Trauma Protocol # 25

DMC
Detroit Receiving Hospital
DETROIT MEDICAL CENTER

Delirium Management in the Trauma Patient- Guidelines

Monitoring

- **Intensive Care Delirium Screening Checklist (ICDSC)** is performed by nursing q12hr in ICU and reported to the team during rounds

- **Level of Arousal:** If RASS is -3 to -5 then ICDSC should not be reported as accuracy of delirium diagnosis limited.

- ICDSC score ≥ 4 is positive for Delirium

ICDSC score ≥ 4 (Delirium):

- Ensure no organic causes for confusion: Hypoxia, Sepsis, CHF, over-sedation, Deliriogenic medications (Benzo, anticholinergic meds, metoclopramide, H2 blockers, diphenhydramine, glycopyrrolate), steroids, etc.)

- Consider RASS and ICDSC status when choosing treatment options
    - Hypoactive delirium: ICDSC positive and RASS 0 to -3
        - Non-pharmacological management
        - Minimize sedating medications
    - Hyperactive or mixed hyper/hypoactive delirium: ICDSC positive and RASS -3 to +4
        - See algorithm

Treatment

Non-pharmacological Treatments:

- Environment: Sleep Hygiene: lights off at night and on during day, control noise at night, ambulate or mobilize patients early and often
- Orientation: Provide visual and hearing aids, encourage communication and re-orient patient, have family objects from patient's home, non-verbal music
- Adjunctive: Perform Spontaneous Awaking Trial (SAT) daily, provide adequate pain control (multi-modal: acetaminophen, NSAIDS, Local anesthetics), correct dehydration and electrolytes

Deliriogenic Medications:

- Benzodiazepines
- Anticholinergic medications (metoclopramide, H2 blockers, diphenhydramine, glycopyrrolate)

- Steroids
- Pain medications (if pain is NOT the cause of agitation/delirium)
    - Multimodal
    - Decrease opioid dose

Pharmacological Treatments:

- Quetiapine: Start Quetiapine 25 to 50 mg PO q12 hour Formulation: tabs only
- Reassess daily and increase quetiapine by 25-50mg (max dose 200 mg BID)
- Olanzapine 5mg PO every 24 hour initially (max dosage 20mg daily, may divide into 10mg q12hour) Formulation: tabs, Orally disintegrating tabs and IM injection
- Haloperidol 2.5mg – 5mg IV/IM q 4-6 hour prn breakthrough agitation

    Side Effects:
    - Quetiapine: Prolonged QT_c, sedation, orthostatic hypotension, extrapyramidal symptoms
    - Haloperidol: Prolonged QT_c, sedation, extrapyramidal symptoms
    - Olanzapine: Prolonged QT_c, sedation, serotonin syndrome, extrapyramidal symptoms

- Propofol: titrate per ICU guidelines to goal RASS
- Dexmedetomidine: titrate per ICU guidelines to goal RASS

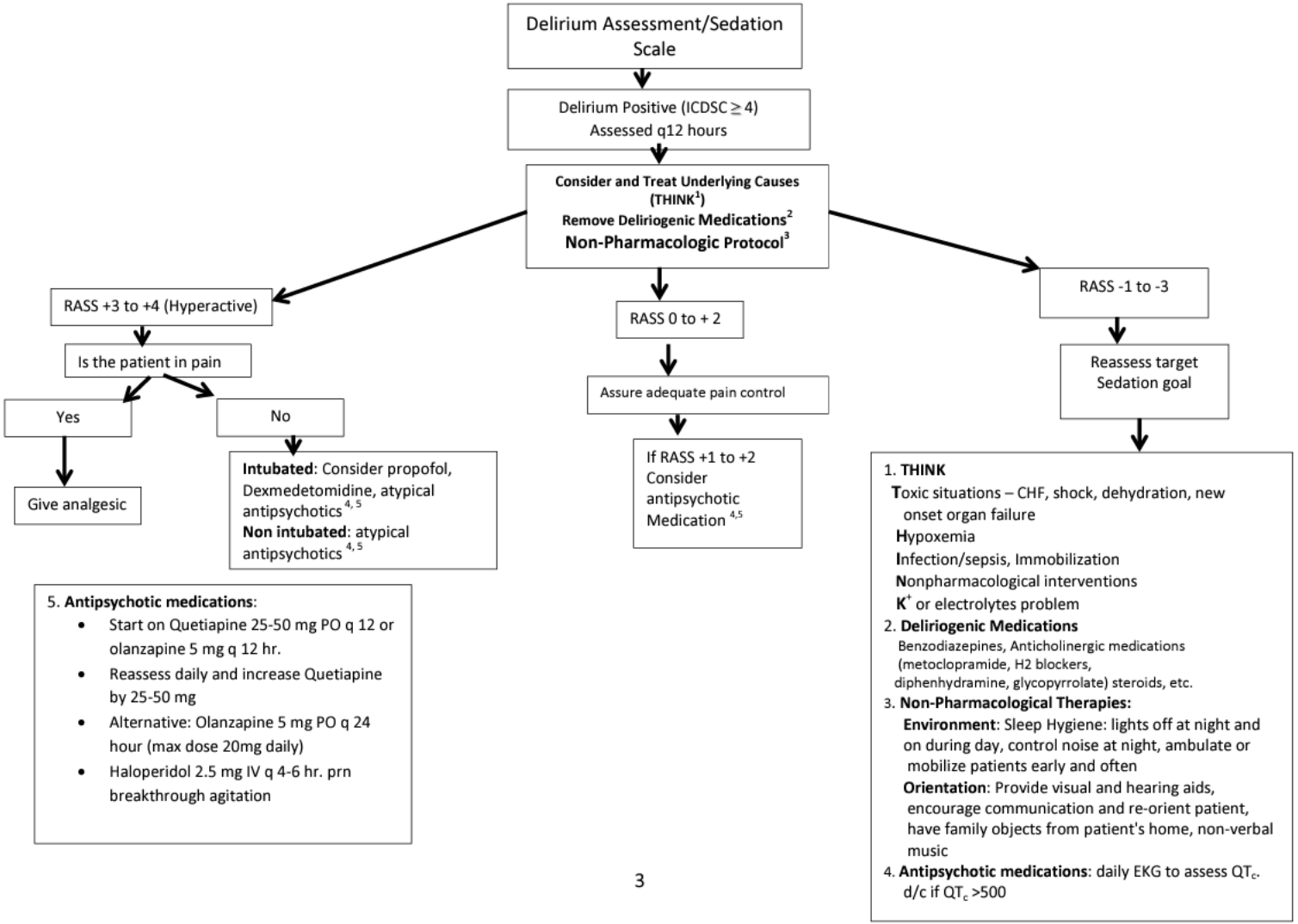
    Side Effects:
    - Propofol: hypotension, bradycardia and PRIS
    - Dexmedetomidine: bradycardia and hypotension

Special Considerations

- Traumatic Brain Injury
    - Avoid large doses of haloperidol in TBI patients
    - Consider early use of propranolol 10-20mg q8 hour for agitation related to
    - neurologic storming
- Geriatric population
    - Consider reduced dosage in patients >65 years old

Documentation:
Nursing will notify SICU physician if patient positive for Delirium

SICU rounding residents will include in the progress notes if the patient is being treated for Delirium


Delirium Assessment/Sedation Scale
Delirium Positive (ICDSC ≥ 4) Assessed q12 hours
Consider and Treat Underlying Causes (THINK[1])
Remove Deliriogenic Medications[2]
Non-Pharmacologic Protocol[3]
RASS +3 to +4 (Hyperactive)
Is the patient in pain
Yes
No
Give analgesic
Intubated: Consider propofol, Dexmedetomidine, atypical antipsychotics [4, 5]
Non intubated: atypical antipsychotics [4, 5]
RASS 0 to + 2
Assure adequate pain control
If RASS +1 to +2 Consider antipsychotic Medication [4,5]
RASS -1 to -3
Reassess target Sedation goal
1. THINK
Toxic situations – CHF, shock, dehydration, new onset organ failure
Hypoxemia
Infection/sepsis, Immobilization
Nonpharmacological interventions
K+ or electrolytes problem
2. Deliriogenic Medications
Benzodiazepines, Anticholinergic medications (metoclopramide, H2 blockers, diphenhydramine, glycopyrrolate) steroids, etc.
3. Non-Pharmacological Therapies:
Environment: Sleep Hygiene: lights off at night and on during day, control noise at night, ambulate or mobilize patients early and often
Orientation: Provide visual and hearing aids, encourage communication and re-orient patient, have family objects from patient's home, non-verbal music
4. Antipsychotic medications: daily EKG to assess QTc. d/c if QTc >500
5. Antipsychotic medications:
Start on Quetiapine 25-50 mg PO q 12 or olanzapine 5 mg q 12 hr.
Reassess daily and increase Quetiapine by 25-50 mg
Alternative: Olanzapine 5 mg PO q 24 hour (max dose 20mg daily)
Haloperidol 2.5 mg IV q 4-6 hr. prn breakthrough agitation

Richmond Agitation Sedation Scale (RASS)

Score	Term	Description	
+ 4	Combative	Overtly combative, violent, immediate danger to staff	
+ 3	Very agitated	Pulls or remove tube (s) or catheter (s); aggressive	
+ 2	Agitated	Frequent non-purposeful movement. Fights ventilator	
+ 1	Restless	Anxious but movements not aggressive vigorous	
0	Alert & Calm		
- 1	Drowsy	Not fully alert, but has sustained awakening (*eye opening/eye contact) to voice (≥ 10 seconds.)*	*Verbal Stimulation*
- 2	Light sedation	Briefly awakens with eye contact to voice *(≤ 10 seconds*)	
- 3	Moderate sedation	Movement or eye opening to voice (*no eye contact*)	
- 4	Deep sedation	No response to *voice*, movement or eye opening to physical stimulation	*Physical stimulation*
- 5	Unarousable	No response to *voice* or *physical* stimulation	

Procedure for RASS Assessment

1. Observe patient

a. Patient alert, restless, or agitated (Score 0 to + 4)

2. If not alert, state patient's name and *say to open eyes and look at speaker*

b. Patient awakens with sustained eye opening & eye contact (score -1)

c. Patient awakens with eye opening & eye contact, not sustained (score – 2)

d. Patient has any movement in response to voice, no eye contact (score -3)

3. When no response to verbal stimulation, physically stimulate patient by shaking shoulder and/or rubbing sternum.

e. Patient has any movement to physical stimulation (score – 4)

f. Patient has no response to any stimulation (score -5)

Intensive Care Delirium Screening Checklist (ICDSC)

1. Altered level of consciousness. Choose one from A to E		
A. Exaggerated response to normal stimulation	SAS = 5.6.7 or RASS =+ 1 + 4	(1 point)
B. Normal wakefulness	SAS = 4 or RASS =0	(0 point)
C. Response to mild or moderate stimulation (follows command)	SAS = 3 or RASS = -1 to – 3	(1 point)
D. Response only to intense and repeated Stimulation (loud voice & pain)	SAS = 2 or RASS = - 4	Stop assessment
E. No response	SAS= 1 or RASS = - 5	Stop assessment
2. Inattention (1 point if any present) **A**. Difficulty in following commands or **B**. Easily distracted by external stimuli or **C**. Difficulty in shifting focus *Does the patient follow you with their eyes?*		
3. Disorientation (1 point for any abnormality) **A.** Mistake in either time, place or person *Does the patient recognize ICU caregivers who have cared for him/her and not recognize those who have not? What kind of place are you in?*		
4. Hallucinations or delusions (1 point for either) **A**. Equivocal evidence of hallucinations or a behavior due to hallucinations (hallucination = perception of something that is not there with no stimulus) or **B.** Delusions or gross impairment of reality testing (delusion = false belief that is fixed/unchanging) *Any hallucinations now or over past 24 hours? Are you afraid of the people or things around you? (fear that is inappropriate to the clinical situation)*		
5. Psychomotor agitation or retardation (1 point for either) **A**. Hyperactivity requiring the use of additional sedative drugs or restraints in order to control potential danger. **B**. Hypoactive or clinically noticeable psychomotor slowing or retardation Based on documentation and observation over shift by primary caregiver.		
6. Inappropriate speech or mood. (1 point foe either) A. Inappropriate, disorganized, or incoherent speech or B. Inappropriate mood related to events or situation *Is this patient apathetic to current clinical situation (lack of emotion)?* *Any gross abnormalities in speech or mood? Is patient inappropriately demanding?*		
7. Sleep/wake cycle disturbance (1 point for any abnormality) **A**. Sleeping < 4 hr. at night or **B**. Waking frequently at night (do not include wakefulness initiated by medical staff or loud environment) or **C.** Sleep > 4 hr. during day *Based on primary caregiver assessment.*		
8. Symptom fluctuation (1 point for any) Fluctuation of any of the above items (1-7) over 24 hour (from one shift to another) Based on primary caregiver assessment **Total Intensive Care Delirium Screening Checklist Score** (add 1-8) _____		

*Delirium assessment cannot be completed in patient who are stuporous or comatose.

SAS = Riker Sedation Agitation Scale, RASS = Richmond Agitation Sedation Scale

Citations:

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2. Reade M, Eastwood GM, Bellomo R, et al. Effect of dexmedetomidine added to standard care on ventilator-free time in patients with agitated delirium: A randomized clinical trial. *JAMA*. 2016; 315(14):1460-1468.
3. Page V, Ely E, Gates S, et al. Effect of intravenous haloperidol on the duration of delirium and coma in critically ill patients (Hope-ICU): a randomized, double-blind, placebo-controlled trial. *Lancet Respir Med*.2013;1:515-523.
4. Brummel N, Girard T. Preventing delirium in the intensive care unit. *Crit Care Clin*. 2013;29:51-65.
5. Devlin J, Roberts R, Fong J ,et al. Efficacy and safety of quetiapine in critically ill patients with delirium: a prospective, multicenter, randomized, double-blind, placebo-controlled pilot study. *Crit Care Med*. 2010;38:419- 427.
6. Sessler CN, Gosnell M, Grap MJ, Brophy GT, O'Neal PV, Keane KA et al. The Richmond Agitation-
7. Sedation Scale: validity and reliability in adult intensive care patients. Am J Respir Crit Care Med 2002; 166:1338-1344.

8. Ely EW, Truman B, Shintani A, Thomason JWW, Wheeler AP, Gordon S et al. Monitoring sedation status over time in ICU patients: the reliability and validity of the Richmond Agitation Sedation Scale (RASS). JAMA 2003; 289:2983-2991.