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Original Article

A study on prescribing patterns of atypical antipsychotic in psychiatric disorders

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A R T I C L E I N F O	A B S T R A C T
	Objective: Psychiatric disorders are one of the important causes of global morbidity and often are chronic disorders requiring treatment with psychopharmacological agents for prolonged periods, may be extending up to a lifetime. The present study was planned to assess the prescribing patterns for atypical antipsychotic in patients suffering from psychiatric disorders. **Methods:** A six month, Prospective observational study was carried out in an out-patient department. The patients aged 18 -55 years who have been diagnosed with psychiatric illnesses as per ICD-10 classifications and receiving or prescribed with atypical antipsychotic drugs were selected. **Results:** During the six-month study period, total 100 prescriptions were analyzed. The age group of 25-38 years included 72% of the patients, higher in men (69%). 80% of the patients during the study period were schizophrenia, schizoaffective disorders followed by non organic and unspecified disorders. Serotonin dopamine antagonist (37%) followed by multi acting receptor targeted (21%) were the most common drug classes found to be involved in the study. Respiridone (37%), olanzapine (11%) and quetiapine (10%) were the most commonly prescribed drugs in the study population. Among two drug combination therapy involved in the study, the most common was clozapine and respiridone (7%) followed by clozapine and aripriprazole (1%). **Conclusions:** The study shows that serotonin dopamine antagonist was the most commonly prescribed drug class, respiridone being the commonest. Antipsychotic drug combinations among patients with psychiatric disorders were considerable especially in non responders with a single antipsychotic drug therapy **Key words**: Atypical antipsychotics, psychiatric disorders, ICD-10.

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1. INTRODUCTION

Psychiatric and behaviour disorders are found in people of all regions, countries, religion and society. WHO has estimated in an analysis that there are 450

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million people across the world suffering from neuropsychiatry conditions.[1-2]Mental morbidity survey conducted in various part of India suggested morbidity rate of not less than 18 – 20 per 1000 and the types and prevalence are very much the same as in other parts of the world.[3]

International classifications, such as DSM (Diagnostic and Statistical Manual of Mental Disorders) and ICD (International Classification of Diseases), provide the criteria for diagnosing schizophrenia and other psychotic disorders. In clinical work in India the currently used diagnostic system is ICD-10 (the 10th Revision of The International Statistical Classification of Diseases and Related Health Problems). [4]

Psychiatric disorders are one of the important causes of global morbidity and often are chronic disorders requiring treatment with psychopharmacological agents for prolonged periods, may be extending up to a lifetime. [5-6]*Psychosis* means grossly impaired in reality testing. The term may be used to describe the behaviour of a person at a given time or a mental disorder in which all persons with the disorder have grossly impaired reality testing at some time during its course. Gross impairment in reality testing is defined as existing when individuals incorrectly evaluate the accuracy of their perceptions and thoughts, and make incorrect inferences about external reality, even in the face of contrary evidence. [7] In ICD 10 classification; the psychotic disorders are schizophrenia, schizoaffective, delusional disorders, non organic disorders and unspecified disorders (F20-29). In the development of psychosis, both genetic and environmental factors play an important role. [4]

There is increased prescription rate of atypical antipsychotics in recent years due to the higher incidence of general side effects seen with the conventional antipsychotics. These side effects have lead to non adherence of patient to treatment and disease relapse. At the same time atypical antipsychotics have the tendency to produce metabolic side effects that often leads to long term morbidity such as diabetes, cardiovascular disease, and stroke etc. [8]

Classification of Second generation or atypical antipsychotic drugs.[9-10]

I.   Serotonin Dopamine antagonist: Risperidone, Ziprasidone, Sertindole

II. Multi acting receptor targeted: Clozapine, Olanzapine, Quetiapine

III. Partial dopamine agonist: Aripiprazole

IV. D_2/D_3 antagonist: Sulpiride, Amisulpride

Antipsychotics are defined as atypical antipsychotics on the basis of both preclinical and clinical criteria. Based on preclinical criteria;

• Fail to induce catalepsy in animals.

• Fail to induce dystonia in haloperidol sensitized monkeys.

• Fail to produce sustained elevation of plasma prolactin.

• Inhibits serotonin induced headshakes in animals.

Based on clinical criteria:

• Produce minimal EPS at clinically effective antipsychotic doses.

• Have a low incidence of causing tardive dyskinesia with long term treatment.

• Effective in the treatment of both positive and negative symptoms.[11-12]

The present study was done with main objective to assess the prescribing patterns for atypical antipsychotic drugs in patients suffering from psychiatric disorders of age 18-55.

2. MATERIALS AND METHODS

A six month, prospective observational study was carried out in an out-patient department of psychiatry of a tertiary Hospital from October 2013 to March

2014. Prior to study initiation, ethical approval was obtained from the institutional as well as hospital committee. Patients age 18 -55 years who have been diagnosed with psychiatric disorders as per ICD 10 classification and patients receiving or prescribed with atypical antipsychotic drugs were included in the study. All the necessary details for evaluation regarding patient's chief complaints, co morbidities, previous allergies, and others were obtained from the patient's clinical records. We studied certain demographic characteristics, the factors studied were: (a) characteristics of the patient [age(18-55 years), gender and co morbidities], (b) drug characteristics [list of atypical antipsychotic and number of drugs prescribed] and symptoms. The Socio demographic status like education, occupation, monthly income, and social habits of the patients were collected. Data were collected from data collection form to review the current prescribing patterns of atypical antipsychotic drugs in patients with or without co-morbidities, also the use of atypical antipsychotic drug mono- and combination therapy in patient with psychiatric disorders.

3. RESULTS

During the six month study period, a total of 100 patients were consulted in an out-patient psychiatry department at tertiary Hospital. Of these prescriptions, the age group of 25-38 years included 72% of the patients, this was found to be higher in men (69%). Per prescription, the numbers of drugs prescribed were in the range of 3-5. The Socio demographic characteristics such as occupation, educational qualification, Monthly Income, and Social habits of the patients were summarized in Table 1. The patients were classified on the basis of International Classification of Diseases (ICD-10).

Serotonin dopamine antagonist (37%) was the most common drug class involved in the study followed by multi acting receptor targeted (21%). Respiridone (37%), olanzapine (11%) and quetiapine (10%) were the most commonly prescribed drugs in the study population. These and other prescribing patterns of atypical antipsychotic drug monotherapy were summarized in Table 2.

Clozapine and respiridone (7%) was the most common two drug combination therapy involved in the study followed by clozapine and aripriprazole (1%). Prescribing patterns of atypical antipsychotic drugs were classified into two types like with co morbidities (38%), and without co morbidities (62%). Among those co-morbidities, diabetes mellitus (13%), dyslipidaemia (9%), diabetes with hypertension (12%), hypertension (4%) were seen. These and the detailed drugs prescribed were summarized in Table 3. Among those without co-morbidities were divided into single drug (39%) and combination drug therapy (23%), these results were summarized in Table 4.

Table 1: Socio demographic status of the patients

Socio demographics	Number and percentage (%)
Educational qualifications	76 (76%)
Literate 76 (76%)	24 (24%)
Illiterate 24 (24%)	
Occupation	
Employed 57 (57%)	57 (57%)
Unemployed 43 (43%)	43 (43%)
Monthly Income	
<2000 23 (23%)	23 (23%)
2000-5000 16 (16%)	16 (16%)
5000-10000 31 (31%)	32 (31%)
10000-15000 17 (17%)	17 (17%)
>15000 13 (13%)	13 (13%)
Social Habits	
Alcoholic 15 (15%)	15 (15%)
Smoker 20 (20%)	20 (20%)
Both 8 (8%)	8 (8%)

Table 2: Prescription pattern of atypical antipsychotic drug monotherapy

Antipsychotic drugs	Number & percentage (%)
Serotonin dopamine antagonist	
• Respiridone	37 (37%)
Multi acting receptor targeted	
• Olanzapine	11 (11%)
• Quetiapine	10 (10%)
• Clozapine	5 (5%)
Partial dopamine agonist	
• Aripiprazole	6 (6%)
D_2/D_3 antagonist	
• Amisulpride	5 (5%)

Table 3: Use of atypical antipsychotic drugs in patients with co-morbidities

Co morbidities	Drugs	Number & percentage (%)
Diabetes mellitus	Olanzapine	3 (3%)
	Quetiapine	4 (4%)
	Respiridone	5 (5%)
	Quetiapine + Haloperidol	1 (1%)
	Aripriprazole + Clozapine	1 (1%)
Hypertension	Respiridone	1 (1%)
	Respiridone + Clozapine	1 (1%)
	Quetiapine + Haloperidol	
	Amisulpride	1 (1%)
	Quetiapine + Haloperidol	1 (1%)
Dyslipidaemia	Olanzapine	2 (2%)
	Olanzapine	3 (3%)
	Resperidone + Clozapine	1 (1%)
	Clozapine + Aripriprazole	1 (1%)
	Olanzapine + Haloperidol	
DM + HTN	Respiridone	12 (12%)

Table 4: Use of atypical antipsychotic drugs in patients with no co-morbidities

Monotherapy drugs	Number & percentage	Combination therapy drugs	Number & percentage
Serotonin dopamine antagonist		Clozapine + Respirido	4 (4%)
• Respiri	20 (20%)		

		done	ne
Multi acting receptor targeted 21%	6 (6%)	Olanzapine + Haloperidol	2 (2%)
• Olanzapine	6 (6%)		
• Quetiapine			
Partial dopamine agonist		Aripriprazole +Haloperidol	2 (2%)
• Aripiprazole	6 (6%)		
D_2/D_3 antagonist		Amisulpride + Haloperidol	1 (1%)
• Amisulpride	1 (1%)		
		Quetiapine + Haloperidol	14 (14%)

4. DISCUSSION

Mental health is defined as the successful performance of the mental functions, in terms of thought, mood and behaviour that results in productive activities, fulfilling relationships with others and the ability to adapt to change and cope with adversity.[10] The above finding shows that the prescribing pattern of atypical antipsychotic drugs in the age group of 18-55 in the out-patient department was found to be higher in men (69%) than in women (31%) during the study period. Psychiatric disorders were found more common in men than women in our study. In the present study, the demographic characteristics were literacy (76%), employment (57%), patients having the monthly income of 5000-10000 (31%), smokers (20%) and alcoholic patients (15%). 80% of the patients were of schizophrenia, schizoaffective disorders followed by non organic and unspecified disorders. The most common drug class involved in the study was serotonin dopamine antagonist (37%) followed by multi acting receptor targeted (21%) and the prescribed drugs in the study population were respiridone (37%), olanzapine (11%) and quetiapine (10%). Clozapine and rispiridone (7%) was the most common two drug combination

therapy involved in the study followed by clozapine and ariprirazole (1%). Prescribing patterns of atypical antipsychotic drugs were classified into two types like with co morbidities (38%), and without co morbidities (62%). Among those co morbidities, diabetes mellitus (13%), diabetes with hypertension (12%), dyslipidaemia (9%), hypertension (4%) were seen. Among those without co morbidities were divided into single drug (39%) and combination drug therapy (23%).

5. CONCLUSIONS

The present study shows that the most commonly prescribed drug classes involved were serotonin dopamine antagonist, rispiridone being the commonest. Atypical antipsychotic drug combinations among patients with psychiatric disorders were considerable. The rational prescribing of drugs is useful in reducing the misuse of drugs especially in poly-pharmacy and in the treatment of psychiatric disorders.

6. REFERENCES

1. Park K Park's textbook of Preventive and Social Medicine 20thEd Jabalpur India: M/s BanarsidasBhanot; 2007.

2. Math S, Chandrashekar C, Bhugra D. Psychiatric epidemiology in India. Indian J Med Res 2007; 126: 183-192

3. KESSLER R, ANGERMEYER M, ANTHONY J. Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. World Psychiatry 2007;6:168-176

4. A conceptual framework for the revision of the ICD-10 classification of mental and behavioural disorders. World Psychiatry 2011;10:86-92

5. Henry J. Riordan, Paola Antonini, Michael F.Murphy. Atypical antipsychotics and metabolic syndrome in patients with schizophrenia, risk factors, monitoring, and healthcare implications. American Health & drug benefits September 2011; Volume 4(5): 292-02

6. Tanner J, Reinherz H, Beardslee W, Fitzmaurice G, Leis J, Berger S. Change in Prevalence of Psychiatric Disorders From Ages 21 to 30 in a Community Sample. J NervMent Dis 2007;195: 298–306

7. Reed S. First-episode psychosis: A literature review. International Journal of Mental Health Nursing 2008; 17: 85–91

8. Shahda M, Elsayed O, Borarie A. Study of the prevalence of metabolic syndrome among psychiatric patients and its correlation with diagnosis and medications. Egypt J. Psychiatry May 2010; Volume 31(2): 17- 24.

9. Mohandas E, Rajmohan V. Metabolic syndrome- A psychiatric perspective. Archives of Indian Psychiatry 2007; 9(1): 21-28

10. Horacek J, Valesova V, Kopecek M, Palenicek T, Dockery C, Mohr P et al. Mechanism of action of atypical antipsychotic drugs and the neurobiology of schizophrenia. CNS Drugs 2006; 20 (5): 389-409

11. Michael J burns. The pharmacology and toxicology of atypical antipsychotic agents. Clinical toxicology. 2001; 39(1):1-14

12. Mackin P, Thomas S. Atypical antipsychotic drugs. BMJ 2011; 342: 650-56