

Letter to Editor:

Can Delirium and Catatonia Co-occur? A Clinical Conundrum

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Dear Editor,

Delirium is an acute brain dysfunction usually caused by medical illnesses, surgical procedures, or drug effects, characterized by fluctuations in consciousness and attention levels [1]. It is especially common among elderly patients and in intensive care units (ICUs), with reports showing that delirium occurs in 20–50% of postoperative elderly patients, more than 30% of ICU patients, and up to 80% of those on mechanical ventilation [1–4]. Delirium extends hospital stays, can lead to long-term cognitive decline, and increases the risk of death if not treated [5].

Catatonia is a syndrome linked to mental illness and characterized by motor dysfunction [6]. Catatonic symptoms include immobility (stupor), mutism, negativism, posturing (catalepsy), and excessive motor activity [7]. It is a condition that can serve as a symptom not only of mental illness but also of medical conditions [8]. The historical association of catatonia with schizophrenia has led to it being overlooked within a broader spectrum. However, today it is commonly recognized as related to mood disorders, neurological diseases, and various general medical conditions [9]. For a current

review of catatonia, including epidemiology, mechanisms, diagnosis, management, and its interaction with delirium, see Hirjak et al. (2024) [10].

The relationship between delirium and catatonia has been underestimated for a long time. However, recent research shows that delirium and catatonia can occur together in the same patients and may share common pathological mechanisms [11]. The shared neurobiological mechanisms between catatonia and delirium are especially linked to changes in the limbic system and the brain's dopaminergic system [12]. Clinical observations also support the increased prevalence of catatonia syndrome in patients diagnosed with delirium [13]. The coexistence of these two syndromes is considered a significant factor that can influence complications and prognosis during treatment [14].

In this letter, we aimed to explore the prevalence, clinical features, etiological factors, and treatment responses of catatonia syndrome in patients with delirium. It will also review current literature on the etiological and pathophysiological

connections between delirium and catatonia. The goal is to improve clinical awareness of catatonia in individuals with delirium.

Delirium And Catatonia Comorbidities

Delirium and catatonia are neuropsychiatric syndromes with rapid onset, involving motor and behavioral changes. Typically, delirium is characterized by disturbances in attention, perception, and consciousness, whereas symptoms like motor rigidity, stereotypy, negativism, or agitation identify catatonia. However, recent research increasingly indicates that both conditions can happen simultaneously [15]. Older and medically ill populations show exceptionally high overlap. In a prospective ICU cohort (n=136), 31% of patients experienced both delirium and catatonia, while only 3% had catatonia alone [15]. In a follow-up analysis of the same cohort, increasing age strongly predicted catatonia; among the oldest subgroup with catatonia, 93% also had delirium, and over 50% of delirious older adults had catatonia [16]. Outside ICU settings, among medically ill inpatients with a prior diagnosis of delirium, 26% experienced both catatonia and delirium, and 7% had catatonia alone [17]. These findings support targeted screening for catatonia in elderly and medically complex patients.

DSM-5-TR states that when catatonic signs only appear during delirium, the diagnosis of ‘Catatonia Due to Another Medical Condition’ should not be given (a diagnosis of catatonia caused by a medical condition shouldn't be made if it only happens during an episode of delirium) — a rule that can prevent accurately recording true co-occurrence. One reason for distinguishing between these diagnoses may be the significant overlap in motor symptoms. However, studies show that the coexistence of these two conditions is not rare: In a survey by Grover and colleagues (2014) evaluating the prevalence of catatonia in 205 patients diagnosed with delirium, at least two catatonic symptoms were found in 39% of

patients, and 12.7% met the DSM-5 criteria for catatonia [18]. In a different study involving 120 patients with a prior diagnosis of delirium, 26% exhibited both catatonia and delirium, whereas 7% showed only catatonia [17]. Catatonic symptoms appeared more frequently in patients with delirium compared to those without, probably because of autonomic irregularities and stupor, which are associated with severe illness. Due to this frequent coexistence, it has been suggested that the DSM-5 criteria for ‘Catatonic Disorder Due to Another Medical Condition’, which prevent the diagnosis of catatonia in the presence of delirium, should be revised [15].

The clinical symptoms of delirium and catatonia often overlap, making it challenging to recognize that these conditions can co-occur. Patients may show either agitation and motor restlessness or motor immobility. Changes in consciousness levels might be mistaken for the stupor typical of catatonia. Furthermore, confusion or perceptual disturbances can be misinterpreted as negativism associated with catatonia. Therefore, it can be difficult to distinguish between the two conditions, and delays in early diagnosis may negatively impact treatment outcomes [19]. Practical clinical clues to distinguish them include:

Favors catatonia: echolalia/echopraxia, waxy flexibility, posturing/catalepsy, gegenhalten/mitgehen, automatic obedience, ambitendency, pronounced negativism — features less well-explained by fluctuating attention [20].

Favors delirium: objectively demonstrable inattention (e.g., CAM-ICU/4AT items), disorientation with fluctuating course of arousal, perceptual disturbances [1-5].

Both can co-occur; therefore, use two parallel screens: Bush–Francis Catatonia Rating Scale (BFCRS) for catatonia and Confusion Assessment Method for the ICU (CAM-ICU)/ 4 ‘A’s Test (4AT) for delirium, and re-assess serially.

It should be kept in mind that catatonic symptoms commonly seen in patients with delirium may include excitement, immobility/stupor, mutism, negativism, aggressiveness, withdrawal, staring, and impulsivity [13].

Imbalances in GABA and glutamate systems are known to contribute to both conditions. The success of benzodiazepines, which act as GABA-A agonists, in treating catatonia further supports the role of these pathways in its cause. Moreover, elevated inflammatory cytokines have been detected in both conditions and are thought to interfere with central nervous system functioning [21].

While treatments for delirium and catatonia are known to differ significantly when they occur separately, there is limited evidence on how to manage both conditions together. The lorazepam challenge test (LCT) both supports diagnosis and helps start treatment. A common method is administering lorazepam 1–2 mg IV or 2.5 mg p.o. (consider using 1 mg for older adults or those at respiratory risk) With re-examination after 5–10 minutes (30-60 minutes for oral), a $\geq 50\%$ reduction in BFCRS indicates a positive response. If positive, continue scheduled lorazepam (e.g., divided doses every 4–8 hours) and adjust for remission; if response is inadequate or malignant features appear, arrange electroconvulsive therapy (ECT) promptly. Use antipsychotics cautiously when catatonia is suspected, especially in malignant catatonia or NMS spectrum [20,22].

Appiani et al. (2023) found that one in eight patients with both conditions responded well to lorazepam, and those who did not respond showed no deterioration during follow-up [17]. It is advisable to continue lorazepam in patients who respond positively to treatment for catatonic symptoms. Additionally, the coexistence of delirium and catatonia can complicate treatment responses [21]. Further research is needed to identify effective strategies for managing this combined condition.

Although the co-occurrence of delirium and catatonia has become more recognized in recent years, our understanding of this overlap remains limited. In this context, diagnostic scales should be adapted to identify both conditions simultaneously. Additionally, neuroimaging techniques (such as fMRI and PET) and biomarker research should focus on the co-occurrence of delirium and catatonia. Controlled studies on pharmacological treatments (e.g., GABA modulators) and performing comparative analyses of risk factors (age, comorbid conditions, sedative-hypnotic use) across different patient groups are also necessary.

In conclusion, the coexistence of delirium and catatonia is quite frequent. Consequently, nosological systems should be updated to allow for the simultaneous diagnosis of both conditions. The distinction between delirium and catatonia is likely fluid, and treatment strategies may differ significantly when both are present. Thus, researchers and clinicians should be alert to the frequent co-occurrence of delirium and catatonia and tailor management accordingly.

Declaration of Interests

The authors declare that they have no known competing personal interests that could have influenced the work reported in this paper.

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There are no conflicts of interest among the authors.

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