

Reducing the Incidence of Delirium in Hospitalized Patients

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Abstract

Delirium is a condition characterized by attention, consciousness, and cognition alterations, affecting focus, attention shifting, and sustaining abilities. It is prevalent in older inpatients, with reports indicating 50–70% of patients age ≥65 years experience delirium. Complications range from falls and extended hospital stays to increased mortality and cognitive decline progression. Risk factors include underlying dementia, age ≥65, immobility, sensory impairment, and high-risk medication use. Sleep disturbance is a significant cause in hospitalized patients. Current strategies involve optimizing sleep, providing familiar objects, orientation, and promoting wakefulness. Delirium measurement is challenging; the Confusion Assessment Method (CAM) is commonly used. A study found 80% of high-risk patients at a community medical center developed delirium in the prior 3 months. The aim of the study was to reduce the incidence of acute delirium on the floors of this center by 10% over 3 months. Seventy-three patients at high-risk for delirium (based on age ≥65 and/or underlying dementia) were admitted between December 2022 and February 2023 and included in the study. Those with a pre-existing diagnosis of delirium were excluded. A CAM screen order was placed for these patients every 8 hours, and positive results triggered the implementation of a sleep protocol. The charts were reviewed to assess the impact of the sleep protocol on reducing delirium incidence, considering CAM screen results, sleep protocol utilization, and the occurrence of delirium. The data were analyzed based on CAM screen results, sleep protocol utilization, and the development of delirium. Patients were categorized into groups based on their CAM screen results positive, negative, or no record of CAM screening during hospitalization. Sixty-one of the 73 patients underwent CAM screening, while the remaining 12 patients had no record of a CAM result. Seven patients received a positive CAM screen, but the implementation of the sleep protocol varied among these patients. All 4 patients who had a positive CAM screening but did not receive a sleep protocol developed delirium. In contrast, out of the 54 patients with a negative CAM screen, only 6 developed delirium. The initiation of a sleep protocol for CAM-negative patients did not appear to affect the incidence of delirium development. The utilization of early CAM screenings and subsequent implementation of the sleep protocol demonstrated a reduction in delirium incidence among our study's patient population.

Introduction

Delirium is a complex condition that profoundly affects attention, consciousness, and cognition, leading to impaired focus, attention shifting, and sustained attention. Its clinical

presentation encompasses a spectrum of symptoms, ranging from heightened psychomotor activity and behavioral disturbances to a state of reduced activity and disruptions in sleep patterns (1). Among older patients, age 65 years and above, who are hospitalized, delirium emerges as a highly prevalent issue, with reports indicating that approximately 50–70% of them are affected by this condition (2). Delirium brings forth a multitude of complications, including increased risks of falls, prolonged hospital stays, elevated mortality rates within one year, and accelerated cognitive decline (2). Various factors contribute to the development of delirium, including underlying dementia, advanced age, immobility, sensory impairments, and the usage of high-risk medications such as benzodiazepines, sedatives, anticholinergics, and opiates (3).

Sleep disturbance plays a significant role in the etiology of delirium among hospitalized patients, although the causes of delirium are diverse and multifaceted (2). Current strategies for managing delirium focus on optimizing sleep duration by minimizing interruptions, providing familiar objects and orientation cues such as hearing aids and glasses, and promoting wakefulness during the day through appropriate lighting and engaging activities. Nevertheless, the measurement of delirium remains complex due to the involvement of various contributing factors, making it challenging to ascertain its presence accurately. To address this, the Confusion Assessment Method (CAM) screening tool is commonly employed to identify patients with delirium during their hospitalization.

A recent study conducted at a community medical center shed light on the prevalence of delirium within a 3-month period. Among a high-risk population, a staggering 80% of patients developed delirium, underscoring the urgency and significance of addressing this condition effectively.

Methods

The study protocol has been approved and overseen by the Institutional Review Board (2022-0863) and was conducted in accordance with relevant guidelines and regulations of the IRB, including the Helsinki Declaration. During the period from December 2022 to February 2023, we conducted a study involving patients who were admitted to the medical-surgical floors at a community medical center and identified as high risk for delirium based on their age being greater than 65 and/or having underlying dementia. A total of 73 patients fitting the criteria for being "high-risk for delirium" were included in the study. Patients who already had an initial diagnosis of delirium prior to admission were excluded from the study to ensure a focused analysis.

As part of the study protocol, a CAM screen order was implemented for these high-risk patients for screenings to be conducted every 8 hours and documented in the electronic medical record. If a patient received a positive CAM screen result, a sleep protocol order would then be issued for that individual.

To assess the impact of the sleep protocol on delirium incidence, we thoroughly reviewed the patients' medical charts, examined the results of the CAM screenings and assessed whether a sleep protocol was initiated in response. Furthermore, the charts were assessed for any mention of delirium by a doctor or any formal diagnosis of delirium, utilizing specific search terms.

For the purpose of analysis, the collected data was categorized into different groups: CAM positive (Yes or No), Sleep protocol (Yes or No), and the development of delirium (Yes or No). These groupings allowed for a comprehensive examination of the relationships between CAM screening results, sleep protocol utilization, and the occurrence of delirium within the patient population under study.

Results and Discussion

The patients included in the study were categorized into different groups based on their CAM screen results those with at least one positive CAM screen (10%), those with at least one negative CAM screen and without any positive CAM screens (74%), and those with no record of CAM screening during their hospital stay (16%) (Table 1). Among the 61 patients who underwent CAM screening, the results of the CAM screens, the initiation of the sleep protocol, and the development of delirium were documented.

Out of the 61 patients who received screening as ordered, 7 had a positive CAM screen, but the initiation of the sleep protocol occurred in only 3 patients (Figure 1). Two out of these 3 patients developed delirium (67%). All 4 patients who had a

Variable	Count	% of total patients
Positive CAM screen	7	10%
Negative CAM screen	54	74%
No CAM screen recorded	12	16%
Sleep protocol ordered	19	26%
Delirium developed	8	11%

Table 1. Rate of CAM screen recording, development of delirium, and sleep protocol

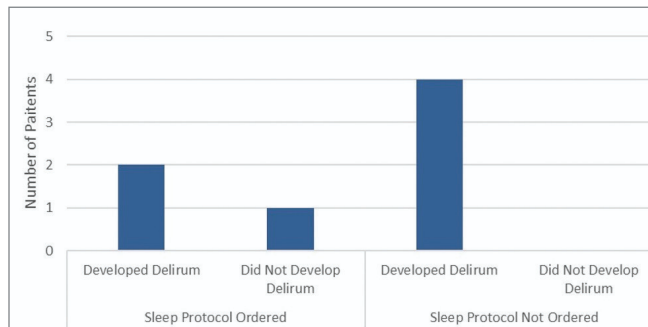


Figure 1. Outcomes in patients with positive CAM screening

positive CAM screening but did not receive a sleep protocol order developed delirium (100%). This resulted in a total of 6 out of 7 patients in the CAM positive group developing delirium (86%).

Among the 54 patients with a negative CAM screen result during admission, only 6 of them developed delirium (Figure 2). In the group who received sleep protocol, 25% developed delirium. In the group who did not receive sleep protocol, 6% developed delirium. Overall, the rates of delirium in patients who had a positive CAM screen (87%) far exceeded the rates of delirium in patients who screened negative on all CAM results (11%).

It appears that the initiation of the sleep protocol for patients with a positive CAM screen affected the incidence of delirium development. These findings shed light on the potential association between CAM screen results, the implementation of the sleep protocol, and the occurrence of delirium among the study participants. Further analysis is necessary to fully understand the implications and establish any causal relationships.

Conclusion

In conclusion, our study provides evidence that the utilization of early CAM screenings and subsequent initiation of the sleep protocol effectively reduced the incidence of delirium in our patient population. This reduction in delirium incidence can be attributed to various factors, including changes in pharmacy management for delirium, the presence of additional delirium workgroups, and the potential increase in awareness of delirium among hospital staff.

Given the substantial risks of mortality and cognitive decline associated with delirium, it is crucial to prioritize the early use of CAM screenings in high-risk patients. However, it is important to identify and address possible barriers to administering the CAM screening, as 16% of the patients in our study did not receive the screening. Inconsistencies in the pattern of the initiation of sleep protocol should also be addressed. Sleep protocol in this study was intended to be initiated only in the setting of a positive CAM screen, but the pattern of its use was not consistent with this protocol, showing that there may be a lack of uniformity in understanding its use.

Moving forward, it is recommended to continue improving education on CAM screenings and sleep protocol among patient care providers. Additionally, gaining insights into the difficulties

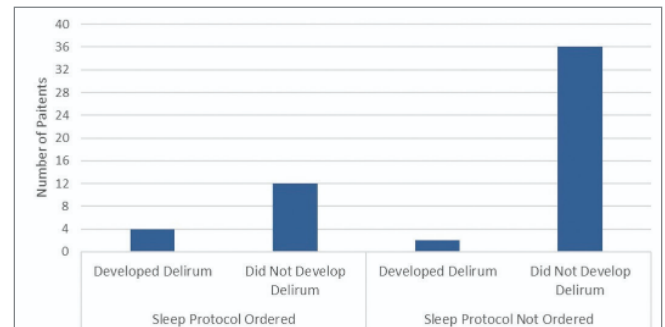


Figure 2. Outcomes in patients with negative CAM screening

encountered during CAM screenings administration and implementing measures to overcome these challenges will help prevent any lapses in survey administration.

In summary, our findings were limited by sample size but provide a foundation for future work on discovering the potential for reducing delirium within high-risk patient populations. By further enhancing screening practices and addressing potential obstacles, we can continue to make strides in mitigating the impact of delirium on patient outcomes.

References

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