

Critical Care Drug Conservation Strategies

April 7, 2020

The Osler COVID Clinical Response Committee recommends the creation of a drug dashboard for the following medications as soon as possible. Thrice weekly review at CCRC can be accomplished at the request of IMT.

Sedative infusions

- General
 - Daily assessment of the need for sedation
 - Daily awakening trials if appropriate based on ventilator settings
 - If delirium identified, initiate appropriate enteral therapies
- Propofol
 - As ventilator settings improve, begin daily awakening trials
 - If delirium identified initiate appropriate enteral agents
 - No specific substitute available
- Midazolam
 - If using midazolam infusion, add enteral clonazepam to reduce infusion dose requirement to conserve IV supply
- Alternatives to consider based on local supply and depth of sedation required
 - Ketamine infusion
 - Ativan infusion
 - Dexmedetomidine infusion

Opiate infusions

- General
 - Daily assessment of the need for opiates
 - Daily awakening trials if appropriate based on ventilator settings
 - If delirium identified, initiate appropriate enteral therapies
- Fentanyl
 - Consider hydromorphone infusion in patients expected to be ventilated longer than 48 hours
 - Consider enteral morphine or hydromorphone to reduce infusion dose requirement to conserve IV supply
- Hydromorphone
 - Initiate enteral hydromorphone to reduce infusion dose requirement to conserve IV supply
- Remifentanyl or sufentanyl
 - May have the added benefit of reducing the need for both sedation and paralysis.
 - We are reviewing the availability and ability to use these drugs in the ICU.

Paralytic infusions

- General
 - Paralysis based solely on P/F ratio is not recommended as an evidence-based strategy to reduce mortality in all ARDS patients due to recent trial data.
 - All paralyzed patients should be under appropriate deep sedation.
 - When paralysis is required it should be used for the shortest possible period
 - Paralysis infusion is not required for all patients undergoing prone positioning
 - Recommend starting at lowest infusion dose on a weight-based range and titrate up for clinical response (e.g. ventilator synchrony).
- Cisatracurium
 - Shortages are expected
 - Recommend reserving for patients who have contraindications to rocuronium infusion
- Rocuronium
 - Recommend as first-line paralytic given expected greater supply compared to cisatracurium
- Other
 - Consider sourcing other paralytic agents if a shortage of rocuronium develops

Antibiotics

- General
 - Twice weekly antimicrobial stewardship program (ASP) review is recommended
 - Early switch to enteral antibiotics where appropriate to preserve IV supply
- Ceftriaxone
 - Consider early switch to Amoxicillin-clavulanic acid (enteral) based on clinical stability, absorption and ASP review
 - Reducing the unnecessary use of ceftriaxone on the ward will preserve use for when it is needed for secondary bacterial infection.
- Amoxicillin-clavulanic acid
 - Consider sputum culture from endotracheal aspirate where possible to direct antimicrobial therapy.

Vasoactive Medications

- Norepinephrine
 - Consider initiating enteral midodrine to reduce dose requirement for norepinephrine
 - In the appropriate patient, phenylephrine or dopamine can be substituted.

COVID Specific Therapies

- See section on COVID therapeutics – recommend enrollment in clinical trials rather than empiric use of non-evidenced based therapies.