Spreading Knowledge – Improving Outcomes

Sedation Strategies

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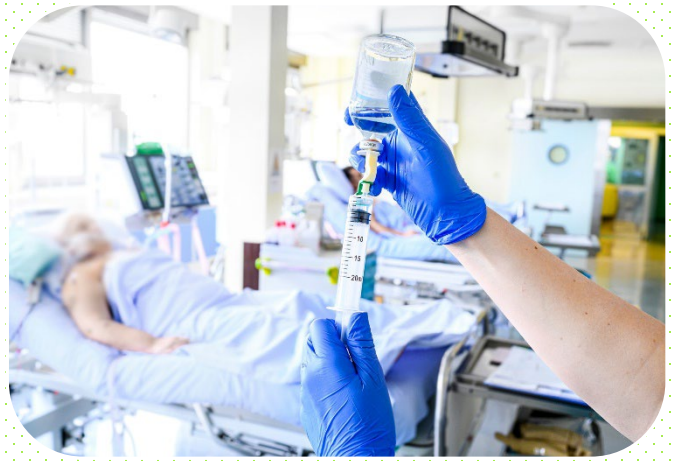
Analgosedation

Light Sedation



Dexmedetomidine or Propofol

Analgosedation

PADIS guidelines suggest using an assessment-driven, protocol-based, stepwise approach for pain and sedation management in critically ill adults (conditional recommendation, moderate quality of evidence)

Analgesia-based Sedation

An analgesic agent [usually opioid] is used ***instead of sedative*** to reach the sedative goal

Analgesia-first Sedation

An analgesic agent [usually opioid] is used ***before sedative*** to reach the sedative goal

Devlin JW. Et al. W. Executive Summary: Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU. Crit Care Med. 2018 Sep;46(9):1532-1548.

Light Sedation vs Deep Sedation

Light Sedation

RASS of +1 to -2

- Preferred in most patients
- Daily sedation interruption
- Nursing-driven targeted sedation protocol

Deep Sedation

RASS -4 to -5

- Status epilepticus
- Neurological injury
- High ICP
- Post cardiac arrest
- Paralysis

Devlin JW. Et al. W. Executive Summary: Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU. Crit Care Med. 2018 Sep;46(9):1532-1548.

Guideline Recommendations on Sedatives Use in ICU

Suggest using light sedation (vs deep sedation) in critically ill, mechanically ventilated adults
(conditional conditional recommendation, low quality of evidence)

Light sedation found to have

- Shorter time to extubation (MD, –0.77 d; 95% CI, –2.04 to –0.50)
- Reduced tracheostomy rate (RR, 0.57; 95% CI, 0.41–0.80)

No association was found between light sedation and

- 90-day mortality Reduction in the incidence of delirium
- PTSD
- Depression
- Self-extubation

Light sedation: RASS -2 to +1

Devlin JW, et al. Crit Care Med. 2018 Sep;46(9):e825-e873.

Choice of Sedative Agents

Dexmedetomidine	Propofol	Benzodiazepines
✓	✓	✗

Suggest using propofol over a benzodiazepine for sedation in mechanically ventilated adults after cardiac surgery
(conditional recommendation, low quality of evidence)

Suggest using either propofol or dexmedetomidine over benzodiazepines for sedation in critically ill, mechanically ventilated adults
(conditional recommendation, low quality of evidence)

Devlin JW. Et al. W. Executive Summary: Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU. Crit Care Med. 2018 Sep;46(9):1532-1548.

Guideline Recommendations on Sedatives Use in ICU

Propofol Vs. BZD	Dexmedetomidine Vs. BZD	Dexmedetomidine vs. propofol
▪ Shorter time to light sedation to 4 hours. ▪ Shorter time to extubation of 8-12 hours	**MENDS 2007** ▪ Reduce delirium **SEDCOM 2009** ▪ Shorter time to extubation ▪ Reduce delirium **MIDEX 2012** ▪ Reduction in MV duration ▪ Shorter time to extubation	**PRODEX 2012** (Dexmedetomidine group) ▪ Shorter time to extubation ▪ Improve ability to communicate, arousal, and cooperation

Devlin JW, et al. Crit Care Med. 2018 Sep;46(9):e825-e873.

Guideline Recommendations on Sedatives Use in ICU

Suggest using dexmedetomidine for delirium in mechanically ventilated adults where agitation is precluding weaning/extubation
(conditional recommendation, low quality of evidence)

DahLIA Trial 2016
Double-blind, placebo-controlled RCT

Patients

- 71 patients
- Extubation was considered inappropriate because of the severity of agitation and delirium

Intervention

- N=39
- Dexmedetomidine 0.5mcg/kg/titrated up to 1.5mcg/kg/hr

Comparative

- N=32
- Placebo

Outcome

- Increase in median ventilator-free hours at 7 days in the dexmedetomidine group
- (144.8 vs. 127.5 hours, P=0.01)

Devlin JW, et al. Crit Care Med. 2018 Sep;46(9):e825-e873.
Reade et al. JAMA. 2016 Apr 12;315(14):1460-8.

After the 2018 PAIDS Guidelines

SPICE III Trial 2021

Multicenter RCT

4000 Patients

- ICU patients on MV requiring sedation for safety and/or comfort

Intervention

- Dexmedetomidine 1mcg/kg/hr up to 1.5 mcg/kg/hr
- N=2001

Comperative

- Usual care including propofol, midazolam
- N=1999

Outcome

- Increase in median ventilator-free hours at 7 days in the dexmedetomidine group
- (144.8 vs. 127.5 hours, P=0.01)

Shehabi Y, et al. Intensive Care Med. 2021 Apr;47(4):455-466

In Summary

- Use analgosedation
- Light sedation except in certain conditions
- Use dexmedetomidine or propofol to achieve light sedation
- Daily sedation interruption or nursing driven sedation protocol
- Use dexmedtomidine for delirium where agitation is precluding weaning/extubation

Thank you