

# Catatonic Syndrome: Importance of Detection and Treatment with Lorazepam

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**Background.** A resurgence of interest has led to renewed attempts to clarify the concept and treatment of catatonia.

**Method.** A large prospective study was conducted to estimate the incidence of catatonic syndrome in 138 consecutive psychiatric patients admitted to a general hospital in India, to demarcate the common symptom presentations and its response to intravenous benzodiazepines. Patients were screened using the Bush Francis Catatonia Screening Instrument. Patients with two or more signs on the Instrument were subsequently administered intravenous lorazepam and their response was rated on the Bush Francis Catatonia Rating Scale.

**Results.** Catatonic syndrome was found in 11% of patients with a wide variety of diagnoses, especially schizophrenia. Mutism (87.5% incidence) was the most common symptom. A significant proportion (93%) of these patients showed a marked immediate response to lorazepam, with 75% showing sustained improvement.

**Conclusions.** Catatonic syndrome is common, often undiagnosed, and quickly responsive to treatment, irrespective of the diagnosis. It needs to be identified and actively treated with benzodiazepines to minimize distress, and facilitate diagnosis and treatment. Most patients also need additional treatment for the underlying psychiatric condition.

**Keywords** Catatonia, Incidence, Diagnoses, Treatment, Benzodiazepines

## INTRODUCTION

There is a resurgence of interest in the nosology (1–4), etiology (5–8), pathology (1,5,9) and treatment (10–13) of catatonia in both children and adults. First described as a motor disorder of severe psychiatric illness by Kahlbaum (3), catatonia was subsumed under Kraepelin’s dementia praecox and Bleuler’s schizophrenia. DSM III and III-R also recognized it only as a subtype of schizophrenia. However, catatonia is now recognized as a syndrome that can also occur in non-schizophrenic psychiatric disorders, e.g., bipolar (3,14), and major depression (15), as well as in general medical illnesses (3,8,16,17). In fact, Taylor and Fink (3) have argued that “the scientific literature offers substantive support for the identification of catatonia as a distinct nosologic syndrome” (p. 1238). They propose a

reclassification of catatonia as a distinct syndrome with three subtypes (nonmalignant, delirious, and malignant) and four specifiers (secondary to: mood disorders, general medical conditions or toxic states, neurological disorders, or psychotic disorders) (4).

The most common treatment for catatonia is the benzodiazepines, which were first used to treat neuroleptic-induced catatonia (18), but were later shown to effectively reduce catatonic symptoms in schizophrenia, affective disorders, alcoholism and other brain diseases. In 1996, Bush et al. (17) postulated that a positive response to initial parenteral lorazepam could predict final lorazepam effectiveness and Fink and Taylor (4) state that a challenge dose of lorazepam will confirm the diagnosis in 80% of patients.

It remains unclear

1. whether catatonia is a distinct syndrome or merely a subtype of another major psychiatric disorder, as per DSM-IV;
2. whether it is manifest more in one disorder than others;

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3. what its prevalence is in acutely ill psychiatric patients;
4. whether it is more common in Asian patients.

Although the catatonic syndrome is reportedly more common in India, there have been few studies (19,20) done there; hence we undertook a larger, systematic prospective study of the incidence of catatonic symptoms in the psychiatric population admitted to a general hospital, their association with DSM-IV diagnoses, and their response to intravenous lorazepam.

## METHODS

One hundred and thirty eight consecutive psychiatric patients admitted to a general hospital were administered the standard 14 item Bush Francis catatonia screening instrument (21). Patients who had two or more signs of catatonia, i.e., who met criteria for catatonic syndrome, were selected for further study. Informed consent was obtained from relatives of these catatonic patients in accordance with the accepted procedure for stuporous patients. Each patient then underwent a detailed physical, including neurological, examination and received a DSM-IV diagnosis based on a semi-structured interview once patients recovered during the course of their hospital stay. Patients were scored on the 23 item Bush Francis Catatonia Rating Scale (BFCRS) (21). After a baseline BFCRS score was obtained, patients were administered intravenous lorazepam: 1mg at intervals of 10 minutes, with careful monitoring of the patients' pulse and respiration. Patients were scored on the BFCRS at 15 min, 30 min, 1 hr, 4 hrs, 24 hrs and 48 hrs by the same investigator who had done the baseline scoring.

## RESULTS

The 138 inpatients, 94 males and 44 females, who were screened had a diagnosis of schizophrenia (n = 66), bipolar affective disorder current episode mania (n = 15), severe major depression (n = 7), acute and transient psychotic disorder including post-partum psychosis (n = 7), substance related disorders (n = 12), dementia (n = 4), Dissociative disorder unspecified (n = 3), organic mental disorder (n = 2), obsessive compulsive disorder (n = 1) and other diagnoses (n = 21). Of these 138 patients, 16 had two or more catatonic signs, thereby meeting criteria for catatonic syndrome, for an incidence of 11%. When these 16 patients with catatonic syndrome were classified according to DSM-IV, 9 patients satisfied criteria for schizophrenia, an incidence of 56%, with 2 patients being diagnosed as having post-partum psychosis and one patient each of bipolar disorder (manic phase), Organic Mental Disorder, Neuroleptic Malignant Syndrome, Dissociative disorder unspecified and Acute Stress Reaction. The incidence of catatonic syndrome in schizophrenia (13.6%) was significantly higher than in bipolar disorder (6.6%). The most common catatonic symptoms are reported in Table 1.

After the administration of lorazepam (range 2–4 mg, mean dose 2.9 mg), an immediate partial improvement was seen in 15 of

**Table 1** Description and Incidence of the Most Common Catatonic Symptoms Observed in the Sample

Catatonic Symptom	Description	Incidence (%)
Mutism	Verbally unresponsive or minimally responsive	87.5
Stupor/ immobility	Extreme hypoactivity, immobile, minimally responsive to stimuli.	69
Staring	Fixed gaze, little or no visual scanning of environment, decreased blinking.	63
Negativism	Apparently motiveless resistance to instructions or attempts to move/ examine patients. Contrary behaviour, does exact opposite of instruction	63
Posturing/ catalepsy	Spontaneous maintenance of posture (s), including mundane (e.g. sitting or standing for long periods without reacting)	56
Withdrawal	Refusal to eat, drink and/or make eye contact.	38

16 patients. The remaining patient, who showed a response after 3–4 hours, was diagnosed as having tuberculous meningitis after examination of his CSF. The percentage improvement on the BFCRS varied from 100% in two patients to less than 25% in 2 patients. A significant majority, i.e., 14 patients, showed more than 50% improvement. 12 patients (75%) showed sustained improvement; however, in the remaining four patients, improvement was lost in 30 minutes, 1 hour, 1 day and 2 days respectively.

Individual symptoms most likely to improve were automatic obedience and *geganhalten* (100%), withdrawal (83%), immobility and stupor (73%), posturing (55%), mutism (43%) and staring and negativism (40%). An interesting finding was the emergence of grimacing, excitement, combativeness and echolalia in one patient.

## DISCUSSION

To our knowledge, this is the largest study of the frequency of catatonia and its response to lorazepam challenge on a psychiatric inpatient unit of a general hospital. Previous studies had smaller samples (20,22), were conducted in psychiatric hospitals (23), restricted their focus to schizophrenia (23,24) or did not use the lorazepam challenge (20,23,24). For instance, van der Heijden et al. (23) studied the frequency of catatonic schizophrenia in 13,309 patients and the frequency of catatonic symptoms in 701 schizophrenic patients as well as 139 psychotic patients but did not evaluate catatonia in all patients. Eleven percent of our 138 admitted patients exhibited a catatonic syndrome, which is consistent with findings of 13.5% from a small recent study in India (20) and from studies in the West, which found an incidence of approximately 10%, with a range of 7.6–38% (3,20,22).

Several expectations based on the previous literature were not supported by our results. It has been reported that in patients with schizophrenia, the catatonic subtype is more common among Asian patients (16,25) and an earlier Indian study by Carpenter et al. (24) found an incidence of 23%; however, only 13.6% of patients with schizophrenia in our Mumbai sample were catatonic. It has also been reported that 28% of bipolar patients in their manic phase will meet criteria for catatonic syndrome (14), however only 6.6% of our sample did. Another study found 20% of severely depressed elderly patients were catatonic (26) but none of our 7 depressed patients were catatonic.

Further, based on a review by Taylor and Fink (3), we expected that the majority of patients with catatonia would have a diagnosis other than schizophrenia. They calculated that of all catatonic patients, 50% would be bipolar and only 10–15% schizophrenic, lending support to their call for catatonia as a distinct syndrome that is separate from schizophrenia. One of the studies they cite is by Bush et al. (17), who found that 62% of catatonic patients were manic and 16% had an Organic Brain Disease as compared to only 7% with schizophrenia. In our study, however, there was a preponderance of schizophrenics (56% versus 6.6% bipolar), consistent with the older notions of Kraepelin, Bleuler, DSM-III and a study by Chandrasekharan (19).

Consistent with earlier reports (20,27), symptoms of stuporous catatonia were more common than symptoms of excitement. This could be the natural distribution or the result of the medical system in Mumbai: we postulate that symptoms of excitement are more troublesome to caretakers and these patients are more difficult to transport. Excited patients are therefore quickly treated at the primary care level and often do not reach a tertiary hospital such as the one in which this study was conducted. This could have resulted in the over-representation of stuporous symptoms in this study. The most common features we observed were mutism, immobility, staring, maintaining mundane postures, apparently purposeless refusal to comply with requests, withdrawal from the external world and refusing to maintain minimal oral intake of food. Our findings suggest that, diagnostically, it is necessary to recognize these symptoms as belonging to the catatonic syndrome rather than looking for “classic” features like waxy flexibility or gegenhalten, which are more dramatic but less common. A complete neurological examination can help elicit signs like grasp reflex, gegenhalten, stereotypies, and mannerisms. Thus, although the full-blown, dramatic picture of catatonia is not common, the catatonic syndrome—with just two or more symptoms—is frequent but often missed. Equally importantly, catatonic syndrome is not restricted to schizophrenia and is seen in a wide array of conditions, including mania and depression, as a consequence of taking common medications such as azithromycin (6) and levetiracetam (7) and in neurological diseases (3,8). It is important to detect because treatment can then be more specific (benzodiazepine or ECT) and effective (3,4,17,19,22,27). While benzodiazepines or ECT effectively treat catatonic

symptoms, our experience and numerous studies indicate that the underlying disorder, e.g., affective disorder, schizophrenia or neurological disease, must also be aggressively and appropriately treated.

In our study, 87.5% of the catatonic patients treated with lorazepam showed more than 50% improvement and 75% sustained improvement over the two day follow up. A number of recent open trials suggest the next steps when the usually reliable benzodiazepines and ECT are not effective or lose their effect. Both second generation antipsychotics and anti-epileptic mood stabilizers can be considered. ECT and olanzapine was helpful in the treatment of a patient with catatonic stupor (12). Two schizophrenia patients with recurrent catatonia initially responded to lorazepam and ECT. Later, when this became ineffective, they did well on clozapine over a two year follow up (28). Dursun et al. (29) also treated a patient successfully with clozapine and suggest that clozapine could be the treatment of choice for catatonia. However, clinicians need to beware of antipsychotics precipitating a malignant syndrome in patients with catatonia (4). Four patients refractory to lorazepam and divalproex had a sustained remission on topiramate (11). Nine patients who showed an inadequate response to lorazepam were treated with carbamazepine. Four had complete resolution of their catatonic symptoms and one had a partial response (30). Based on the theoretical role of glutamate, Carpenter (13) used memantine, up to 10mg, and reports a rapid, significant decrease in the catatonic symptoms of an elderly man with schizophrenia. More rigorous studies are indicated.

Our results suggest that intravenous lorazepam in catatonic states is most often quickly effective and long lasting. In a mute, negativistic patient it may make possible—or allow completion of—an interview by enabling the patient to be more co-operative and communicative, so that a diagnosis can be reached. The patient also may resume oral intake so that intravenous supplementation or catheterization becomes unnecessary, thus reducing the potential risk of metabolic complications and infections. Further, by decreasing catatonic symptoms valuable time may be saved in getting informed consent from the more cooperative patient for treatment with additional psychotropics or ECT, if necessary.

It should be emphasized that the catatonic syndrome is not rare (about one in ten psychiatric patients) in the acute general hospital setting but merely under-recognized. Even within the schizophrenia group, Van der Heijden et al. (23) found that the diagnosis of catatonic schizophrenia had dropped from 7.8% in 1980–1989 to 1.3% in 1990–2001 in a survey of 19,309 Dutch patients and that 18% of 139 psychotic patients met criteria for catatonia when they did a careful evaluation. They suggest that systematic criteria are not consistently applied and could be the reason for the reported low incidence of catatonic schizophrenia worldwide. They emphasize a need to change our procedures and diagnostic criteria to avoid underdiagnosis of catatonia. Fortuitously, it has been common practice over the past decade to use an antipsychotic plus a benzodiazepine

(often lorazepam) for initial control of a psychotic patient (31) irrespective of the diagnosis; this may have helped these patients even when the clinician may not have made the diagnosis of a catatonic syndrome. However, this combination of medications is most often used for agitated or violent patients (32) and patients with the more common catatonic symptoms of mutism, stupor, staring and negativism may indeed be missed and therefore not treated with a benzodiazepine. Left unattended, these negative catatonic symptoms can add to the disability of the individual and worsen quality of life, generating a vicious cycle of exacerbations. Given its high incidence and likelihood of being missed, a heightened awareness of this possibility in a wide range of diagnoses (other than but including schizophrenia), leading to early recognition and quick relief from catatonic symptoms can help in improving clinical outcomes of a tenth of all patients acutely admitted to our hospitals.

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