Delirium: Improving Diagnosis and Treatment

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The 89-year-old woman had undergone hip replacement surgery two days before, had tubes in her arms and couldn't walk. But she blithely announced to her daughter that she was leaving the hospital immediately and started to get out of bed. Astounded, the daughter sought out her mother's physician and asked, "What's going on?"

Like many hospitalized older adults, the woman was experiencing delirium. According to the Practice Guideline for the Treatment of Patients with Delirium, published by the American Psychiatric Association (1999) and available at the APA Web site, as many as 51% of postoperative patients develop delirium (Tune, cited in Work Group on Delirium, 1999), and up to 80% of patients with terminal illnesses develop delirium near death (Massie et al., cited in Work Group on Delirium, 1999). Patients who have just had surgery - particularly cardiomyotomy, hip surgery or a transplant - and patients with burns, dialysis or central nervous system lesions are at increased risk for delirium. Delirium also develops in about 25% of hospitalized cancer patients (Stiefel and Holland, cited in Work Group on Delirium, 1999) and 30% to 40% of AIDS patients (Perry, cited in Work Group on Delirium, 1999). Among older hospitalized patients, delirium is particularly common, with prevalence ranging up to 40% (Lipowski, cited in Work Group on Delirium, 1999).

"There is already some compromised cognitive function in the elderly to begin with, so it doesn't take a lot for them to push over into a picture of delirium," John S. McIntyre, M.D., told Psychiatric Times. McIntyre is chair of the department of psychiatry at St. Mary's Hospital and clinical professor of psychiatry at the University of Rochester in New York and he is chair of the APA's Steering Committee on Practice Guidelines.

Despite the high prevalence of delirium, physicians and other health care professionals often miss the diagnosis, largely because of variations in delirium's presentation and the interface it represents between medicine and psychiatry.

"We tried to underline in this guideline the reality that delirium is very much underdiagnosed and underappreciated in medical/surgical units of general hospitals," McIntyre said. In consulting with primary care physicians, psychiatrists need to think about what they can do to increase recognition of the disorder, particularly during grand rounds and consultations on units, McIntyre added.

Clinical Features

The most common clinical features of delirium are the "clouding of consciousness, and the variability in terms of attention and being able to focus on tasks," McIntyre said. In addition to the disturbance of consciousness, another feature of delirium is cognition change that develops over a short period of time and tends to fluctuate.

Memory impairment, the guideline authors said, is most commonly evident in recent memory. Disorientation is usually manifested as disorientation to time or place. Other commonly associated features of delirium include disturbances of sleep, disturbances of psychomotor and disturbances of emotion. Depending on the etiology, delirium can be associated with a number of nonspecific neurological abnormalities, such as tremor, myoclonus, asterixis and muscle tone changes. Numerous risk factors have been identified for delirium. Among them are polypharmacy; underlying medical conditions including CNS, metabolic and cardiopulmonary disorders; and advanced age. "When patients are on a significant number of medications, that can contribute to delirium, as can the impact of the general medical condition," McIntyre said. He cited the example of a patient with congestive heart failure who had resultant decreased perfusion of oxygenated blood throughout the CNS and brain. Because of those health changes, the patient's risk of becoming delirious increased. "Conducting a careful medical evaluation that includes particular attention to a patient's level of oxygenation, possible occult infection (e.g., urinary tract infection) and the possible role of medications is an essential initial approach to the management of delirium in the elderly," the
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Guideline authors said. Medications with anticholinergic effects are often the culprit; however, even medications not generally recognized as possessing anticholinergic effects (e.g., meperidine [Demerol], digoxin [Lanoxicaps, Lanoxin] and ranitidine [Zantac]) can be responsible. Nursing home patients are at particular risk of delirium.

Among older patients, it can be challenging to distinguish between dementia and delirium. "One way is by the history," McIntyre said. "Namely, a picture of delirium is one that occurs with a more defined beginning to it. Previously, the individual's cognitive abilities appeared to be normal and then as a result of illness, medication or whatever, [the patient] becomes confused and has difficulty attending [paying attention to what is going on]."

In dementia, by contrast, "what one sees is a lowering of cognitive abilities across the board, so it is more pervasive and longer lasting," he added. Assessment Instruments

Although standard psychiatric, general medical, and neurological histories and examinations are usually sufficient to diagnose and evaluate the severity of the delirium, they can be supplemented by assessments using formal instruments, the guideline authors said. Several screening tools—Clinical Assessment of Confusion-A, Confusion Rating Scale, MCV Nursing Delirium Rating Scale and NEECHAM Confusion Scale—have been designed to be administered by nursing staff.

To make a formal diagnosis of delirium, several instruments have been developed including the Confusion Assessment Method, the Delirium Scale and the Saskatoon Delirium Checklist. Other instruments, such as the Delirium Rating Scale and Memorial Delirium Assessment Scale rate the severity of symptoms.

Several laboratory evaluations—such as brain imaging and measures of serum anticholinergic activity—are being studied for possible use in evaluating delirium. Only the electroencephalogram (EEG), however, is in general use.

"For several decades, investigators have observed EEG changes in patients with delirium [Engel and Romano, cited in Work Group on Delirium, 1999]," the guideline authors said. "EEG changes consist mainly of generalized slowing, although low-voltage fast activity is seen in some types of delirium, such as delirium tremens [Pro and Wells, cited in Work Group on Delirium, 1999]."

Diagnosis of delirium is critical, the guideline authors said, because delirium can be a "harbinger of significant morbidity and mortality." Patients who develop delirium after orthopedic surgery, for example, are at increased risk for postoperative complications, longer postoperative recuperation period, longer hospital stays and long-term disability (Gustafson et al., cited in Work Group on Delirium, 1999; Rogers et al., cited in Work Group on Delirium, 1999). Elderly patients who develop delirium during hospitalization have been estimated to have a 22% to 76% greater chance of dying during that hospitalization (Cameron et al., cited in Work Group on Delirium, 1999; Rabins and Folstein, cited in Work Group on Delirium, 1999).

"In a significant percent of cases, however, delirium is reversible, said McIntyre.

"By identifying the cause of it, whether it be medications, whether it be the underlying medical condition, or whatever it is and addressing the cause, then the delirium decreases and in many cases disappears."

Typically, the symptoms of delirium resolve within 10 to 12 days, the guideline authors said. But up to 15% of patients with delirium have symptoms that persist for up to 30 days and beyond (Sirois, cited in Work Group on Delirium, 1999). Some older patients may have a prolonged course.

Treatment and Education

The treatment of patients with delirium "begins with an essential array of psychiatric management tasks designed to provide immediate interventions for urgent general medical conditions, identify and treat the etiology of the delirium, ensure safety, and improve the patient's functioning," the guideline authors said. Antipsychotic medications are the pharmacological treatment of choice in most cases of delirium because of their efficacy in the treatment of psychotic symptoms (Adams et al., cited in Work Group on Delirium, 1999).

For instance, a randomized, double-blind comparison trial by Breitbart et al. (cited in Work Group on Delirium, 1999) demonstrated the clinical superiority of antipsychotic medications over benzodiazepines for treatment of delirium.

The most frequently used antipsychotic is haloperidol (Haldol), because of its short half-life; few, if any, anticholinergic side effects; lack of active metabolites; and lower likelihood of causing sedation. It can be administered orally, intramuscularly or intravenously and "may cause fewer extrapyramidal symptoms when administered intravenously," according to the guideline authors. Initial doses of haloperidol in the range of 1 mg to 2 mg every two to four hours have been used, with lower starting doses suggested for elderly patients (e.g., 0.25 mg to 0.50 mg every four hours). For patients who continue to be agitated, haloperidol can be titrated to higher doses.
For patients who require a more rapid onset of action, droperidol (Fentanyl, Inapsine), either alone or followed by haloperidol, can be considered, the guideline authors said. However, droperidol is more sedating than haloperidol. Recently, some physicians have used atypical antipsychotics, such as risperidone (Risperdal) (Ravona-Springer et al., cited in Work Group on Delirium, 1999; Sipahimalani and Masand, cited in Work Group on Delirium, 1999), olanzapine (Zyprexa) and quetiapine (Seroquel) in treating patients with delirium.

"There is continuing research, and the newer atypicals are holding up pretty well," McIntyre said. "We are committed to revising APA's practice guidelines at three- to five-year intervals. When the delirium guideline is next revised, my hunch is that the newer antipsychotics will have a more prominent role."

Because antipsychotic medications used to treat delirium have occasionally been found to lengthen the QT interval, possibly leading to torsades de pointes, ventricular fibrillation and sudden death, the guideline authors recommended a baseline electrocardiogram, with attention paid to the length of the QTc interval. A QTc interval greater than 450 msec or more than 25% over baseline may warrant a cardiology consultation and reduction or discontinuation of the antipsychotic medication. Other somatic interventions discussed in the guideline included benzodiazepines for delirium caused by withdrawal of alcohol or sedative-hypnotics, cholinergics where delirium is caused by anticholinergic medications, opiates for patients with delirium where pain is an aggravating factor and multivitamin therapy for malnourished patients.

Management of delirium also includes environmental and supportive interventions. Delirium, for example, can be aggravated by sensory impairments, including visual and auditory impairments, the guideline authors noted.

"By restoring a patient's glasses or hearing aid, one may substantially reduce the manifestations of delirium. Ensuring that there is an analog clock and a calendar that the patient can see will further facilitate orientation," they said. "Steps that render the environment more familiar and less alien, such as bringing in family photographs or favorite objects from home (e.g., stuffed animals) or actually having family members there when possible, are also helpful. Especially in a room that may be dark at night, night lights can help reduce anxiety."

The guideline authors also emphasized the need to educate the patient's friends and family about delirium, since they may have the same worries as the patient, such as whether the patient has brain damage or a permanent psychiatric illness. To help in that educational process, the guideline authors prepared a companion piece to the delirium guideline that is for patients and their families and friends.

"It translates the guideline into language that would be fully understandable to the average reader, where you don't have to assume that they have had specialized training," McIntyre said. Delirium-A Patient and Family Guide is designed to be used in a treatment relationship, McIntyre said. Currently, the guide is posted on the APA's Web site and may be available through some state psychiatric societies, McIntyre said.

"The distribution is not well worked out," he explained. "There may be some advocacy groups that will decide to purchase and distribute them."

Another resource for psychiatrists and other physicians is the Quick Reference Guide distributed with the guideline. It is a summary and synopsis of the practice guideline and contains graphical algorithms illustrating the treatment of delirium. According to the guideline authors, "[It] is not designed to stand on its own and should be used in conjunction with the full text of the practice guideline."

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