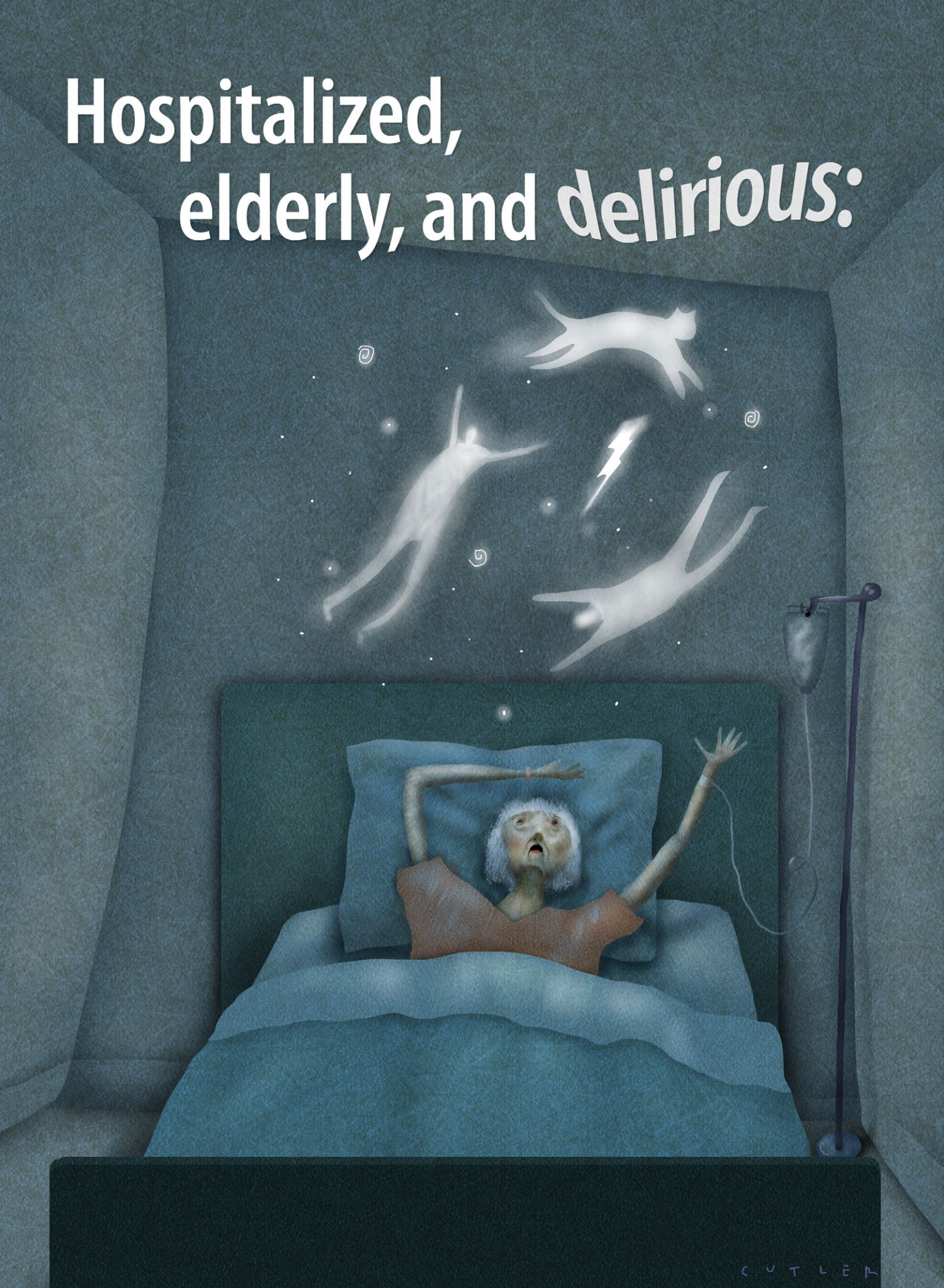
Hospitalized, elderly, and delirious:



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Dr. Liptzin: Making the distinction between dementia and delirium

What should you do for these patients?

Delirium in older hospitalized patients is common and serious. Perform a careful workup and provide support and appropriate management of underlying disease.

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Delirium is a common condition in hospitalized older patients. Often, a report of a "change in mental status" is the reason geriatric patients are sent to the emergency room for evaluation, although delirium also can develop after admission.

Delirium is a marker of underlying medical illness that needs careful workup and treatment. The condition can be iatrogenic, resulting from prescribed medication or a surgical procedure; most often, it is the consequence of multiple factors. Delirium can be expensive, because it increases hospital length of stay and overall costs—particularly if the patient is discharged to a nursing facility, not to home. Patients with delirium are at higher risk of death.

Delirium often goes unrecognized by physicians and nursing staff, and is not documented in medical records. Educating the medical staff on the identification and management of delirium is a key role for consulting psychiatrists.

CASE REPORT

Confused and agitated

Ms. T, a 93-year-old resident of an assisted living facility with a history of three cerebral vascular accidents, atrial fibrillation, hypertension, multiple deep venous thromboses, blindness in her right eye, and deafness in her right ear without a hearing aid, is brought to the hospital after a syncopal episode lasting 10 minutes that was followed by slurred speech, confusion, and transient hypotension. Her dentist recently started her on azithromycin.

In the emergency room, Ms. T's elevated blood pressure is managed with hydralazine and diltiazem. A CT scan of the head rules out hemorrhagic stroke. Complete blood count and tests of electrolytes, vitamin B12, and thyroid-stimulating hormone are within normal limits; urinalysis is negative for urinary tract infection.

Ms. T is noted to be in and out of sleep, with some confusion. She is maintained without oral food or fluids because of concerns about her ability to swallow. After 5 or 6 hours in the ER, Ms. T is transferred to a medical unit, where she becomes agitated and paranoid, with the delusion that her daughter is an impostor. She yells, is combative, and refuses medication.

continued

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Delirium

Clinical Point

Delirium can be difficult to diagnose in patients with dementia; obtain collateral information from a family member or caretaker

Box

DSM-5 diagnostic criteria for delirium

A. Disturbance in attention (ie, reduced ability to direct, focus, sustain, and shift attention) and awareness (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 (eg, memory deficit, disorientation, language, visuospatial ability, or perception)
D. The disturbances in Criteria A and C are not better explained by another preexisting, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma
F. There is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal (ie, due to a drug of abuse or to a medication), or exposure to a toxin, or is due to multiple etiologies

Source: Reference 1

Her confusion and behaviors become worse at night: She pulls out her IV line and telemetry leads. Blood pressure remains elevated, for which she receives additional doses of hydralazine.

For behavioral management, the medical team orders a one-time IM dose of haloperidol and starts her on risperidone, 0.5 mg every 4 hours as needed, which Ms. T refuses to take. She is incontinent and has foul-smelling urine.

Ms. T's family is shocked at her condition; nursing staff is frustrated. With her worsening paranoia, delusions, and combative behaviors towards the nursing staff, psychiatry is consulted.

How to recognize and diagnose

The ***Box*** lists DSM-5 criteria for delirium.[1] The key feature is a disturbance in attention—what was referred to in DSM-IV-TR as "disturbance in consciousness." That finding contrasts with what is seen in dementia, with its hallmark memory impairment and chronic deterioration.

In a hospital setting, the question is often asked: Does this patient have dementia or delirium? In many cases, the answer is both, because preexisting cognitive impairment is an important risk factor for delirium.

In addition to the standard clinical interview, several screening instruments or delirium rating scales have been developed. The most commonly used (***Table 1, page 16***) is the Confusion Assessment Method developed by Inouye and colleagues.[2]

Subtypes of delirium have been described, largely based on motor activity. Patients can present as hyperactive, hypoactive, mixed, or neither.[3] Psychiatrists are more likely to be consulted regarding patients with hyperactive delirium, because they are the ones who scream, pull out their IV line, hallucinate, and are delusional, insisting they "have to go home"—such as the patient described in the case above.

Patients with hypoactive delirium often, on the other hand, are difficult to recognize; they present with lethargy, drowsiness, apathy, and confusion. They become withdrawn and answer slowly[4]; often, psychiatry is consulted to assess them for depression.

Delirium can be difficult to diagnose in patients with underlying dementia, who are not able to provide information. In such cases, obtaining collateral information from a family member or primary caretaker is crucial. Knowing the patient's baseline helps to determine whether there has been an acute change in mental status.

CASE CONTINUED

Acute mental status changes

Ms. T's daughter reports that her mother has not been in this condition before. At baseline, Ms. T has had memory problems but no paranoia, delusions, or agitated behaviors. Her daughter also reports that Ms. T has visual and hearing impairments and is not wearing her hearing aid.

The acute change in mental status and the perceptual disturbances indicate that Ms. T has delirium, not dementia.

Who is likely to develop delirium?

Risk factors for delirium (***Table 2, page 17***) include preexisting cognitive impairment, older age, vision and hearing impairment, use of psychoactive drugs, severe illness,

continued on page 16

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continued from page 12

Delirium

Table 1

Screening for delirium: The confusion assessment method

Criteria	Evidence (see "Note")
1. Acute onset	Is there evidence of an acute change in mental status from baseline?
2. Fluctuating course	Did the abnormal behavior fluctuate during the day?
3. Inattentiveness	Did the patient have difficulty focusing or paying attention?
Plus	
4. Disorganized thinking	Was the patient's thinking disorganized or incoherent?
5. Altered consciousness	Would you rate the patient's level of consciousness as any of the following: - Vigilant - Lethargic (drowsy, easily aroused) - Stupor (difficult to arouse) - Coma (unarousable)

Note: "Yes" to Questions 1, 2, *and* 3, plus "Yes" to Question 4 or 5, suggests a diagnosis of delirium

Clinical Point

Symptoms fluctuate over the course of a day; they can be missed if a provider sees the patient only while he (she) is clearer

azotemia and dehydration, a metabolic abnormality, and infection. Male sex also seems to be a risk factor, perhaps because men are more likely to abuse alcohol before admission.

Many patients become delirious after starting a new medication. An experienced geriatrician teaches that the main causes of delirium are "drugs, drugs, drugs, infections, and everything else" (Kenneth Rockwood, MD, personal communication, 2012). At admission, urinary tract infection and pneumonia are common causes of delirium, especially in geriatric patients.

What is the clinical course?

The clinical course varies widely. Delirium often is the reason that a patient is brought to the hospital, presenting with the condition at admission or early in hospitalization. The highest incidence among surgical patients appears to be on the third postoperative day—in some cases because of alcohol or drug withdrawal.

As noted in the DSM-5 criteria, delirium often comes on acutely, over hours or days. Symptoms can persist for weeks after initial onset of episodes of delirium.[5] Symptoms fluctuate over the course of the day; at times, they can be missed if a provider sees the patient only while she (he) is clearer and doesn't review nursing notes from other shifts.

How does delirium affect outcome?

Delirium has been shown to be associated with prolonged hospital stay (21 days, compared with 11 days in the absence of delirium), functional decline during hospitalization, and increased admission to long-term care (36% compared with 13%).[6] In a study by O'Keefe and Lavan,[6] delirious patients were more likely to sustain falls and to develop urinary incontinence, pressure sores, and other complications during hospitalization.

Older patients with delirium superimposed on dementia had a more than twofold increased risk of mortality compared with patients with dementia alone or with neither dementia nor delirium.[7] Rockwood found that an episode of delirium was associated with a much higher rate of subsequent dementia.[8]

Think of an acute medical illness as a "stress test" for the brain, such that, if the patient develops delirium, it suggests an underlying brain disease that was not evident before the acute episode. After hip fracture, for example, delirium was independently associated with poor functional recovery at 1 month[9] and at 2 years.[10]

Older patients admitted to a skilled nursing facility with delirium are more likely to experience one or more complications (73% compared with 41%).[11] In the study by Marcantonio and colleagues, patients with delirium were more than twice as likely to be hospitalized again within 30 days (30% and

13%), and less than half as likely to be discharged to the community (30% and 73%). ***Table 3*** summarizes the impact of delirium on outcomes.

Appropriate management steps

Identifying and treating underlying medical illness is the definitive treatment for delirium; in a geriatric patient with multiple medical comorbidities the pathogenesis often is multifactorial or a definitive precipitant cannot always be identified.[12]

Managing a patient with delirium includes both non-pharmacotherapeutic interventions, which should be considered first-line, and pharmacotherapeutic interventions. Non-pharmacotherapeutic interventions include, but are not limited to:

- support and close observation by nursing staff
- placing a clock or calendar in the room
- frequent reorientation and reminders
- placing familiar possessions in the room
- putting the patient in an isolated room with a window
- regulating the sleep-wake cycle.[4]

Pharmacotherapeutic intervention in delirium should be used for behavioral symptoms, but only for the minimum duration necessary[4] and preferably oral or IV. No drugs are FDA-approved for delirium, which means that use of any agent is off-label.[13]

Antipsychotics are the mainstay of pharmacotherapy for delirium in most settings. The use of antipsychotics relates to the dopamine excess-acetylcholine deficiency hypothesis of delirium pathophysiology.[12] Haloperidol remains the first-line agent because it is available in multiple dosages and can be given by various routes. IV haloperidol appears to carry less risk of extrapyramidal symptoms than oral haloperidol does but, as with all antipsychotics, its use warrants monitoring for QTc prolongation.[12]

Studies have not shown that atypical antipsychotics are superior to typical antipsychotics for delirium. Multiple studies have shown that atypicals are as efficacious as haloperidol.

Benzodiazepines are the treatment of choice for delirium caused by alcohol withdrawal. A Cochrane review found no evidence that benzodiazepines were helpful in treating delirium unrelated to alcohol withdrawal.[14] In some studies, benzodiazepines were associated with an increased risk of delirium, especially in patients in the intensive care unit.[15]

More recently, cholinesterase inhibitors have been used to treat delirium. The reasoning behind their use is the hypothesis of a central cholinergic deficiency in delirium.[12] Regrettably, there have been few well-conducted studies of these agents in delirium, and a Cochrane review found no significant benefit for cholinesterase inhibitors.[16] With the same hypothesis in mind, anticholinergic medications in patients with delirium should be avoided because these agents could exacerbate delirium by further decreasing the acetylcholine level.

Because delirium is common in the hospitalized population (especially older patients), a number of studies have examined strategies to prevent or reduce its development. Inouye and colleagues conducted a controlled clinical trial, in which they intervened to reduce six risk factors for delirium: cognitive impairment, sleep deprivation, immobility, visual and hearing impairment, and dehydration in hospitalized geriatric patients. The number and duration of events of delirium were significantly lower in the intervention group.[17]

Brummel et al reported that reducing modifiable risk factors in intensive care unit

Table 2

Risk factors for delirium

Preexisting cognitive impairment
Older age
Psychoactive drug use (including alcohol)
Severe illness
Azotemia or dehydration
Metabolic abnormality

Table 3

Delirium can affect outcome in hospitalized patients

Higher risk of iatrogenic complications
Longer hospital stay and higher likelihood of readmission
Poorer long-term prognosis, including higher mortality

Clinical Point

Haloperidol remains a first-line agent; IV haloperidol seems to carry less risk of extrapyramidal symptoms than oral haloperidol

Delirium

Clinical Point

Anticholinergic medications should be avoided in patients with delirium because they can exacerbate symptoms

Related Resources

- Treating delirium: a quick reference guide. Arlington, VA: American Psychiatric Association. http://psychiatryonline.org/content.aspx?bookid=28&sectionid=1662986.
- Cook IA. Guideline watch: practice guidelines for the treatment of patients with delirium. http://psychiatryonline.org/content.aspx?bookid=28&sectionid=1681952.
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Drug Brand Names

Azithromycin • Zithromax
Diltiazem • Cardizem
Haloperidol • Haldol
Hydralazine • Apresoline
Risperidone • Risperdal

patients—including sedation management, minimizing deliriogenic medications (anticholinergics, antihistamines), minimizing sleep disruption, and encouraging early mobility—could prevent or reduce the incidence of delirium.[15]

CASE CONCLUDED

Return to baseline

Ms. T's medications are minimized or discontinued, including azithromycin, based on case reports in the literature. She is stabilized hemodynamically.

Clinicians educate Ms. T's family about delirium. To address Ms. T's aggressive and paranoid behaviors, clinicians request that a family member is present to reassure Ms. T. She is continued on low-dose haloperidol. The family also is asked to bring Ms. T's hearing aid and eyeglasses.

MRI is performed after Ms. T's behavior is under control. The scan is negative for a new stroke.

Repeat blood tests the following day show an elevated white blood cell count; urinalysis is positive for a urinary tract infection. Ms. T is started on antibiotics. Subsequent urine culture shows no bacterial growth; the antibiotics are stopped after 3 days.

Ms. T slowly improves. According to her family, she is back at baseline in 3 or 4 days.

This case illustrates the complexity of trying to identify the precise cause of delirium among the many that could be involved. Often, no single cause can be found.[18]

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Bottom Line

Delirium is a common and potentially life-threatening condition in hospitalized geriatric patients. General hospital psychiatrists should know how to recognize and treat the condition in collaboration with their medical colleagues.