

Spontaneous Abnormal Involuntary Movements in Drug Naïve Schizophrenia

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Abstract

Background: Spontaneous involuntary movements or dyskinesic movements are often seen in patients with schizophrenia and other psychotic disorders and are widely considered to be a side effect of antipsychotics. Nevertheless, spontaneous movement disorders are also observed in the preneuroleptic era and among patients who were never exposed to antipsychotic medications. The aim of this study was to determine the extent of spontaneous movement disorders among antipsychotic-naïve patients and to evaluate contextually relevant risk factors.

Objective: The objective of this study is to study the rate of spontaneous abnormal involuntary movements in a group of patients presenting with a first episode of schizophrenia.

Methods: A total of 46 *patients* with the first episode of schizophrenia attending the Outpatient Department of Chengalpattu Medical College, who were neuroleptic-naïve, were examined for the presence of involuntary movements with the use of the Abnormal Involuntary Movement Scale.

Results: Three patients (6.5%) had spontaneous dyskinesia as defined by the criteria of Schooler and Kane, and four other patients had mild orofacial involuntary movements. Spontaneous involuntary movements were unrelated to age at onset, gender, subtype of schizophrenia, and family history.

Conclusions: Spontaneous abnormal involuntary movements were evident among a proportion of patients with the first-episode schizophrenia at baseline presentation. This finding supports previous suggestions that abnormal involuntary movements in schizophrenia may be related to the pathophysiology of the illness, and therefore, cannot be attributed entirely to the adverse effects of neuroleptic medication.

Key words: Drug naïve, Dyskinesia, Schizophrenia

INTRODUCTION

Tardive dyskinesia has long been considered to be a side effect of neuroleptic medications. The fact that it is both common and potentially irreversible makes it perhaps the most serious long-term side effect of these drugs, which are one of the mainstays of treatment of schizophrenia

and other psychotic disorders. An alternative perspective is that abnormal involuntary movements are not simply a side effect of treatment but may be, at least partially, an inherent part of some psychotic illnesses.¹ Reports of abnormal involuntary movements in schizophrenia date almost from the first description of the disorder itself. The abnormal involuntary movements in dementia praecox described by Kraepelin are indistinguishable from the movements we now term tardive dyskinesia.² Numerous studies were done to report the presence of abnormal movements in both drug naïve and treated schizophrenia. One study done by Chorfi and Moussaoui³ tend to show an increasing rate of spontaneous dyskinesia with increasing age and chronicity of illness. The highest rate was reported by Owens *et al.*⁴ in a sample of long-term institutionalized patients, which

Access this article online



www.ijss-sn.com

Month of Submission : 01-2017
Month of Peer Review : 02-2017
Month of Acceptance : 02-2017
Month of Publishing : 03-2017

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may have a selection bias for higher rates of movement disorders. A fundamental issue is whether such movements are present at the time of the first presentation of the illness or develop over time, either in relation to or independent of exposure to neuroleptic medication. In a study of first-episode schizophrenia/schizoaffective disorder, Chatterjee *et al.*⁷ found that only one of the 89 patients evidenced abnormal involuntary movements. In a study done by McCreadie *et al.*⁵ on Indian patients in 1996, they found that dyskinesia was found in 15% of normal subjects, 15% of first degree blood relatives of younger schizophrenic patients, 38% of never medicated patients, and 41% of medicated patients. Dyskinesia was associated with negative schizophrenic symptoms.

Aim

The aim of this study is to study the rate of spontaneous abnormal involuntary movements in a group of patients presenting with the first episode of schizophrenia.

METHODS

The prospective observational study was conducted at Department of Psychiatry, Chengalpattu Medical College in 46 patients fulfilling the International Classification of Diseases (ICD)-10 criteria for schizophrenia, who were drug naïve or medicated for less than a month. The purpose and nature of the study were explained to the patients, and informed consent was obtained. The patients were examined for the presence and severity of involuntary movements by one of the investigators myasthenia gravis using the Abnormal Involuntary Movement Scale (AIMS), which assesses involuntary movements in seven body areas. The presence of spontaneous dyskinesia was determined with the use of the criteria of Schooler and Kane,⁶ which requires that a patient have mild involuntary movements in at least two body areas or moderate involuntary movements in one body area to be classified as a “case.” Symptoms were assessed at the baseline using scale for assessment of positive symptoms (SAPS) and scale for assessment of negative symptoms (SANS). Sociodemographic and clinical data were compiled by interview and review of clinical case notes. Exclusion criteria were aged under 18 years or over 45 years; evidence of psychotic symptoms precipitated by an organic cause; previous treatment for psychoses; comorbidity with other psychiatric conditions.

RESULTS

A total of 46 patients who met the ICD-10 criteria for schizophrenia were assessed over the period of the study. Of these, 30 (65.2%) were female and 16 were male. Their mean age was 31.07 ± 9.7 years.

The mean total AIMS score for the group was 2.19 ± 2.2 (range = 0-12). When the criteria of Schooler and Kane were applied, three patients were found to have spontaneous dyskinesia. The topography of their involuntary movements was primarily orofacial; two patients evidenced a mixed topography with jaw and tongue movements (one having moderate severity) in conjunction with mild upper limb movements. One patient had mild upper and lower limb movements only. A further four patients had mild involuntary movements of one orofacial region but did not meet the Schooler and Kane criteria for spontaneous dyskinesia.

The mean age at presentation did not differ between the patients with spontaneous dyskinesia and those without (mean = 30.47 ± 11.6 years and mean = 30.66 ± 9.6 years, respectively; *t* = 0.63, *df* = 77, *P* = 0.95). There was no significant difference in gender distribution between the group of patients with spontaneous dyskinesia (one male and two female) and the group without (16 male and 30 female) (*P* = 0.66, Fisher’s exact test) (Table 1).

There is no significant association between the two groups with regard to the symptoms at the baseline, SAPS (mean = 6.36 ± 1.52 for those with dyskinesia and mean = 9.33 ± 2.4 for those without dyskinesia, *P* = 0.14), SANS (*P* = 0.94).

Patients with spontaneous dyskinesia had completed fewer years of education (mean = 11.3 ± 2.3 years) than patients without spontaneous dyskinesia (mean = 12.3 ± 2.4 years) (*t* = 2.15, *df* = 77, *P* = 0.23) though the association was not significant. There is no association with other variables such as subtype, age at onset. However, in a logistic regression (Table 2) in which the presence of spontaneous dyskinesia was the dependent variable and age, gender, years of education, family history, age at onset and subtype of schizophrenia were the independent variables; the overall regression model was not significant (−2 log likelihood χ^2 = 8.21, *df* = 5, *P* = 0.15).

Table 1: Comparison of socio-demographic and clinical variables between the patients with spontaneous dyskinesia and without spontaneous dyskinesia

Variable	Mean		P value
	With spontaneous dyskinesia	Without spontaneous dyskinesia	
Age	30.47	30.66	0.95
Education	2.63	3.66	0.25
Age at onset (years)	27.7	30	0.53
SAPS	6.36	9.33	0.14
SANS	3.47	3.33	0.94

SAPS: Scale for assessment of positive symptoms, SANS: Scale for assessment of negative symptoms

Table 2: Logistic regression analysis of demographic and clinical variables with the presence of dyskinesia as the dependent variable

Variable	Unstandardized coefficients β	Standard error	Standardized coefficients β	t value	P value
Constant	-7.765	0.452		0.172	0.866
Age	-2.903	0.036	-0.569	0.803	0.433
Age at onset	3.4	0.036	0.61	0.939	0.361
Family	7.442	0.213	0.101	0.349	0.732

DISCUSSION

The principal finding of this study was a baseline rate of 6.5% for spontaneous dyskinesia in a group of patients with the first-episode schizophrenia, which is higher than the rate (1.1%) reported by Chatterjee *et al.* in their first-episode group.⁷

This finding is at odds with the findings of McCreadie and Ohaeri¹ in their Nigerian study, where the rate was 0% for spontaneous dyskinesia in 12 never-medicated patients and 10% in 49 patients who were medicated. Fenton *et al.*⁸ previously reported an association between spontaneous dyskinesia and both a more malignant course and lower intelligence quotient among patients with schizophrenia, but there is no such finding in our study.

Our finding of no relation between the presence of spontaneous dyskinesia and age in our subjects is not surprising in a group of relatively young first-episode patients that is homogeneous in age. The association between increasing age and involuntary movements is perhaps the most robust finding across studies in samples with different ages (McCreadie *et al.* 1996 and 2002).^{5,9}

Spontaneous dyskinesia was more common at baseline presentation among patients with first-episode schizophrenia was found previously in the first-episode group of Chatterjee *et al.*⁷ This adds weight to the argument that involuntary movements in schizophrenia may be at least in part intrinsic to the pathophysiology of the illness rather than a side effect of its treatment. The lower number of years of education completed by patients with spontaneous involuntary movements, if considered indicative of poorer cognitive function, suggests that associations between involuntary movements and poorer cognitive function may antedate the onset of the illness

and may also be independent of treatment with neuroleptic drugs. This emphasizes the clinical and medicolegal importance of monitoring patients for the presence of spontaneous involuntary movements at the time of the first presentation.

CONCLUSIONS

Spontaneous abnormal involuntary movements were evident among a proportion of patients with first-episode schizophrenia at baseline presentation. This finding supports previous suggestions that abnormal involuntary movements in schizophrenia may be related to the pathophysiology of the illness, and therefore, cannot be attributed entirely to the adverse effects of neuroleptic medication.

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How to cite this article: Poornachandrika P, Amutha G, Sudhakar S, Anandan H. Spontaneous Abnormal Involuntary Movements in Drug Naïve Schizophrenia. *Int J Sci Stud* 2017;4(12):31-33.

Source of Support: Nil, **Conflict of Interest:** None declared.