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ELDER CARE

A Resource for Interprofessional Providers

Delirium

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Delirium is an acute confusional state that occurs in response to physiologic stress, most commonly from a medical illness. It is a clinical syndrome seen frequently in older adults, particularly in hospital settings, presenting in up to 30% of older adult inpatients and 70% of older adults in critical care units. Delirium prolongs hospital stays, is associated with functional decline, and results in increased rates of institutionalization and death. It is often missed clinically and as discussed later, can often be prevented.

Risk Factors

Predisposing factors include age over 80 years, prior history of delirium, male gender, immobility, sensory impairment, multiple medical co-morbidities, polypharmacy, and malnutrition. In addition, patients with mild cognitive impairment, dementia or other neurodegenerative disorders, cerebrovascular disease, or chronic substance abuse are also at increased risk.

Precipitating factors include conditions such as an acute illness, metabolic derangements, use of physical restraints, dehydration, pain, infection, urinary retention and fecal impaction. Delirium can also occur in the perioperative period in patients who have undergone surgery. In addition, delirium can result from changes in medication regimens and substance use/abuse. Medications commonly associated with delirium are shown in Table 1.

Diagnosis

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines delirium as (1) a disturbance in attention that (2) develops over a short period of time and (3) is accompanied by a disturbance in cognition. It adds that (4) these disturbances are not better explained by a pre-existing, established, or evolving neurocognitive disorder, and do not occur in the context of a severely reduced level of arousal such as coma. Also, that 5) there should also be evidence from history, physical exam, or lab testing that the disturbances *are caused* by a medical condition or exposure to a medication or toxin. Note that newly diagnosed dementia can sometimes be confused with delirium. Table 2 lists key differences.

Delirium can have different clinical presentations. When patients have overt behavior disturbances and obvious confusion, *hyperactive* delirium is readily diagnosed. Most delirious older adults, however, present in a quiet, *hypoactive* state, and their delirium may be less evident on exam. With *mixed* delirium, patients often fluctuate between the two. Delirium assessment tools can help to identify hyperactive, hypoactive, and mixed types.

The Confusion Assessment Method (CAM) is a widely used, evidence based instrument for delirium diagnosis. It is well -validated with high sensitivity, specificity, and inter-rater reliability. The CAM has four components. To diagnose delirium, the first two must be present: (1) acute onset of changing or rapidly fluctuating mental status, and (2) inattention, along with at least one of the next two components (3) disorganized thinking and/or (4) altered level of consciousness (Table 3).

Table 1. Medications Commonly Associated with Delirium

Neuropsychiatric Medications	***Allergy Medications***
• Anticonvulsants	• Anticholinergics
• Antidepressants	• Antihistamines
• Antipsychotics	***Sedatives***
• Dopamine agonists	• Benzodiazepines and all other sedative-hypnotics
Gastrointestinal Medications	***Herbal Medicines***
• Antiemetics	• Atropa belladonna
• Antispasmodics	• Burdock root
• H-2 blockers	• Black henbane
Cardiovascular Medications	• Jimson weed
• Antiarrhythmics	• Mandrake
• Beta blockers	• St. John's Wort
• Clonidine	• Valerian
• Digoxin	***Miscellaneous***
• Diuretics	• Corticosteroids
Analgesics	• Hypoglycemics
• Opioids	• Muscle relaxants
• Non-steroidal anti-inflammatory medications	• Mydriatics

TIPS FOR DEALING WITH DELIRIUM IN OLDER ADULTS

- Although delirium is common in older adults, particularly in hospital and long-term care settings, it is frequently missed.
- The CAM is a well-validated tool for confirming the diagnosis of delirium.
- Many medical conditions precipitate delirium in older adults – prompt diagnosis and treatment are essential.
- Evaluation must include a medication review to identify potential contributory drugs (include OTC and complementary and alternative medications).
- Multicomponent, non-pharmacologic delirium prevention strategies (Table 4) can help to reduce the occurrence of delirium in older adults.

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Table 2. Distinguishing Delirium from Common Dementias		
Characteristic	***Delirium***	***Dementia***
Onset	Acute	Insidious
Cognitive Dysfunction	Obvious	Can be subtle in early dementia
Mental Status	Fluctuating	Progressive impairment
Reversibility	Potentially Reversible	Irreversible

Treatment

Once delirium is diagnosed, treatment should be instituted immediately, as the duration of delirium is associated with increasing risks of long-term cognitive impairment.

Resolving underlying medical problems is the best intervention for treating delirium. Patients should be evaluated for treatable causes, such as the precipitating factors listed previously. Always review medications, especially any recently started. Further testing, including brain imaging, lumbar puncture, and/or EEG should follow if a treatable cause is not identified. Even after treating a causal condition, however, resolution of delirium may take weeks to months to resolve, and sometimes as long as a year.

Behavioral interventions (Table 4) can be effective not only for preventing delirium, but also for treating delirium once it has developed. Physical restraints can worsen symptoms and should be avoided.

Pharmacologic therapy is often used in the treatment of delirium, but its role and value depend on the clinical situation. Drug treatment may reduce agitation, but prolong delirium and cognitive decline. Hypoactive delirium is managed without medications by treating reversible medical conditions and instituting the interventions listed in Table 4.

Hyperactive delirium, on the other hand, can require emergency intervention to prevent patients from hurting themselves or others. Although no medications are FDA approved for treating delirium, antipsychotics can be used when no other measures are successful. While haloperidol has long been considered the drug of choice for hyperactive delirium and it can be administered by multiple routes (PO, IM, IV), recent data suggest that the newer antipsychotics (e.g., quetiapine risperidone, olanzapine) result in more rapid symptom improvement and are better tolerated by patients, including fewer extrapyramidal side effects. Benzodiazepines are indicated only for the treatment of delirium from alcohol or benzodiazepine withdrawal.

Table 3. How to Assess the Diagnostic Criteria in the Confusion Assessment Method (CAM)

- **Acute Change or Fluctuation in Mental Status**: Assess by history and observation. Staff and family can attest to the admission/pre-op or pre-hospital cognitive status of the patient. Any acute confusional state should make the provider consider delirium.
- **Inattention**: Is the patient able to answer a direct question with an appropriate answer? Can the patient stay "on track" in normal conversation? If the answer is no, also look for fluctuations in levels of attention, which can further signal delirium.
- **Disorganized Thinking**: Is the patient's speech/thought process rambling, unclear, unpredictable, illogical, and/or irrelevant?
- **Altered Level of Consciousness**: Assess the patient for alertness, vigilance, lethargy, stupor, or coma.

Table 4. Prevention and Treatment of Delirium

- Orientation: provide clock, calendar, white board, staff re-orientation
- Cognitive stimulation: provide familiar visitors, activities
- Improve sleep: avoid nighttime vitals and blood draws, provide quiet environment
- Early mobilization in hospital: reduce immobility, use occupational and physical therapy
- Nutrition and hydration (don't forget dentures)
- Avoid restraints, tethers, urinary catheters
- Facilitate communication with hearing aids, spectacles
- Avoid medications with anticholinergic effects
- Manage pain; do not over- or under-treat
- Assess for new medical issues and treat immediately

References and Resources

Confusion Assessment Method Training Manual. https://www.hospitalelderlifeprogram.org/uploads/disclaimers/CAM-S_Training_Manual.pdf
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