confusion Assessment Method for the ICU (CAM-ICU)
  - Intensive Care Delirium Screening Checklist (ICDSC)

### **Immobility**

Rehabilitation/mobilization is beneficial in mitigating the long-term effects of ICU-acquired muscle weakness, and

- should be used to reduce disability and improve patient outcomes.
- has not been shown to cause harm.
- is not contraindicated in patients with mechanical ventilation or vasoactive drips.
- can be performed in bed and out of bed.
- should be discontinued in the event of patient falls, patient distress, and for new onset cardiovascular, neurological or respiratory instability.

### **Sleep disruption**

Multicomponent, sleep-promoting protocols and reduction of sleep-disrupting risk factors are recommended for all ICU patients. No recommendation was found for either melatonin or dexmedetomidine as sleep aids, or for using an adaptive mode of ventilation over pressure support.

- Risk factors for sleep disruption include the following:
  - Pain
  - Environmental stimuli
  - Healthcare-related interruptions
  - Psychologic factors
  - Respiratory factors
  - Medications
- The following interventions are recommended:
  - Light and noise reduction to improve sleep
  - Hearing aids and glasses
  - Light sedation in mechanically ventilated patients to improve wakefulness
  - Cognitive stimulation, reorientation and clocks visible to patients
  - Assist-control ventilation over pressure support at night
  - Noninvasive ventilation (NIV) or standard ICU ventilator to improve sleep as required
  - Validated assessment such as the Richards Campbell Sleep Questionnaire or subjective assessment
- Do not use the following:
  - Physiologic sleep monitoring, such as electroencephalograms (EEGs)
  - Aromatherapy, acupressure, propofol, or music at night to improve sleep

**Reference:**

Devlin, J. W., Skrobik, Y., Gélinas, C., Needham, D. M., Slooter, A., Pandharipande, P. P., Watson, P. L., Weinhouse, G. L., Nunnally, M. E., Rochweg, B., Balas, M. C., van den Boogaard, M., Bosma, K. J., Brummel, N. E., Chanques, G., Denehy, L., Drouot, X., Fraser, G. L., Harris, J. E., Joffe, A. M., ... Alhazzani, W. (2018). Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU. *Critical care medicine*, 46(9), e825–e873. <https://doi.org/10.1097/CCM.0000000000003299>