Original Article

The Phenomenology and Treatment Response in Catatonia: A Hospital Based Descriptive Study

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ABSTRACT

Background: Literatures regarding clinical symptomatology and treatment response of catatonia are very few. **Objective:** To assess onset, clinical profile, diagnostic break up, treatment response and outcome in patients diagnosed as Catatonia, reported to a tertiary care hospital. **Methods:** The present study was a cross-sectional descriptive study conducted in indoor of Mental Health Institute (Centre of Excellence), S.C.B. Medical College, between March 2015 to March 2016. A total of 34 patients were included in the study who reported at outdoor department of Mental Health Institute with catatonic symptoms. All patients admitted in inpatient department were routinely assessed through a detailed semi-structured interview. The diagnosis of catatonia was made if the patients present with three or more symptoms out of twelve symptoms fulfilling the criteria of DSM-5. All the patients were assessed through Bush-Francis Catatonia Rating Scale. They were initially given parental lorazepam at the doses ranging from 4-12 mg per day as per requirement. Patients who did not respond to lorazepam trial were given ECT. **Results:** The patients were predominantly presented with retarded symptoms of catatonia such as staring, mutism, withdrawal, posturing and negativism. Schizophrenia and other psychotic spectrum disorders were more commonly presented as catatonia as compared to mood disorders. Younger age group patients were mainly responded to lorazepam only, whereas older age group patients responded to both ECT and lorazepam. **Conclusion:** This study has came out with very important insights in the age of incidence, phenomenology, clinical profile, source of referral, diagnostic break up and treatment response with lorazepam and ECT in catatonic patients following mental disorder.

Key words: *Bush-Francis Catatonia Rating Scale, catatonia, Diagnostic and Statistical Manual of Mental Disorders – 5th Edition Criteria, electroconvulsive therapy, lorazepam, phenomenology*

INTRODUCTION

The term "Catatonia" was first described by Karl Ludwig Kahlbaum in the year 1874 in his book named "Die Catatonia" in which he clustered 17 motor abnormalities into a single syndrome in

Access this article online	
Website: www.ijpm.info	Quick Response Code
DOI: 10.4103/0253-7176.207338	

How to cite this article: Swain SP, Behura SS, Dash MK. The phenomenology and treatment response in catatonia: A hospital based descriptive study. Indian J Psychol Med 2017;39:323-9.

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patients suffering from disorders in mood, psychosis, tuberculosis, and epilepsy.[1] In subsequent years, Emile Kraepelin recognized the catatonic state in a group of population of chronic mentally ill and adopted the term catatonia as one of the cornerstones of his entity of dementia praecox.[2]

Currently, catatonia is described as a syndrome of motor abnormalities associated with disorders of mood, behavior or thought. It is reported to occur as a presenting complaint in 7%–15% of acute psychiatric inpatients.[3,4] Various authors have classified catatonia as acute or chronic, recurrent or periodic catatonia, as an independent syndrome or those occurring in association with psychiatric, neurological and medical illnesses.[5,6] After 135 years of birth of catatonia, now it is recognized as a well identifiable in Diagnostic and Statistical Manual of Mental Disorders – 5th Edition (DSM-5) making catatonia (293.89 [F06.1]) as a single diagnostic entity.[7]

Most of the data are in the form of case reports in which catatonia due to various causes has been reported.[8-10] In previous Indian studies, it has been observed that catatonic signs were present in nearly 40% of in-patients diagnosed with mood and psychotic disorders, a significance proportion of which were Schizophrenia and Acute and Transient Psychotic Disorders.[11] Another cross-cultural study has found that incidence of catatonia is 13.5% in inpatient admission in India, which is higher than that observed in Wales (9.6%).[12] However, the incidence of catatonia differs in different study populations in different inpatient settings.

In some Indian studies on phenomenology of catatonia, the most commonly seen catatonic symptoms observed in India were mutism, immobility/stupor, staring, negativism, rigidity, posturing/catalepsy and withdrawal.[8] In a cross-cultural study by Chalasani *et al*. it was observed that retarded catatonia (12.5%) and some classical signs such as posturing, catalepsy, staring, and stupor were more frequent among psychiatric admissions in India than Wales.[12] In other studies on phenomenology of catatonia, Seethalakshmi *et al*. reported mutism (87.5% incidence) was the most common observed symptoms in catatonia.[13]

There are also very few studies available that have investigated the precipitating factors, treatment response and association of psychiatric illness with catatonia.[14] Unfortunately, catatonia is often inadequately recognized in most of the cases since it is often overshadowed by medical and neurological disorders.[14,15] Considering the wide variety of catatonia signs and symptoms, a number of rating scales have been developed to assist its identification including Bush-Francis Catatonia Rating Scale (BFCRS) and the modified Roger's Rating Scale.[16,17] A positive test result in the rapid relief of catatonic symptoms by lorazepam challenge test may indirectly assist in the evaluation of catatonia albeit usually transiently.[18] Benzodizepines have been used to effectively treat catatonia, and these medications should be considered as a first-line treatment especially because of their limited adverse side effects profile. Certain parameters like excessive sedation, respiratory depression, and other adverse effects on the central nervous system should be carefully monitored while using high dose of benzodiazepines.[19]

Electroconvulsive therapy (ECT) is considered for those cases with catatonia where lorazepam fails as a treatment modality for improvement in catatonic symptoms or brings benefits but not complete remission or when there is nonresponsiveness to lorazepam treatment.[20]

The role of psychotropics more commonly the second generation antipsychotics (SGA) have been suggested and studied in the treatment of catatonia, when there is a history of chronic psychotic illness or when the patients exhibit psychotic symptoms or signs in addition to catatonic signs.[21,22] The various SGA, the role of which had been studied in catatonia are olanzapine,[23,24] risperidone,[25] clozapine,[26] and aripiprazole.[21]

Objective of the study

To assess phenomenology, clinical profile, diagnostic break up, source of referral, treatment response and outcome in patients diagnosed as catatonia, reported to a tertiary care hospital.

MATERIALS AND METHODS

Setting

The present study was conducted at Mental Health Institute (MHI), SCB Medical College, Cuttack, Odisha, India. The diagnosis of catatonia was made if the patients present with three or more symptoms out of twelve symptoms fulfilling the criteria of DSM-5. The sociodemographic data were collected and BFCRS was administered in all admitted patients.

All patients diagnosed as catatonia following another mental disorder were given parental lorazepam in the doses ranging from 4 to 12 mg/day as per requirement. Patients who did not respond to lorazepam trial, or when lorazepam treatment brings benefits but not complete remission or relapse of symptoms even after receiving an adequate trial of lorazepam, were given ECT. Once the patient recovered from catatonia, subsequently they were evaluated for lifetime psychiatric illness either

at the time of discharge or in follow-up visits after detail evaluation. It was a cross-sectional descriptive study conducted at MHI between March 2015 and March 2016 where 34 patients were selected after the diagnosis. Purposive sampling method was used for selecting the patients for the study.

Tools used

1. Sociodemographic data sheet: A structured Performa was developed and used in this study to collect information about various sociodemographic variables, i.e., age, sex, education, religion, occupation, marital status, diagnosis, a precipitating factor of illness, duration of stay in hospital, treatment given and outcome of the catatonia patients
2. DSM-5 criteria for the diagnosis of catatonia[7]
3. BFCRS: This is a 23 items clinician rated scale. The initial 14 items are used for screening and include most of the common catatonic signs like immobility/stupor, mutism, posturing, and staring as well as several classical signs (e.g., waxy flexibility, mannerisms, echophenomena). It has a high reliability.[27] Each item is scored on a 0–3 point scale to rate the severity of catatonia.

Statistical analysis

Categorical variables were analyzed using frequency and percentages. Continuous variables were analyzed by mean and standard deviation. "*t*-test" was used to find out the significance difference between treatment response and variables of age, duration of illness and hospital stay and BFCRS. Data analysis was done by SPSS, version 11.0 (SPSS Inc., Chicago, Illinois, USA).

Ethical clearance

Institutional Ethics Committee clearance was obtained before the commencement of the study.

RESULTS

The mean age of the study population was 26.2 ± 10.5 years (range 12–56 years) with gender distribution of 19 males and 15 females. The majority of the patients (n = 27, 80%) were from lower socioeconomic status and all belonged to Hindu religion. Most of the patients (n = 29, 85%) were from rural domicile, studied up to 10th class or less (n = 26, 76%). All the adolescent patients were students (n = 5, 15%). Among the rest 29 adults, 17 patients were unemployed and remaining 12 patients were self-employed. Of 36 cases, included for the study, 2 cases dropped out.

Figure 1 shows the different sources of referral to the psychiatric hospital, where the majority of cases (n = 23; 67%) reported directly to psychiatry

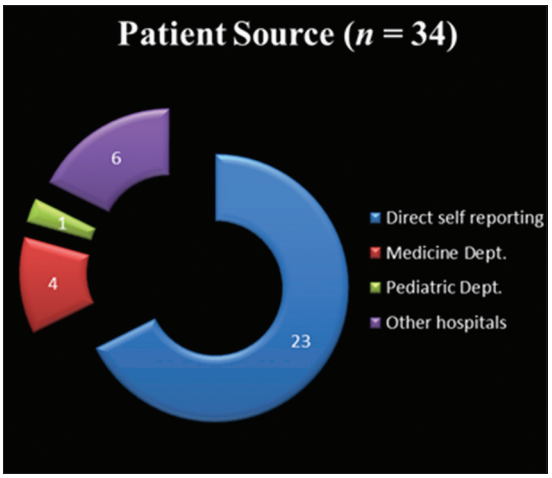

Figure 1: Sources of referral of patients

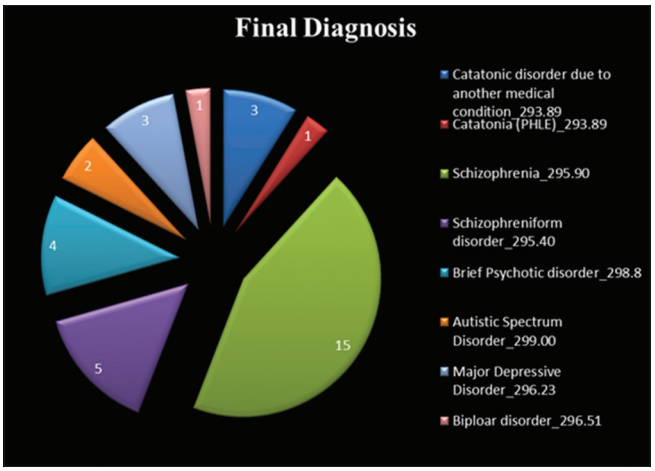

Figure 2: Final diagnosis of catatonia patients admitted in indoor

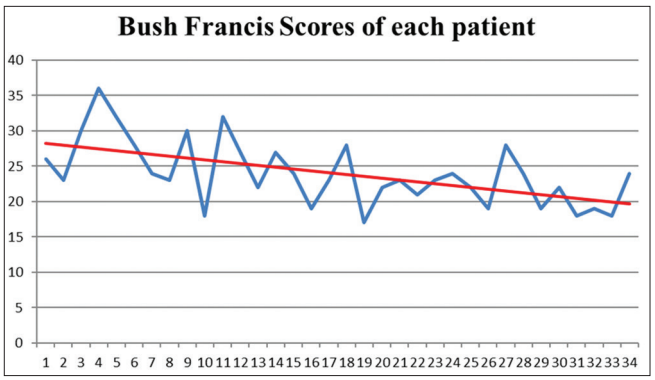

Figure 3: Bush-Francis Catatonia Rating Scores of patients after admission into indoor

hospital. The mean duration of illness before clinical examination and consultation at psychiatric hospital was 13.2 ± 7.5 days (range: 3–30 days). The precipitating stressor before the onset of illness could be identified in 75% of cases. Figure 2 shows the final diagnosis of the patients after admission into the inpatient department with diagnosis of catatonia. Among all the

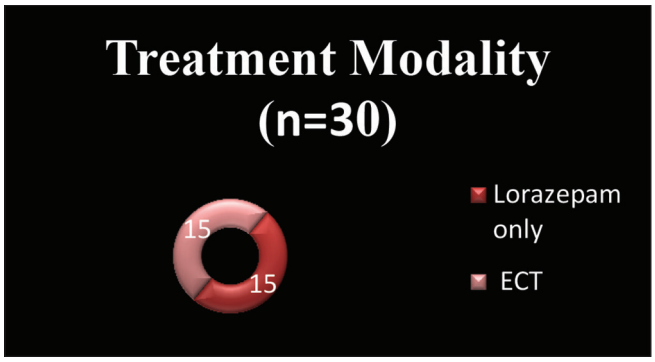

Figure 4: Treatment modality of the patients diagnosed as catatonia

catatonia patients, schizophrenia (n = 15, 45%) was the most common diagnosis after evaluation in the study population.

Figure 3 shows the BFCRS for screening and rating of catatonia which was administered to all the cases on the 1st day of admission. The mean BFCRS score was 29.78 ± 5.88 (range: 17–36). The commonly seen catatonic symptoms which were observed in the study population were mutism, staring, negativitism, rigidity, posturing/catalepsy, mannerism, and withdrawal. The other features of catatonia were observed less frequently [Table 1]. Figure 4 shows that 50% (n = 15, out of 30) of cases responded well to lorazepam only, whereas the rest 50% (n = 15 out of 30) of patients required ECT after nonresponse or partial response to lorazepam and the remaining 4 cases after diagnosis with catatonia following medical condition were referred to Medicine Department.

Subsequently most of the patients (n = 26, 87%) were treated with antipsychotics, who had shown the psychotic behavior after improvement of the catatonic symptoms. Among various antipsychotics, atypical antipsychotics were used more commonly. Olanzapine (50%) was most commonly used antipsychotic medication followed by arpiprazole (34%), risperidone (15%), and clozapine (1%). Antidepressants were used in 3 cases, and mood stabilizer was used in one case.

When the age, duration of illness before admission, BFCRS and hospital stay was analyzed between the two groups (lorazepam and ECT), differences were seen in the two groups. The patients responding to only Lorazepam were about a decade (11 years) younger compared to those needing ECT. Likewise, the hospital stay was a week (7 days) less in those responding to lorazepam compared to those needing ECT. Both the above difference was found to be statistically significant. Difference was also noted in the two groups in duration of illness before admission, with those needing ECT having an average 27 days longer duration of disease compared to lorazepam responders. There was difference of 2.7 units in the BF score in between the two, which was negligible [Table 2].

Table 1: Phenomenology of catatonia patients by Bush-Francis Catatonia Rating Scale at the time of admission

Bush-Francis Scale item	Percentage
Excitement	2.9
Immobility	67.6
Mutism	100
Staring	100
Posturing/catalepsy	100
Grimacing	41.2
Echopraxia/echolalia	29.4
Stereotypism	64.7
Mannerism	70.6
Verbigeration	8.8
Rigidity	94.1
Negativism	100
Waxy flexibility	58.8
Withdrawal	100
Impulsivity	61.8
Automatic obedience	47.1
Mitgehen	11.8
Gegenhalten	5.9
Ambitendency	26.5
Grasp reflex	8.8
Perseverance	11.8
Combativeness	67.6
Autonomic abnormality	58.8

Table 2: Treatment response with variables of age, duration of illness and hospital stay and Bush-Francis score

Treatment method	*n*	Mean	*t*	df	*P*
Age					
ECT	15	31.27	3.154	17.78	0.006*
Lorazepam only	15	20.27			
Duration of illness prior to admission					
ECT	15	38.00	1.750	14.38	0.101
Lorazepam only	15	10.87			
Bush-Francis score					
ECT	15	25.07	1.743	28	0.92
Lorazepam only	15	22.33			
Hospital stay					
ECT	15	20.47	3.683	28	0.001*
Lorazepam only	15	12.20			

*$P<0.05$ (statistical significance at 0.05 level). ECT – Electroconvulsive therapy

Table 3: Role of electroconvulsive therapy in negativism

Negativism score	Lorazepam responders (%)	ECT responders (%)	Total (%)	χ^2	*P*
≤2	12 (66.67)	6 (33.3)	18 (100)	5.00	0.025*
3	3 (25)	9 (75)	12 (100)		
Total	15 (50)	15 (50)	24 (100)		

*$P<0.05$ (statistical significance at 0.05 level). ECT – Electroconvulsive therapy

Among the patients having features of negativitism, a significant association was observed between the negativism score and the need for ECT. The proportion of patients needing ECT was higher with higher negativism score, which was one of the promoinent observation in the study [Table 3].

DISCUSSION

This study is the unique one which was conducted in a developing country at a Tertiary Care Cum Mental Health Training Institution that serves the Eastern Parts of India. From this study, it was concluded that catatonia was occurring in all ages but most prevalent in young adults in late 20s. However, it can occur in adolescents and late adulthood also.[28] Catatonia was found in equal proportions in both males and females with preponderance with educational level of 10th class or less, belonged to rural domicile, which is consistent with other studies.[11,14] Few patients (11%) had a family history of psychiatric illnesses, which suggest a possible genetic etiology, which is comparable with other studies.[19]

The clinical profile of the sample with respect to age of onset, sex, family history, and precipitating stressor was compared with the other studies done in India and other parts of the world.[11,12,19] In this study, the precipitating event before onset of catatonia symptoms were found in significant number of cases and with majority of them were having prior history of fever, death of family members, family conflicts, found out to be the precipitating events.

Most of the patients after development of catatonia were directly reported by the caregivers to the outpatient department which indicates the seriousness of the disease entity and responsiveness of the caregiver. Other cases which were admitted to the other departments were referred to mental health department after the deterioration of the physical and mental conditions of the patients in those departments. This indicates the proper diagnostic dilemma of catatonia among the physicians of other departments.

The phenomenology and clinical profile which was observed to be present in most of the patients were mainly retarded symptoms of catatonia such as staring, mutism, withdrawal, posturing, and negativism, which were found more commonly than other symptoms which is consistent with the findings of other studies done in India indicating that retarded catatonic symptoms are more common in India in contrast to Wales.[12] In another Indian study, mutism, stupor, staring and negativism were the predominant findings in catatonic patients.[8]

In the process of diagnosis of catatonia (i.e., in the subsequent follow-up visits) all kind of psychiatric illness such as schizophrenia spectrum disorder, mood disorder, depressive disorder, and organic brain disorders were the final diagnosis which supports the fact that catatonia being an illness of multifactorial etiology.[6,13,29] In our study, schizophrenia and other psychotic spectrum disorders were more commonly presented as catatonia as compared to mood disorders. However, it is in contradiction with the studies done in other parts of the world, and it supports with many Indian studies done earlier.[12,19] Catatonia as a syndromal diagnosis requires long term follow up, for which in most of the cases the etiopathological diagnosis is not possible even after the time of discharge.[30,31] These patients presented with exclusive catatonic symptoms without any identifiable positive or associated disorder despite close observation in the ward. Although the diagnosis of catatonia was being made by DSM-5 criteria, the ultimate diagnosis was given in the indoor after detailed history, ward observation, necessary investigations, and detailed mental status examination after an improvement in the catatonic symptoms. In very few cases, final diagnosis had been made in the subsequent follow-up visits.

The previous studies have indicated the usefulness of lorazepam in the treatment of catatonia for improving the symptoms, more specifically catatonia following another mental disorder.[8,13,19] This present study supports the lorazepam challenge notion in the improvement of symptoms of catatonia. Although lorazepam was given to all the patients in the tapering doses, our study findings showed 50% of the patients were lorazepam responders and other 50% of the patients after becoming nonresponders or partial responder to lorazepam, were treated effectively with ECT. Among the lorazepam responders, it was observed that younger the age better was the response. The use of ECT in the treatment of catatonia irrespective of the diagnosis is supported by the literature demonstrating the effectiveness of ECT in catatonia due to various psychiatric disorders.[19,20] The response of ECT was more promising in higher age group and having the sign of negativism which are the uniqueness of our study findings.

All medications should be evaluated properly for their potential to cause catatonia and should be discontinued if possible. Both typical and atypical antipsychotic use should be discouraged in the initial phase of catatonia.[32,33] However, after improvement of catatonic symptoms, either with lorazepam or ECT, there is certain role of SGA or newer antipsychotics like aripiprazole to improve the psychotic symptoms of schizophrenia or psychotic states of other psychotic disorders and mood disorders.[34,35] Similarly, the

patients of depression or mood disorder should be treated with antidepressants or mood stabilizers in subsequent phases after improvement of catatonic symptoms.[22,34,36]

CONCLUSION

This study has come out with very important insights in the phenomenology, clinical profile, diagnostic break up and treatment response with lorazepam and ECT in catatonic patients following mental disorder. Catatonia is frequently diagnosed the condition in both adolescents and adults in India. Catatonic patients irrespective of the psychotic or medical origin report directly at tertiary care center. Catatonia is more commonly associated with schizophrenia and other psychotic disorders than mood disorders in this part of the world. Catatonia following any mental disorder has a better prognosis either with lorazepam or with ECT or with atypical antipsychotics (for postpsychotic state after catatonia) because all the patients in this present study group responded well to the treatment. The observation of patients in the ward, interdepartmental referral and subsequent follow-up visits had made the diagnosis and management easier.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

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