



Dealing with Delirium

New research suggests that hospital delirium can be more than just a temporary inconvenience.

BY AMY PATUREL, M.S., M.P.H.

When Earle Helton, 82, of Ipswich, MA, had a stroke nearly four years ago, his family members didn't know what to expect. Would he remember his name? Would he be able to talk? Would he recognize them?

As it turned out, the repercussions from his stroke weren't nearly as scary as the delirium he developed in the hospital afterward. Delirium is a fluctuating state of alertness that can be accompanied by confusion. Sometimes, a person with delirium may be combative or unable to be calmed by hospital staff.

"My husband is a very intelligent man," explains Ginie Helton, his wife, also 82. "But within a few days of being in the hospital, he began hallucinating, singing strange songs, and creating elaborate escape scenarios—even climbing underneath the mattress frame trying to find a way out of the hospital. It got so bad the staff had to tie his hands to the bed."

Although the stroke caused some mild confusion—Earle was having trouble understanding questions and lost some of his vision, for example—it wasn't until after he was given an antiepileptic drug (AED) that the delirium seemed to set in.

Experts claim hospital delirium is a common and under-recognized problem, especially among elderly patients; those with multiple medical problems are at even higher risk. According to Angela Catic, M.D., instructor of medicine at Harvard Medical School and director of Inpatient Services and Geriatric Education at Beth Israel Deaconess Medical Center in Boston, MA, up to 80 percent of elderly patients hospitalized in the intensive care unit (ICU) develop delirium. And elderly patients who undergo surgery are at increased risk, with about 50 percent of such patients developing hospital delirium postoperatively.

"Until recently, we thought delirium was a temporary inconvenience resulting



in longer hospital stays and increased time on a ventilator," says Ola Selnes, Ph.D., professor of neurology at Johns Hopkins School of Medicine in Baltimore, MD, and member of the American Academy of Neurology (AAN). "But there's increasing evidence that an episode of delirium may not be quite as harmless as we thought."

One study published in the *New England Journal of Medicine* in 2012 suggests that delirium may result in long-term cognitive decline for some patients. Up to 46 percent of 225 cardiac surgery patients who were diagnosed with postoperative delirium were less likely to return to their previous level of function up to one year after surgery, according to the study.

DELIRIUM SIGNS AND SYMPTOMS

Despite the flood of new research, many doctors, nurses, and other healthcare providers still may not be able to recognize delirium. Sometimes, they may confuse milder forms of delirium with early dementia, depression, or even manic behavior, explains Dr. Selnes.

The sign that should alert healthcare providers and caregivers to the possibility of delirium is a rapid change in mental status, particularly trouble with attention and concentration.

"Most patients with delirium seem to have a fluctuating level of attention, so at one moment the person may be alert and aware, but minutes later he or she might be confused and disoriented," says Dr. Selnes. (See box, "Assessing Delirium.")

When Earle experienced delirium, he knew his name and where he lived. He even talked lucidly about one of his intellectual interests: quantum physics. "In some ways, his brain seemed intact," says his wife.

"The Confusion Assessment Method (CAM) is a starting point to identify delirium," says Jennifer Frontera, M.D., neurointensivist at the Cerebrovascular Institute at Cleveland Clinic Foundation in Cleveland, OH. (A neurointensivist is an intensive care unit physician who specializes in neurology.) "But doctors still need to know the patient's usual behavior and thinking," she adds. For example, if the person regularly played bridge before he came to the hospital but stopped being able to play after going home, that might indicate the presence of delirium.

One way to make sure delirium isn't overlooked is having a loved one by the bedside. In addition to helping reorient the patient, a caregiver can alert a healthcare provider if the patient seems confused.

"Earle has always been very particular



about brushing and flossing his teeth,” says Helton, “but he wasn’t doing either. I was there every day doing those things for him, and informed his nurses that something was amiss.” She also wrote notes on the room’s dry-erase board to alert staff to her husband’s needs and mental status.

CAUSES OF DELIRIUM

Delirium is both a diagnosis and a symptom. As a diagnosis, it doesn’t tell you the underlying cause of the problem, such as infection or low sodium, but it does indicate serious brain malfunction. As a symptom, delirium has a range of causes, from the lingering effects of anesthesia and postoperative pain to medication side effects and sleep disturbances. But experts agree the most important risk factor for delirium is advanced age.

“Chronological age by itself isn’t the issue, but the older a person is, the more likely he or she will have conditions such as diabetes, high blood pressure (hypertension), high blood cholesterol (hypercholesterolemia), and a previous stroke—all of which predispose a person to developing delirium,” says Dr. Selnes. Elderly patients are also more likely to have cognitive problems due to dementia, Alzheimer’s disease, and Parkinson’s disease, as well as sensory impairments (such as hearing or vision problems), which also increase the risk of developing delirium.

In addition, delirium can develop after surgery or as the result of trauma, seizures, organ failure, infection, even nutritional deficiencies or imbalances.

“When an elderly patient is taking multiple medications and has mild cognitive impairment, all it takes is something like a urinary tract infection to tip them over into delirium,” says Dr. Catic.

Having undertreated pain can put people at significant risk for delirium, but so can being on multiple medications.

“If a patient is on more than five

medications, that’s a red flag for delirium,” says Dr. Selnes. In fact, up to 40 percent of delirium is due in part to medication.

“If we notice a change in someone’s thinking and behavior and suspect delirium, one of the first things we do is review the patient’s medication list,” says Dr. Catic. “Almost any class of medicine, from sleeping agents and pain medication to antibiotics and diuretics, can cause a patient to develop delirium under the right circumstances.”

However, certain types of medications are more problematic than others. Drugs with sedative effects—including glycopyrrolate (Robinul), diphenhydramine (Benadryl), and dimenhydrinate (Dramamine)—are more likely to cause delirium than, say, a standard antibiotic.

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In Earle’s case, the cause was an AED given to some stroke patients to prevent seizures. His cognitive symptoms and behavior changes

were obvious almost immediately in his attempts to escape from the hospital. Once the drug was completely out of his system, his delirium resolved quickly. But for some people, delirium can take an extended time to resolve.

PREVENTING AND TREATING DELIRIUM

Postoperative delirium is common—so common that experts believe health-care providers should routinely assess patients’ cognitive function both before admission to the hospital and at regular intervals after surgery. That way, when an issue does arise, early treatment can help reorient the patient.

“Those with preexisting cognitive impairment should be examined more carefully, giving doctors an opportunity to review things like preoperative medications, electrolyte levels, and other issues that could make patients more prone to developing delirium,” says Dr. Selnes. Then treating delirium becomes a matter of identifying the cause. If a patient has kidney failure, for example, that needs to be treated. If an electrolyte imbalance is found, that needs to be corrected.

After medical issues are addressed, the same strategies used to prevent delirium are used to treat it: working to ensure patients maintain an appropriate sleep/wake cycle, minimizing disruptions during nighttime hours, and making sure patients have access to eyeglasses, hearing aids, and dentures to prevent disorientation.

“These common-sense approaches are often overlooked,” Dr. Catic notes. In fact, many ICU patients experience severe sleep deprivation because they are monitored every few hours, day and night.

Assessing Delirium

Some patients with delirium are highly functional. In addition, patients who become more withdrawn (hypoactive delirium) may be harder to identify than those who are agitated or manic (hyperactive delirium). For that reason, many healthcare providers use the Confusion Assessment Method (CAM), which identifies patients with delirium if they exhibit the following behaviors:

- ▶ Acute change in mental status or behavior
- ▶ Altered or fluctuating level of consciousness
- ▶ Inattention
- ▶ Disorganized thinking

“Imagine being sleep-deprived for a week and pumped full of benzodiazepines, which are essentially like alcohol. Anyone would be loopy and confused,” says Dr. Frontera. Even in patients who are not at special risk for delirium, she argues, it makes sense to create as normal an environment as possible. This includes getting patients up and out of bed as much as possible for some gentle exercise, such as walking.

Not only does exercise help reduce the risk of delirium, it also helps patients get out of the ICU more quickly. Plus, studies show that walking and other forms of exercise ease anxiety and depression and improve mental acuity.

“The more physical therapy patients have in the ICU, the better they will perform activities of daily living when they’re discharged from the hospital—and the better their long-term outcomes,” says Dr. Frontera. (See Resource Central, page 37, for more on recognizing and preventing delirium.)

Even though patients who have had delirium may recover, they are still at higher risk of developing cognitive impairment and dementia in the future. “That’s one of the challenging things about delirium,” says Dr. Catic. “We’re not good at predicting how long it will last. So we encourage families and caregivers to check in regularly with their physicians and geriatricians.” 

Symptoms at a Glance

It can be difficult to differentiate signs of delirium from dementia, depression, and medication side effects. However, patients who exhibit the following symptoms should be examined for delirium:

- ▶ Fluctuating alertness
- ▶ Inability to focus
- ▶ Confusion
- ▶ Agitation
- ▶ Disorganized thinking
- ▶ Extreme fatigue
- ▶ Poor judgment
- ▶ Apathy and social withdrawal
- ▶ Mania

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