Original article:

A study of the predictive factors of diagnostic instability of ATPD in Indian population

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Abstract

Introduction: The relevance of ATPD as a separate diagnostic entity has been questioned time and again because of its diagnostic instability due to overlap of symptoms with schizophrenia and affective psychosis in many cases. The diagnostic shift is more commonly either towards bipolar disorder or schizophrenia, if any. Our current study was planned to find out the predictive factors of the instability of the diagnosis of ATPD for a future diagnosis of schizophrenia or bipolar affective psychosis.

Method: A retrospective hospital inpatient case records based study was done on 1000 case records of psychotic patients admitted between Jan'15 to Mar'15 at Dept. Of Psychiatry, SMS Medical College, Jaipur. 183 case records which were completely recorded were considered after qualifying on the inclusion and exclusion criteria. All descriptive data was analysed by frequencies, mean and standard deviation. The statistical significance and correlations were assessed using Chi-square test, Odds ratio and Pearsons correlation.

Result: This study recognised that some sociodemographic and clinical factors may be used for predicting whether a patient will be diagnosed as bipolar affective disorder or Schizophrenia, if at all, the patient who had been diagnosed as ATPD at the first contact with the psychiatrist is rediagnosed.

Conclusion: Factors which predict a more likely diagnosis of schizophrenia are early age of onset, male sex, negative family history and treatment with only antipsychotics. The opposite factors were predictive of Bipolar affective disorder.

Keywords: Predictive factors, Diagnostic instability, ATPD, Schizophrenia, Bipolar affective disorder

Introduction

Acute psychosis as a group did not exist separately and was placed under the broad category of schizophrenia before ICD-10. In India, Wig and Singh made the first observation regarding the existence of acute psychosis as a separate nosologicalentity[I]. Acute and transient psychotic disorders (ATPD) first appeared in ICD-10[II]. They were listed under F20 – 29, which is the group for schizophrenia, schizotypal, and delusional disorders. Under ATPD, ICD-10 brought together the clinical concepts such as bouffe´edelirante (France), cycloid psychosis (Germany) and the reactive and schizophreniform psychoses (Scandinavian psychiatry)[III] and the order of priority given to selected key features of ATPD is as follows:

- Acute onset
- Presence of rapidly changing, variable polymorphic picture

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- Early remission and complete recovery within 2-3 months in most cases
- Presence of associated acute stress.

Early remission within 1 or 3 months[IV] distinguishes the ATPD subtypes withschizophrenic symptoms from schizophrenia and those with polymorphic or delusional features from persistent delusional disorder[III]. Even after the long time since ATPD has received a distinct nosological status, it as a separate diagnostic entity has been questioned time and again because of its diagnostic instability due to overlap of symptoms with schizophrenia and affective psychosis in many cases[V]. ICD–10 criteria identify a diagnostically unstable group of disorders comprising good-outcome schizophrenia, affective psychosis and a small group of non-affective, non-schizophrenic psychoses with an acute onset and benign course. Diagnostic stability is not associated with any particular subgroup of ICD–10 ATPDs. Acute onset and early remission do not independently predict favourable outcome in ATPD[VI]. The diagnostic shift is more commonly either towards bipolar disorder or schizophrenia, if any[VII], ATPDs show a high rate of change to schizophrenia and, to a lesser extent, affective disorders in the short- and longer-term[VIII,IX,X,XI,XII].

Our current study was planned to find out the predictive factors of the instability of the diagnosis of ATPD in the Indian population and see its correlation with the predictability of a future diagnosis of schizophrenia or bipolar affective psychosis.

AIM

To find the sociodemographic and clinical profile factors that predict a diagnostic instability of ATPD towards a future diagnosis of Schizophrenia and Bipolar affective disorder.

Methodology

This is a retrospective hospital inpatient case records based study, done on 1000 case records of psychotic patients admitted between January 2015 to March 2015 at Psychiatric Centre, Dept. Of Psychiatry, SMS Medical College, Jaipur. All in-patient case records admitted during this duration were scanned to ensure every case record had an equal chance of being included in the study. But only those case records (N=183) which were completely recorded were considered according to the following inclusion and exclusion criteria.

Inclusion criteria

1. Case files of patients with the current diagnosis of Schizophrenia and Bipolar Affective disorder (manic/ depressive/ mixed) with Psychotic features, with diagnosis and coding as per ICD-10.
2. Diagnosis of ATPD on first contact with Psychiatric Services in the past history.
3. Age of onset between 18-45 years, irrespective of sex or religion.
4. Past history suggestive of remission (No active symptoms, irrespective of socio-occupational functioning).

Exclusion criteria

1. Diagnosis of substance- induced or organic psychosis at current presentation.
2. Those cases whose diagnosis was revised to a major diagnosis within the same episode due to fulfilment of duration criteria of ICD-10.
3. History of substance use other than Tobacco.
4. Inadequate history of previous psychiatric presentation.
5. History suggestive of any personality disorder or intellectual disability or neurological illness like seizure disorder, sequelae of head injury etc.
6. Case records of patients who absconded before detailed evaluation.

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Collection of data

Sociodemographic parameters like age, sex, religion, education level, socioeconomic status, occupation, marital status and family type at the time of onset of illness were recorded. Other information considered relevant to illness like family history, substance abuse, drug therapy at first contact- oral antipsychotics or combination of antipsychotics and mood stabiliser, total duration of hospitalisation, total duration of treatment taken after first contact and current diagnosis were noted.

Statistical analysis

All descriptive data was analysed by frequencies. The statistical significance and correlations were assessed using Chi- square test,Odds ratio and Pearsons correlation. All statistical analysis was done using SPSS ver.21 for windows 7, IBM Corp.

Results

We analysed our data by dividing it into two groups: one group of patients who were diagnosed as Schizophrenia and the other group who were diagnosed as Bipolar Affective Disorder.

Schizophrenia Group: This group consisted of51.5% patients younger than 25 years of age at onset of illness and 48.5% older than 25 years.Majority were males (69.3%), belonging to Hindu religion (94.1%) and had 78.2% patients were educated upto secondary standard or below. They belonged to the lower socio-economic status (82.2%). Majority of patients were mostly unskilled workers (41.6%). 76.2% patients were married and lived in nuclear family. Family history for psychiatric illness was negative in 79.2% patients. Tobacco was the most commonly used substance (50.5%), though almost an equal number almost did not use any substance at all (49.5%). 88.1% patients were treated with antipsychotic monotherapy at first contact and duration of hospital stay was less than 7 days in 80.2% of them. Total duration of drug treatment was </=6 months in majority. (89.1%).

Bipolar affective disorder group: Majority of patients in this group were older than 25 years of age at onset of illness (70.7%). Males and females were almost equal in number (51.2%, 48.8% respectively). Most of the patients were Hindus (95.1%) and were educated upto secondary level (54.9%). 52.4% patients belonged to lower socioeconomic status and majority were unskilled and semiskilled worker (45.2%). 78% were married and 82.9% lived in nuclear families. Majority of patients did not have a positive family history of psychiatric illness (63.4%). Tobacco was the most commonly used substance in 63.4% patients. 65.9% patients were treated with only an antipsychotic at first contact and 34.1% with a combination of antipsychotic and mood stabiliser. Majority patients had a duration ofhospital stay of </=7 days (72%) and total duration of treatment taken was </=6 months (84.1%).

Significant findings:

The two groups differ statistically significantly in age at onset of illness, sex distribution, education, socioeconomic status and occupation. They also differ in presence of family history of psychiatric illness and type of drug therapy used in first contact for treatment.

Correlations and odds ratio:

The age at onset of illness significantly correlated with the subsequent diagnosis, i.e. lower the age of onset of illness, higher the chances of patient being diagnosed as schizophrenia (R=-0.224,p=0.002). The chance of being diagnosed as schizophrenia were 1.494 times higher in younger onset than bipolar affective disorder (O.R.=0.583). The female sex correlated significantly with a diagnosis of bipolar affective disorder subsequently (R=-0.185, p=0.012) by odds of 0.666, while odds of males having schizophrenia were 1.431. Presence of

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family history also correlated significantly with a later diagnosis of bipolar affective disorder (R=-0.175, p=0.043). The odds for bipolar affective disorder diagnosis were 0.583 and that for schizophrenia were 1.494.Use of combination drug therapy, i.e. antipsychotic and mood stabiliser also correlated with a later diagnosis of Bipolar affective disorder (R=-0.268, p=0.000). The odds were 0.539, as opposed to 2.075 for monotherapy in patients later diagnosed as schizophrenia.

TABLE 1: SOCIODEMOGRAPHIC PROFILE

SOCIODEMOGRAPHIC PROFILE		CURRENTDIAGNOSIS		X^2 (d.f.)	Signi.(2-tailed)
		BPAD (%)	SCHIZOPHRENIA (%)		
Age at Onset of Illness	<= 25years	24 (29.3)	52 (51.5)	9.199 (1)	**0.002**
	26+years	58 (70.7)	49 (48.5)		
Sex	Male	42 (51.2)	70 (69.3)	6.235 (1)	**0.013**
	Female	40 (48.8)	31 (30.7)		
Religion	Hindu	78 (95.1)	95 (94.1)	0.99 (1)	0.753
	Muslim	4 (4.9)	6 (5.9)		
Education	Illiterate	11 (13.4)	32 (31.7)	8.764 (3)	**0.033**
	Secondary	45 (54.9)	47 (46.5)		
	Sr. Secondary	11 (13.4)	9 (8.9)		
	Graduate	15 (18.3)	13 (12.9)		
Socioeconomic status	Lower	43 (52.4)	83 (82.2)	22.040 (2)	**0.000**
	Middle	33 (40.2)	11 (10.9)		
	Upper	6 (7.3)	7 (6.9)		
Occupation	Housewife	37 (45.1)	29 (28.7)	8.561 (3)	**0.036**
	Unskilled	19 (23.2)	42 (41.6)		
	Semiskilled	18 (22)	18 (17.8)		
	Skilled	8 (9.8)	12 (11.9)		
Marital status	Married	64 (78)	77 (76.2)	0.084 (1)	0.772
	Unmarried	18 (22)	24 (23.8)		
Family type	Nuclear	68 (82.9)	77 (76.2)	1.231 (1)	0.267
	Joint	14 (17.1)	24 (23.8)		

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TABLE 2: CLINICAL PROFILE

CLINICAL PROFILE		CURRENTDIAGNOSIS		X^2 (d.f.)	Signi. (2-tailed)
		BPAD (%)	SCHIZOPHRENIA (%)		
Family history	Nil	52 (63.4)	80 (79.2)	5.615 (1)	**0.018**
	Present	30 (36.6)	21 (20.8)		
Substance Abuse	Tobacco	52 (63.4)	51 (50.5)	3.070 (1)	0.080
	Nil	30 (36.6)	50 (49.5)		
Drug Therapy	Antipsychotic	54 (65.9)	89 (88.1)	13.135 (1)	**0.000**
	Antipsy+Mood stabiliser	28 (34.1)	12 (11.9)		
Duration of hospitalisation	</= 7days	59 (72)	81 (80.2)	1.712 (1)	0.191
	8+days	23 (28)	20 (19.8)		
Total duration of treatment	</= 6 months	69 (84.1)	90 (89.1)	0.978 (1)	0.323
	>6 months	13 (15.9)	11 (10.9)		

TABLE 3: CORRELATION AND ODDS RATIO OF SOCIODEMOGRAPHIC PROFILE

	Pearsons R	Signi. (2-tailed)	Odds Ratio for BPAD	Odds ratio for Schizophrenia
Age at onset of illness	-0.224	**0.002**	0.583	1.494
Sex	-0.185	**0.012**	0.666	1.431
Religion	0.023	0.073	1.127	0.915
Education	-0.174	0.072	-	-
Socioeconomic status	-0.244	0.074	-	-
Occupation	0.083	0.267	-	-
Marital status	0.021	0.074	1.059	0.956
Family type	0.082	0.270	1.273	0.841

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TABLE 4: CORRELATION AND ODDS RATIO OF CLINICAL PROFILE

	Pearsons R	Signi. (2-tailed)	Odds ratio for BPAD	Odds ratio for Schizophrenia
Family History	-0.175	**0.043**	0.670	1.472
Substance Abuse	0.130	0.081	1.346	0.792
Drug Therapy	-0.268	**0.000**	0.539	2.075
Duration of hospitalisation	-0.097	0.193	0.788	1.244
Total duration of treatment	-0.073	0.325	0.801	1.235

Discussion

The concept of ATPD has been present in psychiatric clinical practice for more than twenty years. Unfortunately, it has not received much attention from researchers, especially in developing countries, even when epidemiological studies of the incidence of acute psychosis have shown that acute and transient psychosis is ten times more common in developing countries as compared to the industrialized countries[XIII,XIV]. The diagnostic shift is more commonly either towards bipolar disorder or schizophrenia, if any[VII]. This concept gave rise to the aim of our study to find the predictive factors of instability of the diagnosis of ATPD towards bipolar affective disorder or schizophrenia.

The mean age at onset of illness was found to be lower (26+ years) for schizophrenia group than for bipolar affective disorder group (x^2(df) =9.199 (1), p=0.002). This is similar to previous study conducted where the mean age of onset was in the age group 20-39 years[V,XV]. This difference correlated significantly (R=-0.224, p=0.002), as the lower the age of onset, the more likely is the patient to be diagnosed with Schizophrenia. This finding is similar to study done by Thorup et al. 2007, Castagnini A and Berrios, 2008[XVI,III].

The female sex correlated significantly with a diagnosis of bipolar affective disorder subsequently (R=-0.185, p=0.012) by odds of 0.666, while odds of males having schizophrenia were 1.431. This finding was similar to a study that found a greater diagnostic shift to affective disorders for females (16.1% vs 10.4%)[VI,XX]. This finding of our study is supported by multiple studies, although, we do realise a skew in sex distribution due to a differential social attitude towards illness and treatment of female psychiatric patients.

The chances of a patient treated with combination of antipsychotics and mood stabiliser at the time of diagnosis of ATPD at first contact were higher to be diagnosed bipolar affective disorder later, while those treated with single antipsychotics were more likely to be diagnosed as Schizophrenia later. This difference in diagnostic possibility was found to be significantly correlated (R = -0.268, p<0.05). The odds were 0.539, as opposed to 2.075 for monotherapy in patients later diagnosed as schizophrenia. These findings correlate with the study by Marneros and Pillman, 2002[XVII].

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Majority patients in the schizophrenia group and the Bipolar affective disorder group were educated upto Secondary standard (78.2% vs 54.9% respectively). But, we found that as the education level increases from illiteracy to post-graduation, the chances of patient being diagnosed as Bipolar affective disorder increases. The possible explanantion can also be that since age at onset is earlier for schizophrenia, it affects education levels more adversely. This also correlates with the finding in the study of Suda et al, 2005[XXI].

Although majority of our patients in both the groups belonged to lower socioeconomic status, it was more likely that a patient from lower socioeconomic status is more likely to be diagnosed with schizophrenia than bipolar affective disorder. This finding of our study is also supported by the social drift theory of schizophrenia[XXII] and the study by Hur JW et. al.2015[XXIII].

Unskilled working was the most common type of occupation done by patients in the study. (41.6% patients in the schizophrenia group vs. 45.2% in the BPAD group). Majority of females were housewives. This correlates well with low educational levels and lower socioeconomic status. The difference in occupation was statistically significant in both the groups, with patients of BPAD group finding skilled and semiskilled occupations more than Schizophrenia group. This finding correlates well with another study that states that patients who develop schizophrenia have a lower level of educational status and occupationalfunctioning[XXI].The presence of family history made the diagnosis of bipolar affective disorder more likely compared to that of schizophrenia at a statistically significant level (r= -0.175, P= 0.043). This finding correlates with the finding in the study of Das et al, 2009[XIII], where family history was positive more in patients later diagnosed with affective psychosis than schizophrenia.

Conclusions

This study recognised that some sociodemographic and clinical profile factors may be used for predicting whether a patient will be diagnosed as bipolar affective disorder or Schizophrenia, if at all, the patient who had been diagnosed as ATPD at the first contact with the psychiatrist is rediagnosed.

Factors which predict a more likely diagnosis of schizophrenia are:

- Early age of onset
- Male Sex
- Negative family history
- Treatment with only antipsychotics at first contact

Factors which predict a more likely diagnosis of bipolar affective disorder are:

- Later age of onset
- Female sex
- Positive family history
- Treatment with a combination of antipsychotics and mood stabilisers at first contact

Limitations

- The retrospective case records were deficient in providing the natural course and phenomenology of the illness when patient received the diagnosis of ATPD. Also, the subtyping of ATPD was not available.
- The reliability of informants and availability of past case/ treatment records at the time of recording past history is questionable.
- The sample size is small, hence not generalizable to every case diagnosed with ATPD.

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- Other diagnosis like Depression with psychotic features and Psychosis NOS etc were not taken due to their low prevelance in rediagnosis of cases of ATPD, but they certainly impact the predictability of factors studied.
- Presence or absence of stress before the first incidence of ATPD could not be assessed and hence correlated with the diagnostic instability.

Future directions

- A Prospective study of patients diagnosed with ATPD at present and followed up later to view the natural course of illness would be the best possible way to establish predictive factors of diagnostic instability of ATPD.
- The correlation of phenomenology, subtype of ATPD and the various sociodemographic and illness factors will make the study more meaningful and impactful.
- A large sample size and inclusion of all the diagnostic possibilities when studying instability will make the study more relevant for generalisation.

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