


Editorial

Putting delirium in the spotlight

L.L.A. Isuru^{1*}¹Faculty of Medicine and Allied Sciences, Rajarata University of Sri Lanka, Saliyapura, Sri Lanka**Keywords:** delirium, medical emergency, DSM-5**Copyright:** © 2022 Isuru L.L.A.  This is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.**Funding:** None**Competing interest:** None**Received:** 18.12.2022**Accepted revised version:** 20.12.2022**Published:** 24.12.2022*✉ **Correspondence:** amila.isuru23@gmail.com <https://orcid.org/0000-0003-3113-1209>

Cite this article as: Isuru L.L.A. Putting delirium in the spotlight. Anuradhapura Medical Journal 2022; 16 (3): 01-04, DOI: <http://doi.org/10.4038/amj.v16i3.7752>

Delirium is a medical emergency commonly encountered across healthcare services [1]. Contrary to the common belief that delirium is entirely a reversible condition, mounting evidence reported that delirium is associated with increased mortality and permanent cognitive impairment [2]. Hence, the identification, management, and prevention of delirium at the time of admission and during the hospital stay are of high importance. However, it has been shown that up to 40% to 60% of cases of delirium are missed in the hospital setting [3]. Despite the predictability and availability of effective preventive measures, delirium is a significant source of health and economic burden [4].

Delirium is characterised by acute impairment of the level of consciousness and cognition with reduced attention span. Furthermore, delirium can be associated with an inverted sleep-wake cycle, abnormal psychomotor activity, and neuropsychiatric symptoms such as delusions and hallucinations [5]. Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM 5) provides systematic diagnostic criteria of delirium, which has evolved gradually through diagnostic systems [6] (Table 01).

Published research on delirium in Sri Lanka is scarce. One published research reported that delirium prevails among two-thirds of the mechanically-ventilated patients in the Intensive Care Unit (ICU) setting in Sri Lanka [7]. Another study showed that the knowledge of identification, prevention and management is lacking among healthcare professionals [8]. This suggests that delirium may be common but more likely to be

neglected. Hence, training healthcare professionals on the prevention, identification and management of delirium is a timely and pertinent step to improve care in hospital settings.

Table 01: DSM 5 Diagnostic criteria for delirium, American Psychiatric Association [6]

- A. A disturbance in attention (i.e., reduced ability to direct, focus, sustain, and shift attention) and awareness (reduced orientation to the environment).
- B. The disturbance develops over a short period of time (usually hours to a few days), represents a change from baseline attention and awareness, and tends to fluctuate in severity during the course of a day.
- C. An additional disturbance in cognition (e.g., memory deficit, disorientation, language, visuospatial ability, or perception).
- D. The disturbances in Criteria A and C are not explained by another pre-existing, established, or evolving neurocognitive disorder and do not occur in the context of a severely reduced level of arousal, such as coma.
- E. There is evidence from the history, physical examination, or laboratory findings that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal (i.e., due to a drug of abuse or to a medication), or exposure to a toxin, or is due to multiple aetiologies.

Incidence and prevalence

The incidence and prevalence of delirium depend on many factors such as age, setting patients are in, duration of hospital stay and the method of assessment [4]. The

highest prevalence of delirium was reported in the older patient population. The prevalence of delirium is between 15% to 20% in elderly patients admitted to medical wards, and the prevalence is 1 to 2% in the elderly population [3]. The prevalence of delirium in general medical settings ranges from 11 to 42%, and the rates can be as high as 85% in patients admitted to intensive care units and up to 83% in patients at end-of-life care [5].

Pathophysiology

The pathophysiology of delirium is not yet fully understood. There are two currently accepted hypotheses that help understand the complex pathophysiology of delirium. The first hypothesis describes neurochemical abnormalities of serotonin, dopamine, acetylcholine, glutamine, and Gama aminobutyric acid in the causation of delirium. The second hypothesis describes that delirium occurs as a response of the central nervous system to a systematic inflammation when the function of the blood-brain barrier is compromised [9].

What causes delirium?

The most critical step in the management of delirium is identifying and treating the underlying cause of delirium, which may change the outcome of the patient. Sometimes, the aetiology of delirium can be multifactorial and therefore, it is worthwhile to screen for all the possible causes of delirium [4]. Table 2 illustrates the predisposing and precipitating factors of delirium [4].

Table 02: Predisposing and precipitating factors of delirium

Predisposing factors	Precipitating factors
Age > 65 years	Infections
Male	Pain
Dementia	Constipation
Hearing/visual impairment	Fever
Dehydration	Dehydration
Malnutrition	Hypoxia
Anticholinergic drugs	Hyponatremia
Alcohol abuse	Poor nutritional status
Hepatic impairment	Sedative hypnotics
Renal impairment	Anticholinergic drugs
Stroke	Alcohol withdrawal
Metabolic abnormalities	Cardiac surgery
infections	Orthopaedic surgery
Trauma or fractures	Prolonged sleep deprivation
Severe medical illnesses	Use of physical restraints
Immobility	Stroke/ intracranial bleeding

Why is diagnosing delirium challenging?

The onset of delirium is usually rapid, and the symptoms can be highly variable and may fluctuate over time. The characteristic feature of delirium is impaired consciousness. Therefore, patients with delirium can be presented with a lack of awareness of their surroundings, drowsiness, disorientation and distractibility [1].

Patients with delirium can be presented with symptoms of mental illness [4].

Mania-like symptoms - reduced sleep, agitation, increased energy, and speech

Depression-like symptoms - withdrawn, reduced energy, reduced activity, and speech

Schizophrenia-like symptoms – delusions, hallucinations, thought disorders, disorganised behaviour

A variety of different presentations may lead to a delay in the diagnosis of delirium. Hence, regular screening of at-risk patients is important to identify patients with delirium [2].

Prevention of delirium is important

Delirium causes increased mortality, cognitive impairment, and loss of independence at an individual level and increased healthcare cost and service use at the healthcare organisation level. Hence, preventing delirium improve patient outcome and healthcare cost. Given the well-described precipitating and predisposing factors of delirium, delirium can be predicted in an individual at risk [5].

Delirium is under-recognised and undertreated in hospital settings. Therefore, creating awareness about delirium and how it affects patient outcomes among hospital staff is important [4]. This can be achieved by training programs on the identification and evidence-based management of delirium. Formulating a sound discharge plan and follow-up enable to identification and management of the consequences of delirium.

There are several evidence-based strategies to prevent delirium at the individual level. A multicomponent non-pharmacological approach is effective in the prevention and management of delirium [4] (Table 03). Multicomponent management is more clinically relevant because delirium has many causes. Interventions for the prevention of delirium are more promising than interventions for the treatment of delirium.

There is no established evidence to support pharmacological interventions for the prevention of delirium in the hospital setting [10].

Management of delirium

When delirium is diagnosed, it is important to identify and treat the causative factor [5]. This can be achieved by comprehensive history, physical examination and relevant investigations. Symptoms of delirium is distressful to the patient, ward staff and to family members. There are two approaches;

Non-pharmacological management

The mainstay of management is non-pharmacological management [4,10]. Such interventions include regular reorientation of patients, reassurance, management in a well-lit area, and a nurse with familiar staff. In addition to that, adequate hydration, improved normal sleep-wake cycle, adequate pain relief, treatment of constipation, and early mobilisation are effective non-pharmacological management strategies for delirium [4]. The patient surrounding needs to be modified to maximise safety and calmness. It is important to ensure adequate training of hospital staff on the non-pharmacological management of delirium, which will improve the outcome of patients with delirium. Non-pharmacological management is effective in the management of delirium without using physical or chemical restraints [10].

Table 03: Multicomponent non-pharmacological management of delirium

Identification of high-risk patients e.g., age>65 years, following hip surgery
Reorientation
Reassurance
Improve sleep
Alleviate pain
Prevent constipation
Adequate hydration
Encourage mobility and general activity
Use hearing and visual aids
Repeated reorientation and reassurance
Managed in a well-lit area
Nurse with familiar staff
Involve family in hospital care routines

Pharmacological management

There is little evidence to show improvement in the outcome of patients with delirium following pharmacological interventions [10]. Low-dose antipsychotics and benzodiazepines are commonly used. However, the side effects of these medications limit their use in this patient population. Therefore, the use of medications should be reserved for the management of

behaviours that increase the risk to the patient or others [5].

Antipsychotics can be helpful if a patient with delirium exhibits delusions, perceptual disturbance, or behavioural problems. Haloperidol is commonly used as it has fewer hypotensive and anticholinergic side effects compared to other antipsychotic medications [11,12]. However, haloperidol is a potent dopamine 2 receptor blocker. It can lead to an increased risk of extrapyramidal side effects and neuroleptic malignant syndrome [11,12].

Recent studies showed some efficacy and safety of low-dose second-generation antipsychotic medication in the management of behavioural problems in patients with delirium [11,13].

Antipsychotics are to be used with extreme caution in the management of delirium in patients with Lewy body dementia and Parkinson's disease. Severe neuroleptic sensitivity is experienced by 30 to 50% of patients with Lewy body dementia [14].

Use of Benzo diazepam in the management of delirium can be counterintuitive because it can prolong the duration of delirium [10]. Benzodiazepine is reserved for the management of delirium tremors in complicated severe alcohol withdrawal [15]. Parenteral thiamine is used to manage patients with delirium in the context of Wernicke's encephalopathy, and it will prevent the progression of the condition to Korsakoff psychosis [16].

Why bringing into the spotlight?

Delirium in hospitalised patients is associated with increased mortality, morbidity and permanent cognitive deficits. Hence, the prevention of delirium is important, and it is feasible given its predictability and the availability of simple yet effective interventions. Healthcare workers in Sri Lanka are dealing with an overwhelming number of inward patients across the country; hence it is important to have regular training programs on the identification, prevention and management of delirium for healthcare staff.

References

1. Meagher D. More attention, less confusion: Time to lessen the burden of delirium. *Int Rev Psych.* 2009;21(1):1–3. DOI: <https://doi.org/10.1080/09540260802675387>
2. Goldberg TE, Chen C, Wang Y, Jung E, Swanson A, Ing C, et al. Association of delirium with long-term cognitive decline: A meta-analysis. *JAMA Neurol.* 2020;77(11):1373–81. DOI: [10.1001/jamaneurol.2020.2273](https://doi.org/10.1001/jamaneurol.2020.2273)
3. Kalish VB, Gillham JE, Unwin BK. Delirium in Older persons: Evaluation and Management. *Am Fam Physician.* 2014;90(3):150–8. PMID: 25077720

4. O'Connell H, Kennelly SP, Cullen W, Meagher DJ. Managing delirium in everyday practice: Towards cognitive-friendly hospitals. *Adv Psychiatric Treat.* 2014;20(6):380–9. DOI: 10.4103/0019-5545.224473
5. Mattison MLP. Delirium. *Ann Intern Med.* 2020;173(7):ITC49–64. DOI: <https://doi.org/10.7326/AITC202010060>
6. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders. American Psychiatric Association; 2013. DOI: <https://book/10.1176/appi.books.9780890425596>
7. Nimali Lochanie PA, Ranawaka NMD. Assessment of incidence and risk factors for intensive care acquired delirium in mechanically ventilated patients in surgical intensive care unit – National Hospital of Sri Lanka. *Sri Lankan J Anaesthesiol.* 2018;26(2):131–6. DOI: 10.4038/slja.v26i2.8339
8. Jayasinghe Arachchi TM, Pinto V. Understanding the barriers in delirium care in intensive care unit: A survey of knowledge, attitudes, and current practices among medical professionals working in intensive care units in teaching hospitals of central province, Sri Lanka. *Indian J Crit Care Med.* 2021;25(12):1413–20. DOI: 10.5005/jp-journals-10071-24040
9. van der Mast RC. Pathophysiology of Delirium. *J Geriatr Psychiatry Neurol.* 1998;11(3):138–45. DOI: 10.1177/089198879801100304
10. Inouye SK, Marcantonio ER, Metzger ED. Doing damage in delirium: the hazards of antipsychotic treatment in elderly people. *Lancet Psych.* 2014;1(4):312–5. DOI: DOI:10.1016/S2215-0366(14)70263-9
11. Markowitz JD, Narasimhan M. Delirium and antipsychotics: a systematic review of epidemiology and somatic treatment options. *Psychiatry.* 2008;5(10):29–36. PMID: PMC2695757.
12. Barbateskovic M, Krauss SR, Collet MO, Andersen-Ranberg NC, Mathiesen O, Jakobsen JC, et al. Haloperidol for the treatment of delirium in critically ill patients: A systematic review with meta-analysis and Trial Sequential Analysis. *Acta Anaesthesiol Scand.* 2020;64(2):254–66. DOI: 10.1111/aas.13501.
13. Rivière J, van der Mast RC, Vandenberghe J, Van Den Eede F. Efficacy and tolerability of atypical antipsychotics in the treatment of delirium: A systematic review of the literature. *Psychosomatics.* 2019;60(1):18–26. DOI: 10.1016/j.psych.2018.05.011
14. Boot BP. Comprehensive treatment of dementia with Lewy bodies. *Alzheimers Res Ther.* 2015;7(1):1–8. DOI: 10.1186/s13195-015-0128-z
15. Grover S, Ghosh A. Delirium tremens: assessment and management. *J Clin Exp Hepatol.* 2018;8(4):460–70. DOI: 10.1016/j.jceh.2018.04.012
16. Thomson AD, Guerrini I, Marshall EJ. The evolution and treatment of Korsakoff's syndrome out of sight, out of mind? Vol. 22, *Neuropsych Rev.* 2012. p. 81–92. DOI: 10.1007/s11065-012-9196-z.



Submit your next manuscript to
**Anuradhapura
Medical Journal**

Submit your manuscript at
<http://amj.sljol.info/>