Best Practices in Delirium Prevention and Management

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Disclosures

I have no disclosures or conflicts of interest to report

Introduction

- Most common neuropsychiatric syndrome in medically hospitalized patients
- Risk Factors
  - Age
  - Cognitive impairment
  - Illness severity
  - Visual impairment
  - Urinary catheterization
  - Nutritional deficiency
  - Length of hospital stay
- Long-term sequelae

Recognition of Delirium

- Disturbance of consciousness
- Inattention
- Cognitive deficits
- Disturbance of sleep-wake cycle
- Psychotic symptoms
- Psychomotor symptoms
- Time course: acute onset, fluctuating cognition

Clinical Evaluation/Assessment Tools

- Gold standard: careful clinical assessment
  - Acuity of mental status changes
  - Previous h/o delirium or cognitive impairment
  - Precipitating factors
- Screening Tools:
  - Confusion Assessment Method (CAM)
  - Confusion Assessment Method for the Intensive Care unit (CAM-ICU)
  - Intensive Care Delirium Screening Checklist (ICDSC)
  - Delirium Rating Scale-Revised 98 (DRS-R-98)

Etiologies

- Medication effect
- Electrolyte disturbances
- Infection
- Reduced sensory input
- Intracranial disorders

Deliriogenic Medications

TABLE 25-1 • Common Deliriogenic Medication Classes.

Class	Type	Examples
Anxiolytic, sedative-hypnotic	Benzodiazepine	Midazolam, alprazolam, lorazepam
Analgesics	Narcotics	Meperidine, tramadol
	NSAIDs	Ibuprofen
Antihistamines		Diphenhydramine
		Hydroxyzine
Gastrointestinal agents	Antispasmodics	Loperamide Dicyclomine
	H2-blockers	Famotidine Cimetidine Ranitidine
Antibiotics	Fluoroquinolones	Levofloxacin Ciprofloxacin
Psychotropics	Tricyclic antidepressants	Amitriptyline Nortriptyline
		Lithium
Steroids		Prednisone Dexamethasone
Cardiovascular agents	Antiarrhythmics	Amiodarone
	Digitalis	
	Antihypertensives (i.e., beta-blockers)	Metoprolol
Anticonvulsants	Barbiturates	
Anti-parkinsonians		Benztropine, trihexyphenidyl
Antinausea meds		Scopolamine

Medical Workup

- Based upon clinical history and physical examination
- CBC, electrolytes, BUN/Cr, liver enzymes, urinalysis, CXR, EKG
- Brain imaging?
- EEG?

~~Treatment~~ Management: Antipsychotics

- Most common class for management of symptoms
- Controversial
- Not been shown to:
  - Impact delirium incidence, duration, severity of hospital length of stay
- Lack data on patient-centered measures:
  - Effects on psychotic symptoms, emotional distress, long-term functional outcomes

Management: Antipsychotics

- Target symptoms:
  - Insomnia
  - Hallucinations
  - Paranoia
  - Delusions
  - Psychomotor agitation
- No one superior agent
  - Optimization of pharmacodynamics
  - Consideration of side effect profile
  - Available route of administration
- Serious medical risks
  - Prolonged QTc interval
  - Extrapyramidal symptoms
  - Neuroleptic Malignant Syndrome (NMS)
- Clear plan for taper or discontinuation prior to discharge

Antipsychotics in Delirium

TABLE 25-2 • Antipsychotics Commonly Used in the Symptomatic Treatment of Delirium.[82]

Antipsychotic	Route	Half-Life	Starting Dose	Maximum Daily Dose	Special Considerations
Haloperidol	PO, IV, IM	14–30 hours	0.5–1 mg BID	Upper limit has not been established	Minimal effect on vital signs; higher EPS risk
Quetiapine	PO	6–7 hours	12.5–25 mg BID	800 mg	Less likely to affect motor symptoms of Parkinson's; sedating
Risperidone	PO, ODT	20–30 hours	0.5 mg BID PRN	8 mg	Dose adjusted for renal dysfunction
Olanzapine	PO, ODT, IM	30 hours	2.5–5 mg BID	20 mg	Avoid in patients receiving parenteral benzodiazepines; has antiemetic properties; sedating

Management: Non-Antipsychotics

- Benzodiazepines
- Dexmedetomidine
- Clonidine
- Antiepileptic agents

Delirium Prevention

- Behavioral interventions
  - Regulation of sleep/wake cycle
  - Early mobilization
- Pharmacologic interventions
  - Prophylactic Antipsychotics?
  - Sleep aids

ORIGINAL ARTICLE

Low-Dose Nocturnal Dexmedetomidine Prevents ICU Delirium
A Randomized, Placebo-controlled Trial

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Delirium Misconceptions

- Patient is Oriented x 3=Not Delirious
- We Expect Old and/or Sick Patients to Get Confused at Times
- Delirium Always Resolves
- Delirium is Due to a Psychiatric Cause
- Delirium Treatment Should Always Include Antipsychotic Medications
- It is Best to Let Quiet Patients Rest
- Patients in the ICU are Expected to Become Delirious

Case Example

- 76 yo man with no past psychiatric history (including no substance use history) and h/o metastatic lung adenocarcinoma, HTN, HL p/w SOB, fever—found to have PNA. On hospital day 2, the patient develops restlessness, visual hallucinations and is pulling out IV line.
- Which of the following is the best choice for management of symptoms of delirium?
  - A. lorazepam 2 mg IM x 1
  - B. trazodone 25 mg q4 PRN
  - C. olanzapine 2.5 mg BID
  - D. behavioral interventions only

Case Example--Answer

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Question 1

- Which of the following symptoms is a reasonable treatment target if using antipsychotics for delirium?
  - A. Disorientation
  - B. Decreased level of consciousness
  - C. Memory Impairment
  - D. Hallucinations

Question 1--Answer

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- *Antipsychotics have not been shown to improve disorientation, level of consciousness or memory impairment in delirium. Antipsychotics CAN be helpful for decreasing hallucinations.*

Question 2

- Which of the following statements about the clinical features of delirium is true?
  - A. Mental status changes are gradual and develop over months to years
  - B. The symptoms are the direct consequence of another medical condition, substance intoxication or withdrawal
  - C. Psychotic symptoms are required to make the diagnosis
  - D. Mental status changes are stable throughout the duration of delirium

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- *Mental status changes occur acutely in delirium and wax and wane. Psychotic symptoms may be present but are not required to make the diagnosis. The mental status changes seen in delirium are the consequence of an underlying toxic or medical condition.*

Key Points

- Delirium is an acute confusional state always caused by an underlying physiological disturbance(s).
- Newly diagnosed delirium is a neuropsychiatric emergency, as it can signal an underlying life-threatening illness.
- Clinical assessment is the gold standard for the diagnosis of delirium and a high index of suspicion is required. Standardized screening tools can be helpful for detection and monitoring.
- The definitive treatment of delirium is the identification and treatment of the underlying medical illness.
- Behavioral interventions are most indicated for prevention and management of delirium.
- There are no FDA-approved medications for the treatment of delirium, however antipsychotics are commonly used to manage dangerous hyperactive or psychotic symptoms. Non-antipsychotic alternatives include alpha agonists and antiepileptic agents.