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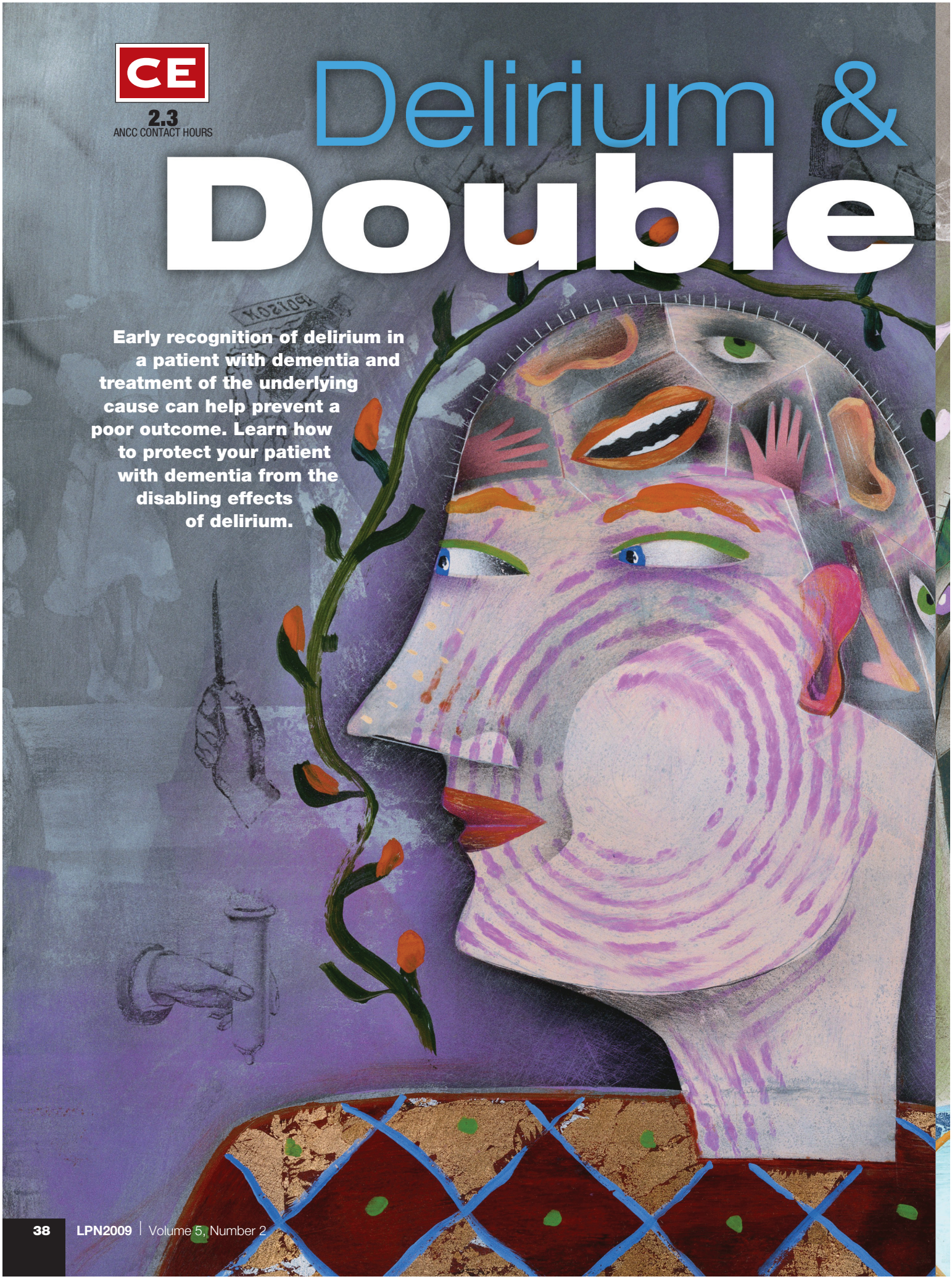
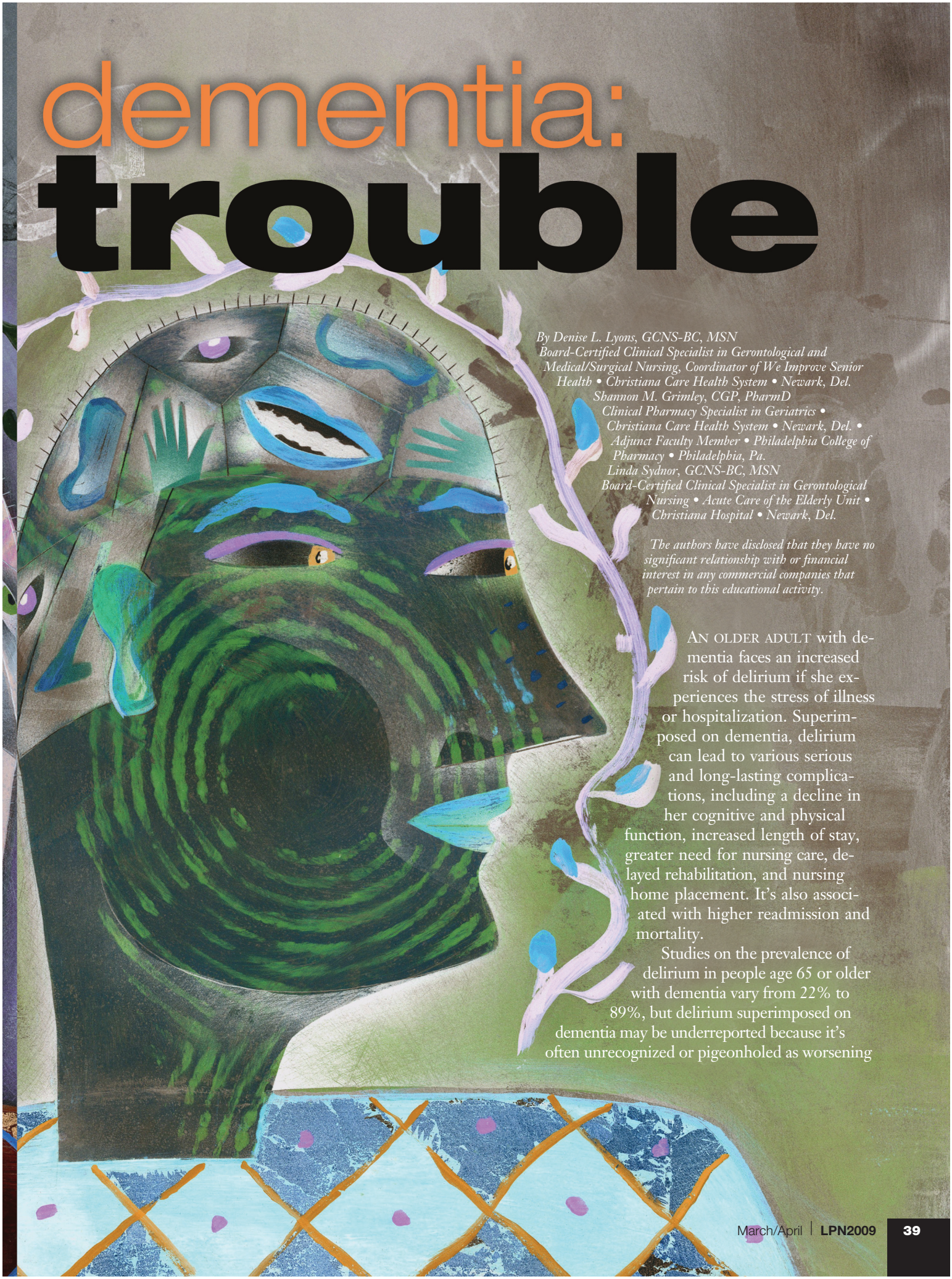
Delirium & Double

Early recognition of delirium in a patient with dementia and treatment of the underlying cause can help prevent a poor outcome. Learn how to protect your patient with dementia from the disabling effects of delirium.



dementia: trouble



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AN OLDER ADULT with dementia faces an increased risk of delirium if she experiences the stress of illness or hospitalization. Superimposed on dementia, delirium can lead to various serious and long-lasting complications, including a decline in her cognitive and physical function, increased length of stay, greater need for nursing care, delayed rehabilitation, and nursing home placement. It's also associated with higher readmission and mortality.

Studies on the prevalence of delirium in people age 65 or older with dementia vary from 22% to 89%, but delirium superimposed on dementia may be underreported because it's often unrecognized or pigeonholed as worsening

How delirium and dementia differ

	Delirium	Dementia
Onset	Acute	Insidious
Course	Fluctuating, with lucid intervals; worse at night	Slowly progressive
Duration	Hours to weeks	Months to years
Sleep/wake cycle	Always disrupted	Sleep fragmented
Illness or drug toxicity	Either or both present	Often absent, especially in Alzheimer's disease
Level of consciousness	Disturbed. Patient is less clearly aware of the environment and less able to focus, sustain, or shift attention.	Usually normal until late in course of illness
Behavior	Activity often abnormally decreased (somnolence) or increased (agitation, hypervigilance)	Normal to slow; behavior may be inappropriate
Speech	May be hesitant, slow, or rapid; incoherent	Difficulty finding words; aphasia
Mood	Fluctuating, labile, from fearful or irritable to normal or depressed	Often flat, depressed
Thought processes	Disorganized; may be incoherent	Impoverished; speech gives little information
Thought content	Delusions common; often transient	Delusions may occur
Perceptions	Illusions, hallucinations (usually visual)	Hallucinations may occur
Judgment	Impaired, often to a varying degree	Increasingly impaired over the course of illness
Orientation	Usually disoriented, especially for time. A known place may seem unfamiliar.	Fairly well maintained, but becomes impaired in the later stages of illness
Attention	Fluctuates. Patient is easily distracted and unable to concentrate on tasks.	Usually unaffected until late in illness
Memory	Immediate and recent memory impaired	Recent memory and new learning especially impaired

Source: Bickley LS. *Bates Guide to Physical Examination and History Taking*, Lippincott Williams & Wilkins; 2007.

dementia. A literature review revealed that up to 25% of older adults are hospitalized with delirium and up to 56% develop delirium while hospitalized.

In this article, we'll explain how to care for a patient with dementia who develops delirium and discuss what you can do to reduce risks. To illustrate, let's consider a hypothetical case study.

A change in behavior

Eugenia Baker, 88, is admitted to a medical unit from home with a diagnosis of acute change in mental status. Her medical history includes dementia, breast cancer, and ambulatory dysfunction. She lives with her daughter Carol and son-in-law Phil.

At admission, Carol tells you that Mrs. Baker is typically oriented to person and place. Although confused at times, she's generally cooperative. Her appetite over the past week has been poor. About 2 days ago, she became increasingly confused and agitated. Carol describes occasional episodes of hitting and biting and says her mother started seeing things that weren't there.

Once settled in her room, Mrs. Baker is alert but disoriented, agitated, and occasionally combative. When she agrees to let you assess her, she tells you she has pain in her abdomen and her rectum. You ask about Mrs. Baker's bowel routine. Carol isn't sure when her mother last had a bowel movement.

Mrs. Baker's admitting orders include a chest X-ray; ECG; complete blood cell count; basic metabolic panel; vitamin B_{12}, folate, and thyroid-stimulating hormone levels; and urinalysis. When you inform the healthcare provider of her bowel history and abdominal pain, he also orders a plain X-ray of the abdomen. Because Mrs. Baker makes repeated attempts to climb out of bed, the nurses place her in a reclining chair next to the nurses' station so they can watch her closely.

What's the difference?

Mrs. Baker's acute change in mental status may indicate delirium superimposed on dementia. Healthcare professionals have difficulty distinguishing the two, but the differences are very distinct (see *How delirium and dementia differ*).

- *Dementia* is chronic. It develops gradually and usually isn't reversible. Early in the course of dementia, short-term memory deficits are common. Over months to years, the patient experiences a chronic, steady decline in cognition, use of language, and functional abilities.
- *Delirium* is an acute change in mental status, typically due to a reversible medical condition. Hallmarks include acute onset, a fluctuating course, change in cognition, and decreased attention. Treating the underlying cause usually reverses delirium.

Suspect delirium whenever a patient with dementia has an acute change in cognitive status, behavior, or physical functioning. As in Mrs. Baker's case, a family member might tell you she's noticed a big change in a short time.

Promote prevention

Even in a patient with dementia, delirium may be preventable or quickly reversed. Early recognition of an acute change in her mental status is critical, so frequently assess for red flags such as inattention or unorganized thoughts to improve the quality of care and reduce complications. Besides assessing mental status, manage your patient's environment by minimizing noise, staff changes, and room changes and immediately respond to suspected physiologic causes of delirium—most commonly, medications, infection, respiratory tract disorders, and fluid or electrolyte imbalances (see *Common causes of D-E-L-I-R-I-U-M*).

Common causes of D-E-L-I-R-I-U-M

Drugs
- prescribed, over-the-counter, and recreational
- alcohol withdrawal or intoxication
- polypharmacy (more than four medications)
- effects of anticholinergic drugs, psychoactive drugs (anxiolytics, sedatives, hypnotics, antipsychotics, antidepressants), opioids, steroids
- drug toxicity, drug withdrawal

Elimination
- urinary retention
- fecal impaction or diarrhea

Liver and other organs
- liver failure, hepatitis, cirrhosis
- heart failure, myocardial infarction, hypotension, dysrhythmia
- kidney dialysis, renal insufficiency
- gastrointestinal bleeding, inflammation, infarction, infection
- stroke, cerebral edema, subdural hematoma, head injury, hydrocephalus, encephalopathy, meningitis
- bone marrow disease (anemia)

Infection
- urinary tract or respiratory infection
- sepsis

Respiratory
- hypoxia, pneumonia, pulmonary embolism, chronic obstructive pulmonary disease, asthma
- abnormal arterial blood gases, carbon dioxide, retention, hyperventilation

Injury
- trauma, pain
- stress

Unfamiliar environment
- restraint use, underlying dementia
- hospitalization or change in residence

Metabolic
- fluid/electrolyte disturbance
- dehydration/volume depletion
- abnormal blood glucose level
- elevated blood urea nitrogen or creatinine level
- vitamin B_{12}/folate deficiency
- hypothyroidism, hyperthyroidism
- fever, hypothermia

Adapted with permission from Christiana Care Health System Delirium Care Management Guideline.

If delirium develops, consider it a medical emergency and immediately investigate the cause.

Finding the cause

Dementia impairs a patient's ability to communicate, so use various strategies and information sources to gain insight into her acute mental changes. These include observation of the patient's behavior, physical assessment, diagnostic study results, patient history from family members, and the medical record. Zero in on the following factors:

- vital signs
- SpO_2 level
- lung sounds

Medications that can cause problems

Many drugs can cause or exacerbate delirium. Keep in mind that the following list of examples isn't inclusive and that any new medication added to the patient's regimen can also cause trouble.

- Alzheimer's medications
- opioid analgesics
- nonopioid analgesics
- all anesthetics
- antianxiety/hypnotic agents, sedatives
- antiseizure drugs
- antidepressants
- antihistamines
- antihypertensives
- antimicrobials
- anti-Parkinson's medications
- antispasmodics (urinary)
- cardiac medications
- glucocorticoids
- muscle relaxants

Adapted with permission from Christiana Care Health System Delirium Care Management Guideline.

- pain level
- blood glucose level
- urinalysis
- bladder scan to assess for urine retention
- record of bowel movements
- digital rectal exam for fecal impaction
- fluid intake and output
- presence of medical devices, such as a venous access device or indwelling urinary catheter
- current or recent use of medications with psychoactive effects
- new medications or recent dosage changes to current medications (see *Medications that can cause problems*).

Results of Mrs. Baker's urinalysis show white blood cells and nitrites, suggesting a urinary tract infection (UTI). The healthcare provider orders a urine culture and an I.V. antibiotic to be started after urine is obtained for culture.

The abdominal X-ray indicates a large amount of stool in Mrs. Baker's colon, so he also orders a digital rectal examination. Initial management of the fecal impaction includes disimpaction. Additional interventions include stool softeners as appropriate, increasing mobility, scheduled toileting, increasing fiber and fluids in the patient's diet, and avoiding constipating drugs.

Diagnosing delirium

Diagnosis of delirium must be based on careful bedside observation of key features. Two tools can help:

- *Confusion Assessment Method (CAM).* This standardized tool has a sensitivity rating of 94% to 100% and a specificity of 90% to 95%. It's available in long and short forms, as well as a version for nonverbal mechanically ventilated patients (called the CAM-ICU). Key features of the short form are acute onset and fluctuating course, inattention, disorganized thinking, and altered level of consciousness. Diagnosis of delirium by CAM requires the first two features plus at least one of the last two. These four features are considered to be best for distinguishing delirium from other types of cognitive impairment.
- *Neelon and Champagne Confusion Scale.* Based on a structured database derived from routine nursing assessments and interactions with patients, this tool evaluates ten items divided into three levels: level one is processing, level two is behavior, and level three is physiologic functioning or control. It has the advantage of detecting early stages of delirium and is sensitive to its fluctuations.

No matter which tool you use, the earlier delirium is detected and the underlying problem treated, the better the patient's prognosis.

Mrs. Baker's history, clinical condition, and diagnostic test results suggest delirium superimposed on dementia probably caused by her UTI and fecal impaction, two common risk factors for delirium in older adults (see *Who's at risk?).* Initiating treatment for these underlying causes are important first steps to reversing her delirium.

Medication management

Best practices for older adults support providing nursing care without physical or chemical restraints. In certain circumstances, however, therapy with certain psychotropic drugs may be considered if a patient with dementia and delirium has severe agitation or psychosis that interrupts essential therapies or creates a hazard to her or to others. The literature on treating delirium with medication is limited, but national guidelines support using antipsychotic medications. Haloperidol (Haldol) is often the drug of choice because it has few anticholinergic adverse reactions and few active metabolites and is relatively unlikely to cause sedation or hypotension.

Haloperidol is approved for oral and I.M. administration, but the lactate formulation is sometimes given via the I.V. route. Be aware that high doses and I.V. administration are associated with a higher risk of QT prolongation and torsades de pointes.

Who's at risk?

Predictable risk factors for developing delirium include:

- age older than 70
- history of dementia
- sleep deprivation
- hearing or visual impairment
- dehydration
- severe illness or fractures
- hospitalization
- recent surgery
- immobility
- previous episodes of delirium
- polypharmacy
- alcoholism
- multiple comorbidities.

Closely monitor your patient for dysrhythmias, especially if she has other QT-prolonging conditions (such as hyperkalemia or hypothyroidism) or an underlying cardiac condition or is taking other medication that prolongs the QT interval. Review the product insert, including the black-box warning, for more details.

Because newer atypical antipsychotics such as risperidone (Risperdal), quetiapine (Seroquel), and olanzapine (Zyprexa) may pose less risk of adverse reactions, they're sometimes ordered for patients with delirium. Their effectiveness in managing agitation in dementia, however, is uncertain. An important finding in studies from the *Journal of the American Medical Association* of dementia-related agitation is a slightly increased risk of cerebrovascular events and death with these atypical antipsychotics compared with placebo. The clinical implication is unclear, but your patient's healthcare provider may want to discuss risks versus benefits with the patient or her family.

Other drugs may be indicated depending on underlying or contributing conditions. For example, opioids may be prescribed if pain is an aggravating factor.

Except in certain situations (such as sedative-hypnotic or alcohol withdrawal), benzodiazepines should be avoided because older adults are especially sensitive to these drugs. In fact, benzodiazepines such as lorazepam (Ativan) or alprazolam (Xanax) may *increase* confusion and cause oversedation or disinhibition.

For 2 days after admission, Mrs. Baker has intermittent periods of lethargy, agitation, and combativeness. The healthcare provider adds quetiapine to her medication regimen, and the nurses provide supportive nonpharmacologic interventions to keep her safe.

Supportive care

Understanding and meeting the needs of a patient with dementia who develops delirium can be complex and challenging, but supportive care using nonpharmacologic methods is a basic intervention. Any change in the patient's routine or environment can be very disturbing to her, including admission to an acute care facility. The following interventions can help ease the stress of such unavoidable changes.

- Maintain the patient's routine as much as possible, especially eating, toileting, and personal hygiene routines.
- Have the same staff care for her as much as possible, so she becomes familiar with them.

The earlier delirium is detected and the underlying problem treated, the better the patient's prognosis.

- Create a more familiar environment by asking her family to bring in things from home she may find comforting, such as family pictures or a favorite blanket. Encourage the family to stay with her as much as possible.
- Identify and eliminate stressors from her environment. Turning down telephones, dimming the lights, and even moving the patient to a quieter area can help. TV can agitate some patients; try turning it off.
- Avoid the use of catheters, tubes, drains, or I.V. catheters as much as possible. If they must be used, try to camouflage or hide them to avoid upsetting the patient. Remove them as soon as they're no longer needed.
- Consider playing music if your patient is agitated. Musical elements such as vibration and pitch can stimulate different areas of the brain.
- Offer the patient short periods of diversion. Activities such as folding laundry, looking at magazines or picture albums, or any appropriate activity can help distract her.
- Communicate with her in a low, clear, calm voice and maintain eye contact.
- For safety, keep her bed at the lowest position and use bed or chair alarms to alert the staff if she wanders or falls.
- Assist her to the bathroom or bedside commode every 2 hours and as needed.
- Help her ambulate frequently to minimize her desire to climb out of bed.
- If she uses assistive devices such as eyeglasses or a hearing aid, make sure she's wearing them and that they work.

Be creative

Although physical restraints are a nonpharmacologic intervention, avoid using them. Research has shown that they don't control agitated behavior or keep patients safer. In fact, restraints can actually increase agitation and can cause physical and mental deterioration, social isolation, injuries, and even death.

If your patient is agitated, remain calm and look for creative ways to protect her without the use of restraints. For example, if she wanders, modify the environment so she can move about safely. Close doors

in rooms she shouldn't enter and, if possible, have a family or staff member walk with her. Trying to restrict the movement of a patient who wants to wander will only frustrate and disturb her more and may lead to an injury.

Back to baseline

After 4 days of pharmacologic and nonpharmacologic measures to manage delirium and treat her infection and constipation, Mrs. Baker is alert, responsive, and cooperative. She's no longer hallucinating, her appetite is good, and her bowel movements are normal. She denies rectal pain, and her urinalysis is negative. By recognizing her delirium, investigating the causes, and responding appropriately, you've kept her safe and helped her return to baseline mental status at discharge. **LPN**

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