Best Practices in Delirium Prevention and Treatment

Sejal B. Shah, MD
Chief, Division of Medical Psychiatry
Director, Consultation-Liaison Psychiatry Fellowship
Brigham and Women’s Hospital

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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

Medical Workup
- CBC, electrolytes, BUN/Cr, liver enzymes, urinalysis, CXR, EKG
- Brain imaging?
- EEG?

Treatment: 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

Treatment: 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>
<thead>
<tr>
<th>Antipsychotic</th>
<th>Route</th>
<th>Half-Life</th>
<th>Starting Dose</th>
<th>Maximum Daily Dose</th>
<th>Special Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol</td>
<td>PO, IM</td>
<td>25-30 hrs</td>
<td>5-10 mg BD</td>
<td>40 mg BD</td>
<td>Minimal effect on vital signs, higher EPS risk</td>
</tr>
<tr>
<td>Quetiapine</td>
<td>PO</td>
<td>6-7 hrs</td>
<td>12.5-25 mg BD</td>
<td>800 mg</td>
<td>Less likely to affect motor symptoms of delirium, sedating</td>
</tr>
<tr>
<td>Risperidone</td>
<td>PO, IM</td>
<td>20-30 hrs</td>
<td>3-15 mg BD</td>
<td>900 mg</td>
<td>Dose adjusted for renal dysfunction</td>
</tr>
<tr>
<td>Olanzapine</td>
<td>PO, IM</td>
<td>10-15 hrs</td>
<td>2.5-5 mg BD</td>
<td>20 mg</td>
<td>Avoid in patients receiving parenteral benzodiazepines; has antinamic properties, sedating</td>
</tr>
</tbody>
</table>

Treatment: Non-Antipsychotics
- Benzodiazepines
- Dexmedetomidine
- Clonidine
- Antiepileptic agents
Delirium Prevention

- Pharmacologic interventions?
  - Antipsychotics
    - Risk/Benefit
  - Sleep aids
  - Behavioral interventions

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

- 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 caused by an underlying physiological disturbance.
• Clinical assessment is the gold standard for the diagnosis of delirium and a high index of suspicion is required.
• Newly diagnosed delirium is a neuropsychiatric emergency, as it can signal an underlying life-threatening illness.
• The definitive treatment of delirium is the identification and treatment of the underlying medical illness.
• There are no FDA-approved medications for the treatment of delirium, however antipsychotics are commonly used to manage hyperactive or psychotic symptoms. Non-antipsychotic alternatives include alpha agonists and antiepileptic agents.