

Original Research Article

Prevalence of delirium in elderly intensive care unit patients of a tertiary care medical college hospital

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ABSTRACT

Background: Delirium is an acute disorder of attention and cognition. It occurs in 20% to 79% of hospitalized older patients. It is also common in ICU patients, occurring in 20% to 50% of non-mechanically ventilated ICU patients and in 60% to 80% of mechanically ventilated ICU patients. Hence delirium is a common, serious, and often fatal condition among older patients. The present study attempts to address the prevalence of Delirium in the Indian elderly population.

Methods: A cross sectional study was conducted between January 2019 to June 2019 in a 50 bedded intensive care unit of a tertiary care hospital in Bengaluru, Karnataka. A total of 300 elderly patients aged 60 years and above, satisfying the inclusion criteria was included in the study. Patients were assessed for the presence of delirium within 24 hours of admission using Confusion Assessment Method for Intensive Care Unit (CAM-ICU). Various qualitative variables were expressed in terms of proportions.

Results: Prevalence of delirium among elderly, non-ventilated ICU patients was 30% (90 out of 300 patients). Among them, 50 (55.5%) were females and remaining 40 (44.5%) were males. Mean age of the patients was 76 years. About 50 (55.5%) of them belonged to age group of 70-79 years. Most of the delirium patients (44.5%) belonged to hypoactive type of delirium followed by hyperactive (33.3%) and mixed (22.2%) type of delirium.

Conclusions: Delirium in elderly ICU patients is significantly prevalent, which is a poor prognostic factor, leading to higher morbidity and mortality. Of the three subtypes- hypoactive delirium is the most common type of delirium among elderly. Yet, it is often overlooked or under-diagnosed. Hence clinicians and/or trained nursing staff managing the patients in the ICUs, should routinely screen the patients for delirium, using brief screening measures, which in turn can improve the patients' outcome.

Keywords: Delirium, Elderly, Intensive care unit

INTRODUCTION

The Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV) defines delirium as a disturbance of consciousness and cognition that develops quickly (hours to days) and fluctuates with time. In addition, it is characterized by inattention and either disorganized

thinking or an altered level of consciousness.¹ In short, Delirium is an acute disorder of attention and cognition. It is a common, serious, and often fatal condition among older patients. Although often under recognized, delirium has serious adverse effects on the individual's function and quality of life, as well as broad societal effect with substantial health care costs.²

Delirium is common, occurring in as many as 56% of hospitalized patients. Delirium occurs in 20% to 79% of hospitalized older patients. It is also common in ICU patients, occurring in 20% to 50% of non-mechanically ventilated ICU patients and in 60% to 80% of mechanically ventilated ICU patients. Postoperative delirium and end-of-life delirium are also common.¹ ICU delirium is a predictor of: ↑ mortality, ↑ length of stay, ↑ time on ventilator, ↑ costs, ↑ re-intubation, ↑ long-term cognitive impairment, and ↑ discharge to long-term care facility.³

Delirium remains a clinical diagnosis, and the condition is easily overlooked. Recognition is based on brief cognitive screening and careful bedside observation of key features such as- acute onset and fluctuating course of symptoms, inattention, impaired level of consciousness, and disturbance of cognition indicating disorganization of thought (e.g., disorientation, memory impairment, or alteration in language). Other features supportive of the delirium diagnosis include alterations in sleep-wake cycle, perceptual disturbances (e.g., hallucinations or misperceptions), delusions, inappropriate or unsafe behaviour, and emotional lability.²

There are three subtypes of delirium: hyperactive, hypoactive and mixed. Hyperactive delirium is characterized by agitation, restlessness, and attempts to remove tubes and lines. Hypoactive delirium is characterized by withdrawal, flat affect, apathy, lethargy, and decreased responsiveness. Mixed delirium is when patients fluctuate between the two. In ICU patients mixed and hypoactive are the most common, and are often undiagnosed (invisible) if routine monitoring is not implemented. Few ICU patients (<5%) experience purely hyperactive delirium.³The present study attempts to address the prevalence of Delirium in the Indian elderly population of which very little has been published.

METHODS

The present study was a cross sectional study, conducted in a 50 bedded Intensive Care Unit (ICU) of a tertiary care hospital in Bengaluru, Karnataka, India between January 2019 - June 2019.

Sample size

Elderly patients aged 60 years and above who were admitted to the ICU between January 2019- June 2019 were assessed for the presence of delirium within 24 hours of admission. Informed consent was taken from all patients.

Inclusion criteria

Elderly patients aged 60 years and above, admitted to the multispecialty ICU.

Exclusion criteria

Elderly patients with structural brain disease/ traumatic brain injury directly leading to altered level of consciousness.

1. Unconscious patients or elderly patients with RASS score less than -3 (i.e, RASS -4 or -5)
2. Mechanically ventilated patients.

Study tool

Confusion Assessment Method for the Intensive Care Unit (CAM-ICU),³ a valid and reliable delirium assessment tool recommended by the Society of Critical Care Medicine (SCCM) in its 2013 Pain, Agitation, and Delirium (PAD) guidelines, was used to assess delirium.

Statistical analysis

The various qualitative variables were expressed in terms of proportion. Chi square test was used to find the association between different categorical variables (such as age, gender etc.) and delirium. P value was calculated to find the statistical significance of the variables. P < 0.05 was considered as statistically significant.

RESULTS

A total of 300 elderly patients, who fulfilled the inclusion criteria, were evaluated for the presence of delirium within 24 hours of admission to the ICU. Prevalence of delirium among elderly, non - ventilated ICU patients was 30% (90 out of 300 patients). Among them, 50 (55.5%) were females and remaining 40 (44.5%) were males.

Table 1: Demographic characteristics of study subjects.

Characteristic	Delirium		p value
	Present (N=90)	Absent (N=210)	
Gender distribution	n (%)	n (%)	
Male	40 (44.4)	140 (66.6)	<0.0001
Female	50 (55.6)	70 (33.3)	
Age distribution			
60-69 years	10 (11.1)	120 (57.1)	<0.0001
70-79 years	50 (55.5)	70 (33.3)	
≥80 years	30 (33.3)	20 (9.5)	

Chi square test.

This difference in the prevalence of delirium with respect to gender was found to be statistically significant (p < 0.0001). Mean age of the patients with delirium was found to be 76 years. About 50(55.5%) of them belonged to age group of 70-79 years and 30(33.3%) to the age

group ≥ 80 years. This was found to be statistically significant ($p < 0.0001$) (Table 1).

Among patients with delirium, 40 (44.5%) patients belonged to hypoactive type of delirium, which was the most common type of delirium. Of the remaining, 30 (33.3%) belonged to hyperactive type of delirium and 20 (22.2%) belonged to mixed type of delirium (Figure 1).

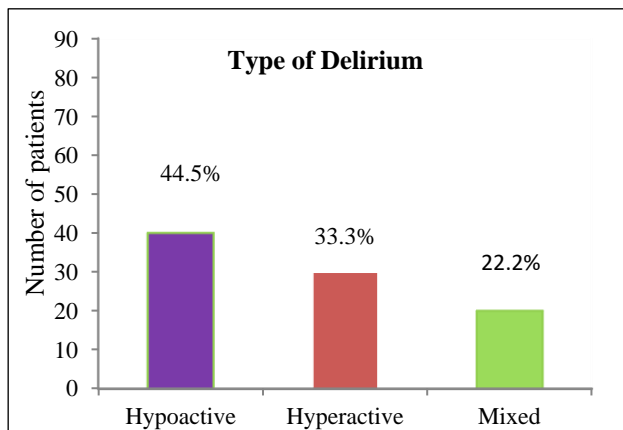


Figure 1: Distribution of patients based on the type of delirium.

DISCUSSION

In our study, the prevalence of delirium in non-ventilated elderly ICU patients was found to be 30%. In a review article by Fosnight et al, prevalence of delirium was found to range between 20-50% in non-mechanically ventilated patients.¹ In a similar study conducted by Salluh et al, and Ryan et al, prevalence of delirium was found to be 32.2% and 34.8% (in >80 years old).^{4,5} In another study by Grover et al, 35.52% patients screened positive for delirium on CAM-ICU. An article by Kalish et al, states that prevalence of delirium in elderly ICU patients without mechanical ventilation ranges between 20-50%.⁷ According to a study by Johnson et al, Prevalence of delirium in hospital ranges from 10-20% in medical wards and could become higher as the elderly population in hospital increases.⁸ About 25% of people over 70 years old admitted to hospital have delirium.

In the present study, mean age of elderly patients with delirium was found to be 76 years. This is similar to several other studies like that conducted by Salluh et al, Ryan et al and Grover et al and where in the mean age of patients with delirium was 64 years, 69 years and 68.82 years respectively.^{4,6} Also in the present study, majority of the patients with delirium (around 55.5%) belonged to the age group of 70-79 years. This finding is similar to several other studies such as that conducted by Grover et al which state that age of 70.71 ± 8.45 years is one of the risk factors for the development of delirium.⁶ In another study conducted by Kalish et al, it was observed that age over 65 years was one of the predisposing factors for

delirium.⁷ Also an article by Johnson et al states that, age is one of the strongest predisposing factors of delirium.⁸

In the present study, 55.5% of delirium patients were females. This is similar to a study conducted by Ryan et al, wherein 51.1% of the patients were female. In contrast to this in a study conducted by Grover et al, majority (67.13%) of the patients were male.^{6,8} This could be because men are usually more prone to alcoholism, smoking habits and these have been noted as risk factors for delirium, likely because of withdrawal symptoms.¹

Majority of the patients (44.5%) belonged to hypoactive type of delirium, followed by hyperactive (33.3%) and mixed subtypes. This is similar to a study conducted by Grover et al,⁹ where in hypoactive subtype (47% of the cases) was the most common motoric subtype of delirium, followed by mixed subtype (29%). Hyperactive subtype (24.5%) was the least common subtype of delirium. Also, an article by Kalish et al says, older patients commonly present in the hypoactive form, which often goes unrecognized.⁷ It has been suggested that hypoactive delirium may be more often missed as these patients are less markedly noticeable when compared to hyperactive delirium.^{9,10}

CONCLUSION

Delirium in elderly ICU patients is significantly prevalent, which is a poor prognostic factor, leading to higher morbidity and mortality. Of the three subtypes of delirium, hypoactive delirium, which is the most common type of delirium among elderly, is often overlooked or under-diagnosed. Considering the high prevalence of delirium in elderly patients admitted to ICU, clinicians and/or trained nursing staff managing the patients in the ICUs should routinely screen the patients for delirium, using brief screening measures. This in turn can be helpful in improving patient outcomes.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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