2018 Dynamic Practice Guidelines for Emergency General Surgery

Committee on Acute Care Surgery, Canadian Association of General Surgeons

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POST-OPERATIVE DELIRIUM

Dynamic Practice Guidelines for Emergency General Surgery

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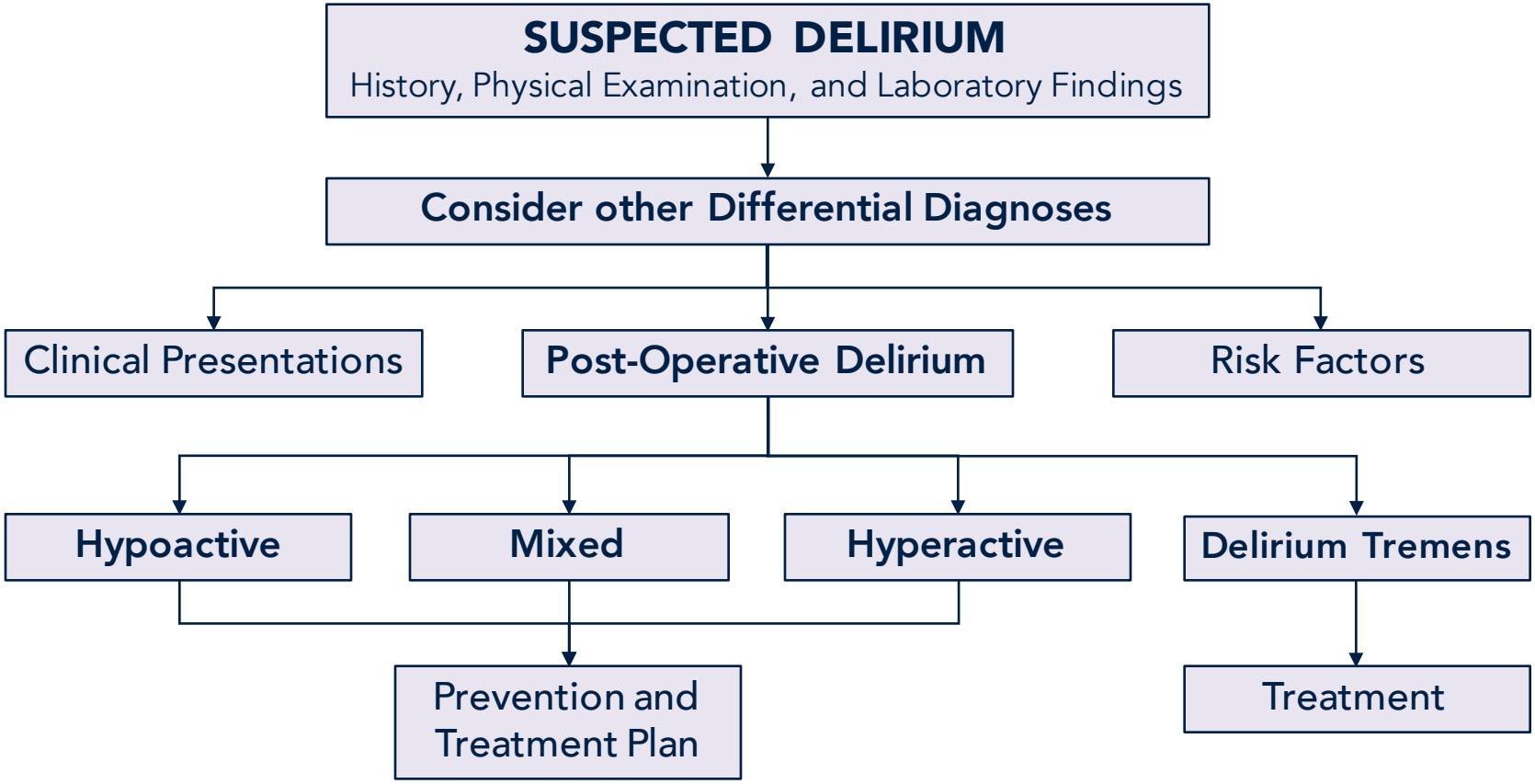
Clinical Practice Guideline

POST-OPERATIVE DELIRIUM



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Definiton

- A state of altered consciousness mainly characterized by acute onset of sudden attentional and awareness deficits with a fluctuating course
- DSM-V: Criteria for delirium

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DSM-V Criteria for Delirium

A. Disturbance in attention (i.e., reduced ability to direct, focus, sustain, and shift attention) and awareness (reduced orientation to the environment).

B. The disturbance develops over a short period of time (usually hours to a few days), represents a change from baseline attention and awareness, and tends to fluctuate in severity during the course of a day.

C. An additional disturbance in cognition (e.g., memory deficit, disorientation, language, visuospatial ability, or perception).

D. The disturbances in criteria A and C are not explained by another pre-existing, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma.

E. There is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiologic consequence of another medical condition, substance intoxication or withdrawal (i.e., because of a drug of abuse or to a medication), or exposure to a toxin or is because of multiple etiologies.

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Epidemiology

- Increasing incidence as the population ages
- Approx. 30-40% of all patients >65 years of age will develop an episode of delirium during their hospitalization
- High Risk Patients:
  - ICU patients
  - Elderly patients with decreased mobility
  - Post-cardiac surgery

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Risk/ Precipitating Factors

Patient Factors	Surgery Factors	Modifiable Factors
Age (>80 years)	Emergency surgery	Sepsis control
Male gender	Open cardiac surgery	Fluid status
Depression	Arthroplasty	Sleep deprivation
Sensory impairment	Major aortic procedures	External Drains (Foley, CVC, JP)
Pre-existing cognitive impairments		Metabolic disturbances (Glucose and electrolytes)
		Environmental (Overstimulation, physical restraints)
		Medications (Sedatives, narcotics, benzodiazepines, anti-cholinergic)

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Differential Diagnosis

- Dementia
  - Longer time course (pre-existing cognitive impairments)
  - Less fluctuating course
- Seizures
  - Mimic delirium during the post-ictal state
- Psychiatric conditions
  - Can include depression, manic state of bipolar disorder, schizophrenia, dissociative disorders
- Aphasia
  - Acquired disorder of language due to brain injuries
  - Careful examination of language function is helpful

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Clinical Presentations

Hypoactive Subtype	Hyperactive Subtype	Mixed Subtype
• Decreased motor activity • Inability to organize thoughts • Cooperative and docile • Lethargy • Often under-recognized or mistreated for dementia	• Agitated/ aggressive • Un-cooperative and even combative at times • Frequent hallucinations • Easily recognised	• Fluctuating between hypo- and hyperactive states • Hypoactive state during day time • Hyperactive state during night time (sun downing)

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Clinical Assessment – Easy Bedside Tests

- Attention Test
  - Ask the patient to spell "FARM" or "WORLD" backward.

- Vigilance "A" Test
  - A list of 60 letters of which 18 are the letter "A" is read to the patient at a rate of 1 letter per second. The patient is instructed to indicate to the examiner every time the letter "A" is heard. Only 2 errors are acceptable and more than 2 errors are considered abnormal

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Clinical Assessment – Lab/ Imaging Investigations

- Blood works
  - Full septic work-ups
  - Extended electrolytes, LFTs, BUN, and Creatinine
  - Drug screen – only if clinically suspected

- Imaging
  - ECG
  - Chest X-Ray
  - CT Head – if new onset of focal neurological symptoms or head injury

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Treatment: Non-Pharmacological

- Cognitive stimulation
  - Frequent re-orientation (clock, calendar)
  - Family at bedside
- Improve sensory impairment
  - Provide glasses, hearing aids, and dentures
- Mobility
  - Out of bed for meals
  - De-catherization/ De-'Tube'
- Correction of metabolic abnormalities
  - Maintain adequate hydration and encourage oral intake
- Discontinuation of deliriogenic medications
  - Sedatives, narcotics, benzodiazepines, anti-emetics

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Treatment: Pharmacological

- Haloperidol
  - Pros - most accumulated historical evidence, IV / IM / oral route
  - Cons - QT prolongation, extrapyramidal symptoms >4.5 mg daily
- Quetiapine
  - Pros - most sedating and helpful for sleep
  - Cons - no IV / IM / sublingual (SL) form, QT prolongation
- Olanzapine
  - Pros – SL / IM form
  - Cons - most anticholinergic, QT prolongation

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Treatment: Dosages/ Side Effects

Drug	Dosage
Haloperidol	0.25 –1 mg PO/IM to be repeated every 30–60 min if needed. Maximum dose of 3 – 4 mg in 24hr
Quetiapine	12.5 – 50 mg PO; repeat every 30–60 min if needed. Consider maximum dose of 175 mg/day
Olanzapine	2.5 – 5 mg PO/SL/IM; repeat every 30–60 min if needed

Drug	Side effects
Haloperidol	Dystonia, akathisia, rigidity, tremor, and bradykinesia (Parkinsonism)
Quetiapine	Drowsiness, dry mouth, and asthenia
Olanzapine	Weight gain, dry mouth, and dizziness

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Definition of Delirium Tremens

- Clinical manifestation of delirium (as previously outlined) plus alcohol withdrawal
- DSM-V: Criteria for alcohol withdrawal

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DSM-V Criteria for Alcohol Withdrawal

A. Cessation of or reduction in heavy and prolonged use of alcohol

B. At least two of eight possible symptoms after reduced use of alcohol:
   i. Autonomic hyperactivity
   ii. Hand tremor
   iii. Insomnia
   iv. Nausea or vomiting
   v. Transient hallucinations or illusions
   vi. Psychomotor agitation
   vii. Anxiety
   viii. Generalized tonic–clonic seizures

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Epidemiology of Delirium Tremens

- Approx. 3 - 5% of all patients admitted for alcohol withdrawal
- Development of delirium during alcohol withdrawal is predicted by the followings:
  - CIWA-Ar score > 15
  - Recent withdrawal seizures
  - History of prior withdrawal delirium
  - Recent misuse of depressant agents
  - Electrolyte abnormalities (low K, Mg)

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Clinical Manifestations of Delirium Tremens

- Withdrawal delirium usually begins 48 – 72 hours after the appearance of symptoms of alcohol withdrawal and lasts from 1 – 7 days

- Mortality ~ 1 – 4%
  - Hyperthermia
  - Cardiac arrhythmias
  - Complications from withdrawal seizures