

Caring for patients with delirium

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DELIRIUM IS AN ACUTE, reversible change in baseline cognition that usually occurs as the result of an underlying medical disorder, medication, toxin exposure, substance intoxication or withdrawal, or a combination of factors.¹ Delirium develops over hours to a few days and is usually brief, lasting 1 week or less, and rarely persists for more than 1 month.^{1,2}

Regardless of duration, delirium is a medical emergency that requires immediate treatment. If not promptly identified, it can have a profound impact on quality of life and lead to prolonged hospitalization, increased costs, long-term cognitive disorders such as dementia, increased mortality, and significant patient and family distress.^{2,3} This article discusses early identification, nursing interventions, and nonpharmacologic and pharmacologic treatments that can shorten the duration of delirium.

Prevalence

Delirium reduces the ability to sustain and shift attention; hinders orientation to the environment; and disturbs thinking, perception, emotions, behavior, and the sleep-wake cycle.^{1,2} Delirium can affect patients in any healthcare setting and at any age, but it is most common among hospitalized older adults.⁴ Based on current estimates, delirium affects:

- 17% or more of patients presenting to the ED
- 10% to 70% of older adults postoperatively

- 50% of patients in the ICU⁵
- 60% of residents in a long-term-care facility or postacute care setting
- up to 80% of those receiving end-of-life care.^{4,6}

Pathophysiology

The pathophysiology of delirium is not well understood. Studies propose the development of delirium may arise from disturbances in neurotransmitters (acetylcholine, dopamine, and gamma-aminobutyric-acid), inflammatory pathways (increased cytokine levels), stress responses (increased levels of cortisol), and anatomical changes (encephalopathy and brain lesions).⁷

The origin of delirium is usually multifactorial.⁸ Some predisposing factors include advanced age,

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preexisting cognitive decline, polypharmacy, and alcohol intoxication or withdrawal.^{2,8} Precipitating factors may include hypoxia, head injury, urinary tract infection, pain, surgical stress, kidney or liver failure, pneumonia, hypoglycemia, vitamin deficiency (thiamine), anemia, fecal impaction, and sleep deprivation.^{2,8} Certain medications may also contribute to the development of delirium, particularly anticholinergics.²

Up to one-third of delirium cases are preventable.⁹ Preventing, identifying, and reducing risk factors associated with the development of delirium is the most

effective strategy for reducing delirium rates and complications.²

Recognizing signs and symptoms

Nurses play a pivotal role in identifying patients with delirium. Because they provide around-the-clock bedside care, nurses may be the first to notice a change in a patient's baseline cognition.

However, nurses sometimes overlook subtle signs of delirium or attribute them to the aging process or other disorders such as dementia. In a 2015 study, Cruz and colleagues found delirium signs were missed in 67% of patients referred to palliative care.¹⁰ Therefore, it is critical for nurses to be knowledgeable about delirium signs and symptoms.

The clinical presentation of delirium varies among patients and can be classified as hyperactive, hypoactive, or mixed level of activity.² Patients with hyperactive delirium may display agitation, anxiety, restlessness, hallucinations, delusions, and combative or uncooperative behaviors.¹¹ In contrast, patients with hypoactive delirium exhibit lethargy, increased daytime sleeping or napping, withdrawal, poor oral intake, and even depression.¹¹

Hypoactive delirium is more common than hyperactive delirium, but it is often overlooked because signs are more subtle and patients

exhibit fewer behavioral disturbances.¹² Patients with mixed levels of activity exhibit fluctuations of behaviors of both hyperactive and hypoactive subtypes.² In addition, some patients may experience autonomic manifestations, such as facial flushing, hypertension, tachycardia, diaphoresis, and mydriasis.² Nurses should assess for these signs of delirium during each patient assessment.

Clinical screening tools

Nurses and clinicians can use evidence-based screening tools to identify delirium in various health-care settings. Clinicians in nonpsychiatric settings can use the Confusion Assessment Method (CAM), a tool that consists of a screening instrument and a diagnostic algorithm to help clinicians identify delirium in less than 5 minutes.¹³ A modified version of the CAM, the Confusion Assessment Method for the Intensive Care Unit can be used in the ICU or ED to assess nonverbal and mechanically ventilated patients.^{14,15} In addition, ICU nurses can complete the Intensive Care Delirium Screening Checklist, which identifies delirium signs observed over 8 to 12 hours and can be completed in less than 5 minutes.¹⁴

The Mini-Mental State Exam is not a confirmatory test of delirium, but it can be used in conjunction with other screening tools to detect cognitive impairment and difficulties in the areas of attention, orientation, and memory commonly seen in patients with delirium. It can be completed within 10 minutes.¹⁶

Determining etiology

To determine the source of a patient's delirium, clinicians must assess baseline cognition, obtain a

comprehensive health history including medication reconciliation, perform a thorough physical assessment, and review medical records. Obtaining baseline lab study results can also help identify an underlying medical cause. For example, urinalysis, complete blood cell count, comprehensive metabolic panel, or thyroid panel can help identify or rule out infections, blood disorders, hormone abnormalities,

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or metabolic disorders. When the underlying acute illness responsible for delirium is identified, specific therapy directed toward that disorder is the most effective means of reversing the delirium.¹⁷

Nonpharmacologic management

Evidence-based nonpharmacologic interventions should be tailored to the patient's needs and care setting. Some of those interventions include:

- providing a safe and supportive environment. For example, prevent excessive noise, provide consistent caregivers and a consistent care routine, use simple phrases, provide feeding assistance, encourage early mobilization, decrease or avoid medication administration after the patient's bedtime, eliminate unnecessary stimuli, and provide supportive aids such as glasses and hearing aids.
- frequent reorientation to environment. For example, providing familiar pictures, a favorite throw blanket, a clock, a calendar, and a chart of scheduled activities can help reorient the patient to time and place.

- providing adequate fluid and food intake.
- avoiding use of physical restraints, which are indicated only if medically necessary and all other alternatives have failed.¹⁸ Restraints can worsen confusion and cause additional medical problems, such as pressure injuries and other complications of immobility.¹⁹ Follow facility policy and procedure on restraint use.

- monitoring bowel and bladder patterns. Urinary retention and constipation are risk factors for delirium. Avoid placing indwelling urinary catheters if possible to reduce infection risks, and remove indwelling devices as soon as they are no longer needed.
- closely monitoring vital signs. Delirium may cause hypertension and tachycardia; hypoxemia can contribute to delirium.
- monitoring lab results to identify underlying etiologies of delirium such as infections, vitamin deficiency, electrolyte imbalances, hypoglycemia, hypothyroidism, liver and renal failure, and other possible contributing factors.
- assessing patient response to drug therapy. Medications that can trigger delirium and any nonessential medication should be discontinued as prescribed.
- routinely assessing for and managing pain
- providing sleep hygiene measures, such as avoiding caffeine and heavy meals in the evening¹⁷
- considering music or pet therapy to help decrease agitation and aggression

- educating family members on delirium risk factors, causes of delirium, and nonpharmacologic interventions to prevent or reduce delirium. Examples include helping orient the patient throughout the day, staying with the patient as much as possible, bringing familiar items from home including supportive aids, bringing all current medications from home (including over-the-counter medications), and notifying nurses or physicians of observed cognitive changes. Family members' observations are also vital in determining if the patient's baseline cognition has changed.
- implementing evidence-based guidelines or programs. Examples include a recent guideline from the National Institute for Health and Care Excellence on delirium prevention, diagnosis, and management; the Society of Critical Care Medicine's 2018 Clinical Practice Guidelines for the Prevention and Management of Pain, Agitation/Sedation, Delirium, Immobility, and Sleep Disruption in Adult Patients in the ICU; and the Hospital Elder Life Program.

Pharmacotherapy

No FDA-approved medications are available for the prevention and treatment of delirium. Pharmacologic treatment of delirium should be initiated only if nonpharmacologic interventions have failed, precipitating risk factors have been mitigated, and the patient poses a danger to self or others.³ In such cases, first-generation or second-generation antipsychotics may be prescribed.³ Such medications do not mitigate the underlying cause of delirium and should be used only for a short duration.³ Prolonged use can exacerbate delirium and may increase risk of stroke and death in older adults.⁷

The commonly used agent for the treatment of delirium is haloperidol.²⁰ Haloperidol has a boxed warning concerning the risk of death in older adults with dementia-related psychosis. Recommended for treating delirium by the Society of Critical Care Medicine and National Institute for Health and Care Excellence, haloperidol is a high-potency, first-generation antipsychotic with minimal anticholinergic effects, making it a preferred antipsychotic.^{5,21,22} Haloperidol can be administered orally, I.V., or I.M.²³ The drug's onset of action is 5 to 20 minutes after I.V. administration; the I.M. or oral route may take longer.

I.V. haloperidol has been associated with clinically significant QT prolongation requiring additional precautions with its use.¹⁷ When administering I.V. haloperidol, be mindful of its high risk of QT prolongation and torsades de pointes.²³ A baseline ECG obtained before and after administering haloperidol can help identify adverse cardiac reactions. Prescribers should avoid or minimize other medications that can prolong the QT interval or cause torsades de pointes.

Olanzapine, risperidone, and quetiapine are second-generation atypical antipsychotics that are also used to manage delirium symptoms.⁵ Atypical antipsychotics pose less risk for extrapyramidal symptoms (EPS), tardive dyskinesia, and elevated prolactin levels, compared with first-generation antipsychotics such as haloperidol. Unlike haloperidol, atypical antipsychotics are not available I.V.

- Quetiapine is least likely to produce or exacerbate EPS and is only available in tablet form.²¹
- Olanzapine can be administered I.M. and is indicated when the oral route is unavailable and haloperidol is contraindicated.²¹

- Risperidone is available in long-acting injectable form. Long-acting injectable antipsychotics are not recommended for the treatment of delirium and may worsen delirium symptoms.²¹

Benzodiazepines should be limited to alcohol withdrawal delirium.²⁴ Benzodiazepines have the potential to cause falls and worsen cognitive status.² These medications can also mask the clinical presentation or worsen the patient's delirium and confusion.³

The acetylcholinesterase inhibitor donepezil, approved for the treatment of Alzheimer disease, is another potential treatment, but findings on its effectiveness are inconclusive.²⁵

Delirium is a medical emergency. To intervene appropriately and prevent complications, nurses must know delirium risk factors, frequently assess patients for signs and symptoms of delirium, and advocate for treatment to improve patient-care outcomes and quality of life. ■

REFERENCES

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. Washington, DC: American Psychiatric Association; 2013.
2. Townsend MC. *Psychiatric Mental Health Nursing: Concepts of Care in Evidence-Based Practice*. 8th ed. Philadelphia, PA: F.A. Davis Company; 2015.
3. Arbabi M, Shahhatami F, Mojtahedzadeh M, Mohammadi M, Ghaeli P. Adaptation of the pharmacological management of delirium in ICU patients in Iran: introduction and definition. *Iran J Psychiatry*. 2018;13(1):65-79.
4. Kukreja D, Günther U, Popp J. Delirium in the elderly: current problems with increasing geriatric age. *Indian J Med Res*. 2015;142(6):655-662.
5. Society of Critical Care Medicine. PADIS Guidelines. 2018. www.sccm.org/ICULiberation/Guidelines.
6. Schenning KJ, Deiner SG. Postoperative delirium in the geriatric patient. *Anesthesiol Clin*. 2015;33(3):505-516.
7. Ospina JP, King F, Madva E, Celano CM. Epidemiology, mechanisms, diagnosis, and treatment of delirium: a narrative review. *Clin Med Ther*. 2018;1(1):3.

8. Grover S, Avasthi A. Clinical practice guidelines for management of delirium in elderly. *Indian J Psychiatry*. 2018;60(suppl 3):S329-S340.
9. Johansson YA, Bergh I, Ericsson I, Sarenmalm EK. Delirium in older hospitalized patients—signs and actions: a retrospective patient record review. *BMC Geriatr*. 2018;18(1):43.
10. de la Cruz M, Fan J, Yennu S, et al. The frequency of missed delirium in patients referred to palliative care in a comprehensive cancer center. *Support Care Cancer*. 2015;23(8):2427-2433.
11. Harrington CJ, Vardi K. Delirium: presentation, epidemiology, and diagnostic evaluation (part 1). *RI Med J (2013)*. 2014;97(6):18-23.
12. Albrecht JS, Marcantonio ER, Roffey DM, et al. Stability of postoperative delirium psychomotor subtypes in individuals with hip fracture. *J Am Geriatr Soc*. 2015;63(5):970-976.
13. Inouye SK, van Dyck CH, Alessi CA, Balkin S, Siegel AP, Horwitz RI. Clarifying confusion: the confusion assessment method. A new method for detection of delirium. *Ann Intern Med*. 1990;113(12):941-948.
14. Ely EW, Inouye SK, Bernard GR, et al. Delirium in mechanically ventilated patients: validity and reliability of the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU). *JAMA*. 2001;286(21):2703-2710.
15. LaMantia MA, Messina FC, Hobgood CD, Miller DK. Screening for delirium in the emergency department: a systematic review. *Ann Emerg Med*. 2014;63(5):551-560.e2.
16. Mitchell AJ, Shukla D, Ajumal HA, Stubbs B, Tahir TA. The Mini-Mental State Examination as a diagnostic and screening test for delirium: systematic review and meta-analysis. *Gen Hosp Psychiatry*. 2014;36(6):627-633.
17. Francis J. Delirium and acute confusional states: prevention, treatment, and prognosis. UpToDate. 2019. www.uptodate.com.
18. Fletcher KR. Symptoms and syndromes. In: Hart EX, ed. *Advanced Practice Nursing in the Care of Older Adults*. Philadelphia, PA: F.A. Davis Company; 2014.
19. Rosen T, Connors S, Clark S, et al. Assessment and management of delirium in older adults in the emergency department: literature review to inform development of a novel clinical protocol. *Adv Emerg Nurs J*. 2015;37(3):183-196.
20. Kalish VB, Gillham JE, Unwin BK. Delirium in older persons: evaluation and management. *Am Fam Physician*. 2014;90(3):150-158.
21. National Institute for Health and Care Excellence. Delirium: prevention, diagnosis and management. 2019. www.nice.org.uk/guidance/cg103/resources/2018-surveillance-of-delirium-prevention-diagnosis-and-management-nice-guideline-cg103-6594316237/chapter/Surveillance-decision?tab=evidence.
22. Woo TM. *Pharmacotherapeutics for Advanced Practice Nurse Prescribers*. Philadelphia, PA: F.A. Davis Company; 2016.
23. U.S. Food and Drug Administration. Haldol. 2017. www.accessdata.fda.gov/drugsatfda_docs/label/2017/015923s092lbl.pdf.
24. Sachdeva A, Choudhary M, Chandra M. Alcohol withdrawal syndrome: benzodiazepines and beyond. *J Clin Diagn Res*. 2015;9(9):VE01-VE07.
25. Robinson L, Tang E, Taylor JP. Dementia: timely diagnosis and early intervention. *BMJ*. 2015;350:h3029.

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