

## Original Research Article

# Clinical correlates of first episode schizophrenia-a comparative study

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### ABSTRACT

**Background:** Schizophrenia is a major mental disorder which has to be assessed early and managed actively even though long term functional outcome remains relatively poor. The aim of the study is to analyze negative symptoms, suicidal risk and substance use in first episode schizophrenics in comparison with multi-episode schizophrenics.

**Methods:** 30 patients with drug naive first episode schizophrenia and 30 patients with multi episode schizophrenia, who attended the outpatient department of Psychiatry, Government Stanley Medical College, Chennai, Tamilnadu, India were studied to compare predisposing factors and spectrum of symptoms for Schizophrenia for a period of one year (January 2010-December 2010). Psychiatric questionnaire by Michael C. Hilton, DAST by Harvey A. Skinner, AUDIT by WHO, Suicide risk scale by National Health and Medical Research Council, PANSS by SR Kay were used to assess patients.

**Results:** Unemployment and family history of suicide attempts were observed more in drug naive first episode schizophrenics. 90% of these patients had completed their primary education while 47% of multi-episode schizophrenics were illiterates. Positive symptoms (delusions, hallucinatory behaviour and suspiciousness) and negative symptoms (blunted affect, emotional withdrawal and social withdrawal) were observed more in first episode schizophrenics while PANSS, DAST, AUDIT scores did not find any differences between both the groups.

**Conclusions:** In our study, the first episode schizophrenia patients were more educated, more unemployed and had more family history of suicide, elevated sub score of positive symptoms as measured by PANSS. Relative assessment of violence and serious behavior problems that are related to positive symptoms must be done and managed with anti psychotics.

**Keywords:** First episode, Negative symptoms, Positive symptoms, Schizophrenia

### INTRODUCTION

Schizophrenia is a major mental disorder which usually starts in adolescence or early adult life and often has a chronic disabling course. It is characterized in general by fundamental and characteristic distortions in form and content of thinking, perception, mood and behaviour. The signs and symptoms are diverse encompassing almost every aspect of cognition and behavior and are generally characterized as positive and negative.

The estimate for the global burden of disease 2000 study published in the world health report 2001, schizophrenia was the seventh leading cause of years lost on disability at global level, accounting for 2.8% of total global years lost on disability.<sup>1</sup> The interest in investigating the first episode schizophrenia and related disorders provide an opportunity to understand the heterogeneity of psychopathology of this disorder and its outcome. Short term functional outcome improves after treatment of the first episode, but long-term outcome remains relatively

poor for a substantial portion of patients and this is associated more with pre-adolescent onset, poor pre morbid adjustment, poor cognitive function and negative symptoms.

Since primary prevention has not been very successful, early assessment and specific management is required. Schizophrenia is frequently associated with co-morbidities and the outcome in Schizophrenia is determined by variables like substance use, suicide, associated medical illness, co-morbid psychiatric illness, response to treatment and adherence to treatment. Now the illness is more understood on a dimensional perspective and each variable is influencing the outcome. Studies of the important variables like negative symptoms, suicide and substance use in early illness gives us an opportunity to use specific assessment and management strategies to improve the outcome and to help recovery. During first episodes of psychosis, negative symptoms that meet criteria for primary negative symptoms show a relatively low prevalence but studies show that progression of negative symptoms over one year, increased significantly. One of the challenges in investigating psychopathology in first episode psychosis is the status of negative symptoms in long run.<sup>2,3</sup> Studies suggest that secondary prevention of the negative symptoms can be effected by effective treatment of patients in first episode psychosis.<sup>4</sup>

When academic deterioration is more pronounced during adolescence, it could represent an important marker for the later onset of schizophrenia.<sup>5</sup> Social premorbid symptoms were predictive of negative symptoms and are correlated with poor response and severe negative symptoms.<sup>6</sup> Treatment delay may affect chance of recovery.<sup>7</sup> Presence of certain socio-demographic features like marital status and employment status, as well as overall functioning and level of insight, influence severity.<sup>8</sup> Different pattern of prodromal symptoms between male and female begin before the onset of psychosis.<sup>9</sup>

Studies on the predictive value of neuro-cognition and negative symptoms, on functional outcome in schizophrenia, have found that verbal memory, processing speed and attention are potential targets of psychosocial intervention to improve outcome.<sup>10</sup> Negative symptoms responded to standard narcoleptic treatment, but the improvement was less marked than that in positive symptoms. This highlights the importance of negative symptoms in the assessment and treatment of both acute and chronic schizophrenia.<sup>11</sup>

Studies on substance abuse co-morbidity in Schizophrenia have found that substance abusing schizophrenics responded significantly better than non-substance abusing schizophrenics and showed a faster rate of remission of their symptoms.<sup>12</sup> But studies on drug and alcohol misuse in schizophrenics, have found drug misuse to have a negative impact on the outcome of first

episode psychosis.<sup>13</sup> Smoking was associated with fewer extra pyramidal symptoms and smoking might improve attention and working memory to a similarly modest extent as atypical antipsychotics. It could reflect an effort to improve cognitive dysfunctions previous to treatment initiation.<sup>14</sup>

Studies analyzing suicide in first episode psychosis have found that monitoring insight should be a part of assessment of suicide risk in patients with first episode psychosis. Treating depression and counteracting negative beliefs may possibly reduce the suicide.<sup>15</sup> Individual placement and support has good potential to address the problem of vocational outcome, in people with first episode schizophrenia. This has economical, social and health implications.<sup>16</sup> A ten-year study on outcome of employment in schizophrenics concluded that 40% of patients could obtain employment, which prevented deterioration of health in these patients, while unemployment was a risk factor for more relapses.<sup>17</sup>

This study focuses on symptom complex in first episode schizophrenics which can help in identifying severity of illness and effective treatment. The aims of the study were to assess the negative symptoms in persons with first episode schizophrenia in comparison with multi-episode schizophrenia, to study substance use in persons with first episode schizophrenia in comparison with multi episode schizophrenia and to evaluate the suicidal risk among persons with first episode schizophrenia.

## METHODS

This was a prospective observational study performed at the Department of Psychiatry, Government Stanley Medical College, Chennai, Tamilnadu, India which is a tertiary care teaching hospital. During the study period of one year from January 2010 to December 2010, 30 patients with drug naive first episode schizophrenia and 30 patients with multi episode schizophrenia were studied to compare predisposing factors and spectrum of symptoms for Schizophrenia. Male and female patients who satisfied the criteria for WHO ICD 10-F20 schizophrenia and who were willing to provide informed consent were included in the study.<sup>18</sup> Uncooperative patients and those who refused to participate or provide informed consent were excluded from the study. General information of the patient was collected in a proforma and information on psychiatric illness was collected in psychiatric questionnaire developed by Michael C. Hilton.<sup>19</sup> Drug abuse screening test (DAST) developed by Harvey A. Skinner, alcohol use disorders identification test (AUDIT) developed by WHO, Suicide risk scale developed by National Health and Medical Research Council, Positive and negative syndrome scale (PANSS) developed by SR Kay et al.<sup>20-24</sup> were used to assess the patients. Data entry and analysis were done using SPSS software version 17.0. Descriptive data were given in summary statistics while statistical analysis were done using chi square test ( $\chi^2$ ) for categorical variables and

student t-test for comparison of data.  $p < 0.05$  was considered significant.

**RESULTS**

A total of 60 patients (30 each with drug naive first episode and multi episode schizophrenia) were evaluated. 15 male patients were included in first episode schizophrenia while 14 male patients were included in multi episode schizophrenia. Around 60 % of the patients

with first episode schizophrenia ( $n=18/30$ ) had completed their primary education while almost half of the multi-episode schizophrenia patients were illiterates ( $n=14/30$ ) (47%). Almost 90 % of patients ( $n=27/30$ ) with first episode schizophrenia were unemployed ( $p=0.003$ ). Age, Sex, marital status, living conditions, religion, family history of emotional problems, personal history, social history, psychiatric history, alcohol intake and medical problems had no significant difference between the two groups.

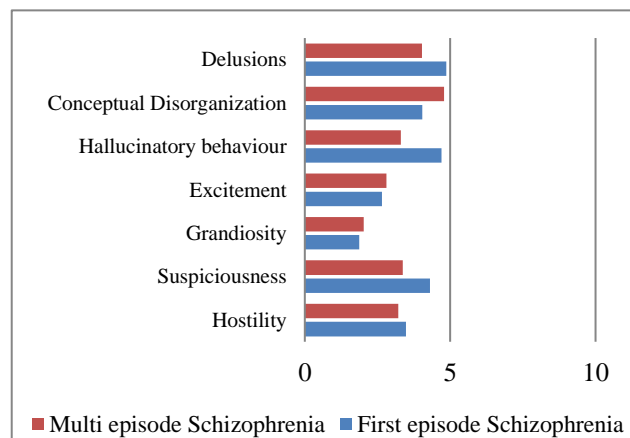
**Table 1. Comparison of variables between first episode and multi episode schizophrenics.**

Variable	First episode schizophrenia (n=30)	Schizophrenia more than one episode (n=30)	P value	Significance
Family history of suicide attempts	11/30	4/26	0.037	Significant
Unemployment	27/30	16/30	0.003	Significant
Sex - male	15/30	14/30	0.796	Not significant
Positive symptoms	25.57 ± 5.20	23.00 ± 3.55	0.029	Significant
Negative symptoms	22.90 ± 7.44	25.47 ± 5.11	0.125	Not significant
PANSS score	93.7 ± 19.6	90.5 ± 12.8	0.462	Not significant
DAST score	37.40 ± 1.40	37.5 ± 0.86	0.741	Not significant
Audit total score	2.07 ± 4.19	1.27 ± 3.01	0.399	Not significant

The comparison of variables between the two groups is given in Table 1. Family history of suicide attempts was observed more in patients with first episode schizophrenia which was statistically significant ( $n=11/30$ ) ( $p=0.037$ ). The total scores of positive symptoms were associated more with first episode schizophrenia ( $25.57 \pm 5.20$ ) than in patients with multiple episodes and it was statistically significant. Of the positive symptoms, Delusions ( $4.87 \pm 1.19$ ), Hallucinatory behaviour ( $4.70 \pm 1.56$ ) and Suspiciousness ( $4.30 \pm 1.62$ ) were observed more in patients with first episode schizophrenia than multi-episode schizophrenics while excitement, grandiosity and hostility did not show any significant difference (Figure 1). Of the negative symptoms, blunted affect ( $4.30 \pm 1.06$ ), emotional withdrawal ( $4.20 \pm 1.00$ ) and social withdrawal ( $3.77 \pm 1.13$ ) were more common in patients with multi episode schizophrenia while poor rapport ( $4.47 \pm 1.33$ ) was more common with first episode schizophrenia (Figure 2). But the overall total scores of negative symptoms did not show any statistically significant difference between the two groups. Similarly, PANSS total score, DAST total score and AUDIT total score did not show any statistically significant difference between first episode schizophrenics and multi-episode schizophrenics.

**DISCUSSION**

In this study the prime objective was to characterize the demographic characteristics, clinical features and

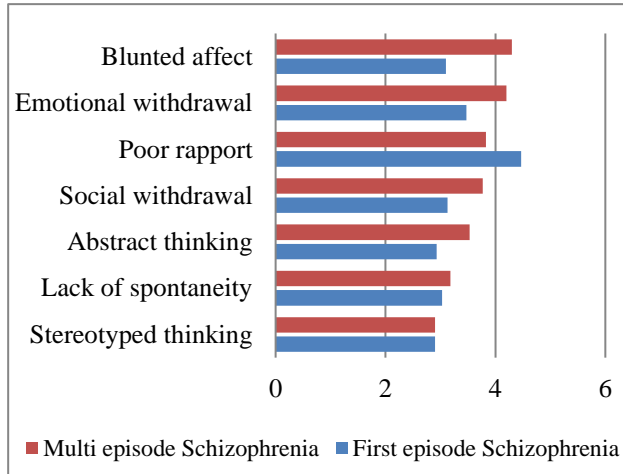


**Figure 1: Comparison of positive symptoms in First episode and multi episode schizophrenics.**

symptoms in patients with first episode schizophrenia in comparison with schizophrenia more than one episode. The sample was collected from a tertiary care facility and patients were clinically assessed after obtaining informed consent. The objective of characterizing the clinical profile of first episode schizophrenia becomes important given that the early recognition can facilitate early intervention and thus a favourable outcome.

Among the consecutive first episode schizophrenia patients enrolled, the sample included only drug naive patients and the duration of psychosis before enrolment ranged from one month to six months, with a mean of

3months and 6days. This group was compared with schizophrenia of more than one episode who presented to the tertiary care psychiatry unit consecutively. When the groups were compared, there was no statistically significant difference for age, sex, religion, marital status and living conditions.



**Figure 2: Comparison of negative symptoms in First episode and multi episode schizophrenics.**

In this study sample, first episode schizophrenia patients had completed primary and secondary level of education when compared with multi-episode schizophrenics. Patients with more than one episode were more often not educated. It is likely that the sample of first episode schizophrenia patients had better education status, which could have contributed to their help seeking behaviour in the psychiatry department, as almost everybody in the sample had approached treatment within 4months of symptom presentation.

In this study sample, the first episode schizophrenia patients were more often unemployed. Patients with schizophrenia more than one episode were often engaged in employment. This finding was similar to the observation made in a 10-year long term outcome study of first episode psychosis in Mumbai India.<sup>25</sup> In their study, 40% patients were able to find gainful employment over the period of time. It appears that work impairment is a significant feature in the early phase of the illness while treatment over time improves abilities of the schizophrenia patients to work gainfully in the community.

In this study sample, family history of suicide was more frequent in first episode schizophrenia patients when compared with multi-episode schizophrenics and this association was statistically significant ( $p=0.037$ ). Suicide is a major cause of premature death among patients suffering from psychiatry morbidity notably schizophrenia, bipolar disorder and major depressive disorder. Literature indicates that 10% of schizophrenia patients have completed suicide attempts.<sup>26</sup> It is also important to note that suicides run in families and risk of

suicide is shared by biological relatives, prompting the conclusion that familiarity of suicide may be greater genetically rather than environmental.

It is possible that first episode schizophrenia patients were not completely differentiated, even though the clinical presentation was that of schizophrenia, as defined by the ICD-10, it is only possible to affirm the diagnosis over the period of time. Longitudinal studies have indicated that some of the cases earlier diagnosed as first episode schizophrenia had turned out to be bipolar disorder. Given this background it is possible that the sample of first episode schizophrenia patients have more family history of suicide, where diagnosis is almost certain of schizophrenia. As suicide is an important adverse consequence, clinician must assess suicide behaviour in depth particularly in first episode schizophrenia with the family history. In this study, however we did not find differences in current suicidal behaviour between the two groups.

The drug naive first episode schizophrenia patients in this sample had more total positive psychopathology scores as measured by positive and negative symptoms scale when compared with multi-episode schizophrenics and that difference was statistically significant ( $p=0.0294$ ). The study done in Germany that compared the psychopathological characteristics of first episode schizophrenia and schizophrenia more than one episode revealed that higher level of positive symptom sub score was found in first episode schizophrenia.<sup>27</sup> While the status of negative symptoms in first episode schizophrenia has always been challenging, the two groups in the present study were comparable for negative symptoms. This study assessed negative symptoms through PANSS as the sample contained only drug naive patients. These negative symptoms were primary negative symptoms as they were not influenced by extra pyramidal symptoms; but on the other hand, they could be related to symptoms of depression.

Review of literature related to negative symptoms in first episode schizophrenia shows that negative symptoms can be present in the early stage of the disease itself, with some patients presenting with negative symptoms. Some patients present with persistent negative symptoms while in some patient's negative symptoms are unstable. In those with enduring negative symptoms, it is usually related to long duration of untreated psychosis. The persistent negative symptoms are related to poor cognitive functioning, poor pre-morbid adjustment and poor response to treatment including second generation antipsychotics.<sup>2</sup> Studies indicate that reducing the duration of untreated psychosis by providing early recognition and intervention is likely to prevent negative symptoms psychopathology in first episode schizophrenia.<sup>28</sup>

It was also evident that this sample of patients with first episode schizophrenia predominantly had more positive

symptoms like delusion, hallucination and suspiciousness. Similar findings were found in a study from Czech Republic in whose sample, suspiciousness was observed in 82%, delusion in 77% and hallucination in 59% in first episode schizophrenia.<sup>29</sup> In the first episode schizophrenia patients, the combination of delusion, suspiciousness and hallucination are important and has to be actively managed clinically as it is well known that violence and serious behavioral problem are closely related to the above three symptoms.<sup>2</sup> This study emphasizes, that early recognition of symptoms such as delusion, hallucination and suspiciousness are important in the clinical management of paranoid schizophrenia. It was also observed that blunted affect, emotional withdrawal and social withdrawal were more often associated with multiple episode schizophrenia which can interfere with quality of life and independent living. As observed earlier, early recognition and intervention is the best method to prevent negative symptom psychopathology.

It is important to note that some of the negative symptoms seen in the group would have been secondary negative symptoms caused by the influence of anti psychotic medication that the patients were receiving. In this group, most people were on treatment with conventional first generation anti psychotics like haloperidol, chlorpromazine and trifluoperazine and thus extra pyramidal symptoms could have a bearing on the negative symptoms, which could only be elucidated by further studies. It is not uncommon to find negative symptoms, possibly primary negative symptoms in these drug naive patients. As work impairment was observed in the first episode schizophrenia patients in this sample, early efforts must be undertaken to offer vocational intervention for them. In a study, individual placement and support was found to have good potential to address the outcome of first episode schizophrenia.<sup>16</sup>

Even though many studies on first episode schizophrenia indicated the prevalence of substance abuse more in multi-episode schizophrenics, in our sample no difference was observed between the two groups for alcohol use and drug abuse. The two groups were compared for alcohol use using AUDIT (alcohol use disorders identification test) by WHO, and it was observed that alcohol use in general, was uncommon in these population. Only 3 (10%) of the first episode schizophrenia had a total score of more than 8 indicating harmful drinking in comparison to 2 patients with multi-episode schizophrenia. On the other hand, there was only one person in the first episode schizophrenia group to satisfy the criteria for alcohol dependence (total score >15) and none in the multi episode schizophrenia had alcohol dependence. This differentiates the two groups even though the difference was not statistically significant.

The two groups were evaluated for substance use with DAST (drug abuse screening test) but there was no significant difference between two groups in DAST. In

persons with first episode schizophrenia, 30% (n=9) and in multi-episode schizophrenia, 36% (n=11) admitted use of drugs other than those required for medical reasons. But both the groups did not report adverse consequences related to substance use.

This comparative study was carried out in the psychiatry department at a tertiary level hospital, thus the sample population was truly not representative of the community and thus one should be careful in generalizing finding of this study. Further only a total number of 30 patients were included in both groups. A larger sample size, recruiting cases from community could have been ideal. Given both groups of schizophrenia have a prolonged course, a longitudinal study design is more appropriate for characterizing the clinical characteristics and its impact on various spheres on individual, but such a follow-up study was not possible in the given time limits.

## CONCLUSION

Study finding revealed that the first episode schizophrenia patients were more educated, more unemployed and had more family history of suicide, elevated sub score of positive symptoms as measured by PANSS, such as delusion, hallucination and suspiciousness. On the other hand, patients with multi-episode schizophrenia had elevated sub score of the negative symptoms such as blunted affect, emotional withdrawal, and social withdrawal.

The present study gives valuable information in characterizing the demographic variables and clinical symptomatology of first episode schizophrenia. The preponderance of positive symptoms of paranoid nature must be taken cognizance of, while clinically assessing the first episode schizophrenia patients. Relative assessment of violence and serious behavior problems that are related to positive symptoms must be done and managed with anti psychotics. Despite the limitations in sample size and cross-sectional nature, this study gives useful tips for the clinician in identifying first episode schizophrenia patients.

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