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Delirium Severity in the Hospitalized Patient: Time to Pay Attention

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Delirium is an acute confusional state characterized by inattention, impaired cognition, psychomotor disturbances, and a waxing and waning course. It is common in hospitalized older adults, ranging in prevalence from 20% to 50% in general medical–surgical units and from 70% to 80% in intensive care units (1).

Delirium is a strong predictor of poor patient outcomes. Patients with the condition have increased rates of mortality, cognitive and functional decline, and institutionalization and longer lengths of stay (1, 2). Delirium costs the U.S. health care system more than \$150 billion every year (3). Studies show that 30% to 40% of cases can be prevented by using low-tech, high-touch, and cost-saving interventions (1, 2).

Despite efforts to characterize the epidemiology and risk factors, develop easily administered diagnostic tools, and disseminate prevention and treatment protocols, delirium remains underdiagnosed and undertreated (4). This may be in part because many clinicians only think of delirium in the agitated patient. The hypoactive form of delirium is more common and perhaps more dangerous because it is associated with a significantly increased risk for death (1, 2, 5). Although the cognitive deficits that characterize delirium clearly present along a gradient of severity, we have few useful clinical tools that are simple to administer and directly address the question, “How bad is this patient’s delirium?” In this issue, Inouye and colleagues present a new scoring system for delirium severity (6). The scoring system has the advantage of being linked to the most commonly used diagnostic algorithm for delirium, the Confusion Assessment Method (CAM) (7). By using both the 4-item short form CAM algorithm and 10-item long form CAM instrument, they developed a related severity score known as the CAM-S. They showed that both versions of the CAM-S could be measured reliably in patients with and without dementia. Most important, they demonstrated that delirium severity is a useful clinical measure by showing a powerful graded association with outcomes. As delirium severity increases, the risk for death, nursing

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home placement, functional decline, and long hospital stays steadily increases. Thus, delirium severity is a powerful prognostic sign.

The short form of the CAM-S may be particularly useful for clinicians and researchers because of its ease of use and how it guides clinicians to consider the 4 core elements of delirium in their patients. Inattention, disorganized thinking, and altered level of consciousness are each rated as 0 (absent), 1 (mild), or 2 (marked). Patients are also assessed for fluctuating consciousness, which is rated as 0 (absent) or 1 (present). Unlike previously published delirium severity tools, 1 advantage of the short form is that it does not give greater severity weight to hyperactive delirium features (such as hallucinations, agitation, or hypervigilance) than hypoactive features (such as psychomotor retardation, increased sleep, or inattentiveness). This advantage is crucial to its use in monitoring clinical response to treatment and in research testing interventions for the prevention and treatment of delirium. For example, patients with agitated delirium treated with psychoactive medicines may falsely be labeled as improved if we convert their agitated delirium to hypoactive delirium. Use of the CAM-S would probably show that these patients are not improving.

Delirium is one of the most common complications of acute hospitalization of older adults, yet it goes unrecognized for the vast majority of hospitalized older Americans (1, 4). The risk for death in patients with delirium is similar to that in patients with acute myocardial infarction (4). Delirium is similar to diabetes mellitus in terms of the severity of associated complications and its effect on health care costs (5). Yet, our approaches to diagnosis and monitoring are markedly different.

Missing a diagnosis of myocardial infarction seems unthinkable. Even a remote possibility triggers troponin testing in the emergency department. Similarly, when a patient with diabetes is hospitalized, we intensely monitor glucose with fingersticks 4 times daily, despite little evidence that this improves outcomes in noncritically ill patients. Against this backdrop, it is odd that the culture of hospital care does not put the same focus on assessing and monitoring delirium, despite its strong association with poor outcomes and the effect of cognitive dysfunction on patients and families. When we walk into patients' rooms for morning rounds and they seem unfocused and disinterested in our history taking, we may fail to notice these signs as important clinical events. Rather than investigating the cause of this clinical event, we may turn away from the interview and repeat and record another normal cardiac or abdominal examination.

The CAM and CAM-S take us back to the core skills of medicine because their elements can all be assessed through focused conversations with patients. With training, clinicians can easily recognize delirium and rate its severity during daily rounds with little additional time investment. Rather than limiting the conversation when the patient seems less engaged, we can use it to assess for delirium using the 4-item CAM short form. Is this patient different from their baseline? Were they better during nursing rounds than they seem now (acute change and fluctuating course)? Do they not follow the conversation or frequently stare at activities outside the room or window (inattentive)? Do they frequently or unpredictably change topics, or does the conversation seem rambling or irrelevant (disorganized thinking)? Are they alert, lethargic, or vigilant (altered level of consciousness)? With practice,

clinicians can rate these as 0 (absent), 1 (mild), or 2 (marked), much like we learned to quantify pitting edema as 1 to 4+.

Once delirium is diagnosed, treatment focuses on looking for and addressing underlying causes while implementing nonpharmacologic measures that prevent and reduce its severity. It is not currently known whether earlier treatment of delirium prevents associated complications, such as functional and cognitive decline. However, the CAM-S and other such instruments should facilitate studies of the effect of delirium treatment on these outcomes. Beyond its association with adverse outcomes, earlier recognition and treatment of delirium is essential because it is often the only warning of serious underlying illness in older adults. Using tools like the CAM-S can facilitate our ability to recognize delirium severity, monitor response to treatment, and assess patient and caregiver needs after hospital discharge.

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