

GUIDELINES FOR SEDATION/ANALGESIA AND NEUROMUSCULAR BLOCKAGE FOR MECHANICALLY VENTILATED ICU PATIENTS

Sedation and Analgesia Scales

- Sedation to Ramsey Scale: _____ (Choose level)
- | | |
|---------|--|
| Level 1 | Anxious and agitated or restless or both |
| Level 2 | Cooperative, oriented, and tranquil |
| Level 3 | Responds to commands |
| Level 4 | Brisk response to stimulus |
| Level 5 | Sluggish response to stimulus |
| Level 6 | No response to stimulus |
- Sedation with BIS monitor: _____ (choose BIS range)
- | | |
|--------------|--|
| 100 | Awake |
| 80-99 | Anxiolysis |
| 60-79 | Moderate sedation |
| 40-59 | Low probability of explicit recall (recommended for patients using neuromuscular blockers) |
| 21-39 | Unresponsive to verbal stimulus |
| less than 20 | Burst suppression |
| 0 | Flat line EKG |

Assess Ramsey score/BIS level hourly
Assess pain scale if possible

Sedation:

- Midazolam (Versed) Loading dose of _____ mg (usually 2-10 mg) followed by 2 mg/hr adjusted as needed by 1 mg/hr to desired modified Ramsey or BIS score or maximum dosage of 15 mg/hr. (Standard concentration 1 mg/mL) Prior to each infusion increase, rebolus with midazolam 2 mg IV push.
- OR**
- Propofol (Diprivan): Bolus dose of _____ mg (consider 20 mg) followed by 20 mg/hr (2 mL/hr) adjusted as needed by 20 mg/hr (2 mL/hr) to desired Modified Ramsey or BIS scale or a maximum dose of 500 mg/hr (50 mL/hr). Tubing and solution must be discarded after 12 hours. If sedation longer than 24 hours is required convert to midazolam (Versed) infusion.
- Stop or taper all sedation protocol agents at _____ AM daily to assess neurological function. After assessment and documentation, rebolus and restart continuous infusion if necessary.

Analgesia

Morphine

- Morphine intermittent dosing: Morphine _____ mg (usually 2-4 mg) every 2 hours.
- Morphine infusion dosing: Morphine _____ mg/hr (usually 1-2 mg/hr). Increase by 1 mg/hr as needed for pain control and/or desired Ramsey or BIS score. (Standard concentration 1 mg/mL)
Morphine _____ mg IV every hour as needed for breakthrough pain.

Fentanyl (for hemodynamically unstable patients or morphine sensitivity)

- Fentanyl (Sublimaze) infusion _____ micrograms/hr (usually 25-50 mcg/hr). Increase by 25 mcg/hr as needed for pain and/or desired Ramsey or BIS score. (Standard concentration 10 mcg/mL)
Fentanyl _____ mcg IV every hour as needed for breakthrough pain
- Stop or taper all analgesia protocol agents at _____ AM daily to assess neurological function. After assessment and documentation, rebolus and restart continuous infusion if necessary.

Neuromuscular Blockade (BIS monitor required for sedation and pain control)

- Vecuronium (Norcuron): Loading dose: 0.1 mg/kg _____ mg
Maintenance dose: 0.1 mg/kg/hr Impaired renal function: 0.03 mg/kg/hr Impaired Hepatic function: 0.04 mg/kg/hr
Initial maintenance dose _____ mg/hr. (Standard concentration 1 mg/mL)
- Monitor train-of-four every _____ hours (usually every 8 hours) using a peripheral nerve stimulator.
- Maintain neuromuscular blockade at _____ twitches (usually 2-3) using the train-of-four. If patient is twitching higher than selected increase by 0.02 mg/kg/hr as needed to reach desired train-of-four.
- Stop neuromuscular blocker at _____ AM daily to assess for myopathy and/or prolonged neuromuscular blockade.
After assessment and documentation, restart continuous infusion if necessary.

Sedation required with neuromuscular blockade. Consider pain control as well. Pharmacy will not initiate an order for a neuromuscular blocker without sedation and a BIS range.

Physician Signature _____ Date _____ Time _____



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PATIENT LABEL