Trauma Delirium Management Guideline

Monitoring and Treatment

I. The confusion assessment method for the ICU (CAM-ICU) should be monitored each shift and reported to the team during rounds
   a. CAM-ICU should NOT be reported as unable to assess unless RASS <-3
   b. Consider RASS and CAM-ICU status when choosing treatment options
      i. Hypoactive delirium – CAM positive and RASS 0 to -3
         - Non-pharmacological management
         - Minimize sedating medications
      ii. Hyperactive or mixed hyper/hypoactive delirium – CAM positive and RASS -3 to +4
         - See algorithm
   b. Goal RASS should be specified on **ALL** patients

   II. If CAM positive, consider differential diagnosis (hypoxia, sepsis, CHF, over-sedation, deliriogenic medications)

Non-pharmacologic management**

- **Orient patient** (provide visual/hearing aids, re-orient, encourage communication, encourage proper sleep hygiene, and provide cognitively stimulating activities during the day)
- **Environment** (Mobilize patients early and often, provide familiar objects in patient's room, minimize noise at night, and remove unnecessary lines/drains)
- **Adjunctive** (perform SATs daily, provide adequate pain management, correct dehydration and electrolyte disturbances)

Deliriogenic Medications**

- Benzodiazepines
- Anticholinergics (diphenhydramine, glycopyrrolate, metoclopramide, H2 blockers, TCAs, cyclobenzaprine)
- Steroids
- Pain medications (if pain is not cause of agitation/delirium)
  - Decrease opioid dose
  - Utilize multimodal pain regimen

Special Considerations

- Geriatric population
  - Reduced antipsychotic (50%) doses should be initially used in patients > 65 years old
  - Avoid haloperidol doses >5mg or quetiapine doses >100mg in patients > 65 years old

Hyperactive Delirium

(includes mixed delirium with hyperactive component, ex: attempting to wean sedation)

Delirious (CAM-ICU positive)

Consider Differential Diagnosis (Sepsis, alcohol withdrawal, etc)
Remove Deliriogenic Medications**
Non-pharmacologic Protocol- Always attempt non-pharmacologic measures initially

CAM +, RASS +1 to +2

-Ensure adequate sleep and pain control
-Quetiapine 50mg q8-12hrs or olanzapine 5mg q 8-12hrs
-Haloperidol 1-10mg IV q4h prn breakthrough agitation

No response at 24hrs or multiple IV doses of haloperidol

-Reassess analgesia
-↑quetiapine dose to 100mg q8-12hrs or olanzapine to 10mg q8-12hrs***
-Continue haloperidol breakthrough
******If TBI, proceed to algorithm to the right**

No response at 24hrs or multiple

-Reassess analgesia
-↑quetiapine dose to 200mg q6-12hrs or olanzapine to 10mg q6-8hrs
-Continue haloperidol breakthrough

No response to maximal treatment over 48hrs

-Reassess analgesia
-Change atypical antipsychotic agents (DO NOT combine multiple daytime antipsychotics)

Move to **CAM +, RASS +3 to +4** algorithm at any point as needed

CAM +, RASS +3 to +4

Intubated/Trached?

- Ensure adequate pain control
- Haloperidol 5-20 mg IV/IM q15min prn extreme agitation
- Start sedation if none currently infusing
- Bolus (if receiving propofol) and/or increase rate of current sedative

RASS remains ≥ +3 with multiple doses of IV haloperidol

Consider switching to alternate sedative

Move to **CAM +, RASS +1 to +2** algorithm at any point as needed

Extubated

- Ensure adequate pain control
- Haloperidol 5-20 mg IV/IM q15min prn extreme agitation
- Consider dexmedetomidine

Traumatic Brain Injury

- Follow algorithm (see left) for escalation of antipsychotics.
- Consider starting IR Depakote/valproic acid 500 mg q8-6h (titrate up to max 60mg/kg/day, if needed), †
- Consider early use of propranolol 10-20mg q8-6h (max 360 mg/day) for agitation related to neurologic storming.

***Maximize** 1 agent **PRIOR** to altering delirium/agitation regimen.

***If **refractory** to all above measures, may trial Geodon (max: 40mg BID)
If unsuccessful, consult psychiatry for additional recommendations.

***Monitor QTc monitoring if receiving multiple QT-prolonging medications. Modify QT-prolonging medications if QTcF > 500. Avoid large doses of haloperidol in traumatic brain injury patients

†Considerations for Depakote: Obtain baseline LFTs (use with caution in patients with liver disease) and weekly LFTs while on therapy, only obtain valproate level if concerned for toxicity

References:

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3. Hughes CG, Mailloux PT, Devlin JW, et al. Dexmedetomidine or propofol for sedation in mechanically ventilated adults with sepsis. *NEJM*. 2021; 384:1424-1436.
4. Marra A, Wesley E, Pandharipande P, et al. The ABCDEF Bundle in Critical Care. *Crit Care Clin*. 2017; 33(2):225-243.
5. Plantier D, Luauté J; SOFMER group. Drugs for behavior disorders after traumatic brain injury: Systematic review and expert consensus leading to French recommendations for good practice. *Ann Phys Rehabil Med*. 2016 Feb;59(1):42-57. doi: 10.1016/j.rehab.2015.10.003.
6. Williamson D, Frenette A, et al. Pharmacological interventions for agitated behaviors in patients with traumatic brain injury: a systematic review. BMJ Open 2019;9:e029604

CAM ICU Assessment

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