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ANTIPSYCHOTIC DRUG PRESCRIBING PATTERN IN TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Background: Schizophrenia is a complex neurobehavioral disorder affecting about 1% of general population. Prescribing pattern of antipsychotics has seen a major shift in last two decades, from first generation to second generation. Therefore, present study was carried out to analyze the pattern of antipsychotic drug utilization in patients of schizophrenia. **Materials and methods:** A prospective observational study was conducted in psychiatry OPD of a tertiary care hospital for six months. Diagnosis of schizophrenia was made according to DSM IV-TR criteria. Prescriptions were analyzed for demographic details, distribution of subsets of disease and psychotropic drugs prescribed using WHO indicators. **Results:** Of the 132 cases analyzed, 57.58% were males and 66.66% were below 40 years. Paranoid schizophrenia (76.5%) was the most common diagnosis and a total of 295 psychotropic drugs were prescribed. Average number of psychotropic drugs per prescription was 2.2 $\pm$ 0.6. Atypical antipsychotics (78.82%) were prescribed more commonly than typical antipsychotics; olanzapine (42.35%) was the most commonly prescribed followed by risperidone (22.35%), haloperidol (20%), quetapine (8.24%), aripiprazole (4.71%) and clozapine (2.35%). As an adjunctive treatment escitalopram, clonazepam and carbamazepine were commonly prescribed antidepressant, anxiolytic and antimaniac agents respectively. **Conclusion:** The treatment pattern observed correlates with the changing trends in the treatment of schizophrenia world over.

KEYWORDS: Schizophrenia, drug utilization, atypical antipsychotics.

INTRODUCTION

Schizophrenia is one of the most disabling and challenging psychotic disorder affecting 1% of the population.[1] It is the 4th leading cause of disability among adults.[2] Treatment of such patients at an early stage may prevent loss of morbidity, mortality and productivity. Advances in drug treatment have revolutionized the practice of psychiatry over the past six decades. The trend has turned from custodial care towards restoring the individual patient to his place in community.

Serendipituous discovery of chlorpromazine in 1952 has transformed the lives of schizophrenics. Although highly efficacious, the side effects produced by these older conventional drugs[3] were distressing leading to an active search for better agents. In recent years, the arrival of atypical antipsychotics which appear to produce far fewer extra pyramidal side effects and are effective against negative symptoms, has been greeted enthusiastically by psychiatrists and consumers.[4,5,6] A prescription based survey is considered to be one of the most effective methods to assess and evaluate the prescribing attitude of physician. The results of these types of studies, which were carried out at different health care centers are used to evaluate and analyze the medical, social and economic outcomes of the drug therapy.[7] Drug utilization data may be used to produce crude estimates of disease prevalence also.[8] As the information regarding the utilization pattern of antipsychotic drugs is limited in Indian population, particularly in central India, present study was undertaken to analyze the psychotropic drug utilization pattern in schizophrenia patients attending psychiatry OPD of a tertiary care teaching hospital in Bhopal.

MATERIALS AND METHODS

Study design

A hospital based prospective observational study was carried out for six months at the Chirayu medical college & hospital, Bhopal a tertiary care teaching hospital in central India.

Selection criteria

Prescriptions of patients of both sexes and all ages, suffering from schizophrenia and started on atleast one antipsychotic drug were selected. However in-patients, referred patients, patients of epilepsy, suicidal tendencies, mental retardation, substance abuse and patients who were pregnant, lactating and cases where diagnosis was not certain were excluded from study.

Sample size

One hundred and thirty two patients of schizophrenia attending OPD were included in study.

Study methodology

Diagnosis was made according to Diagnostic and Statistical Manual of Mental Disorders, Fourth edition, Text Revision (DSM IV-TR) criteria.[9] A specially designed proforma was used to collect the required information. Patient related information (age, sex, diagnosis) and drug related information (name of the drug, dosage form and route of administration) were recorded. WHO guidelines were taken into consideration for evaluating drug use indicators.[10,11]

Parameters for evaluation

WHO drug use indicators included to analyze the prescription were: (1) average number of the drugs per prescription, (2) percentage of drugs prescribed by generic name, (3) percentage of injectable drugs prescribed, (4) percentage of prescriptions containing fixed dose combinations (FDC) and (5) percentage of the drugs prescribed from essential drug list.

Data analysis

Data was entered and analyzed by using Microsoft excel 2007.

RESULTS

Fig. 1 shows demographic details of study population. Of the total 132 cases analyzed, 76 (57.58%) were male and 88 patients (66.66%) were below 40 years of age. Paranoid schizophrenia (76.5%) was the most common diagnosis followed by undifferentiated 10.3%, catatonic 7.5% and disorganized 5.7%.

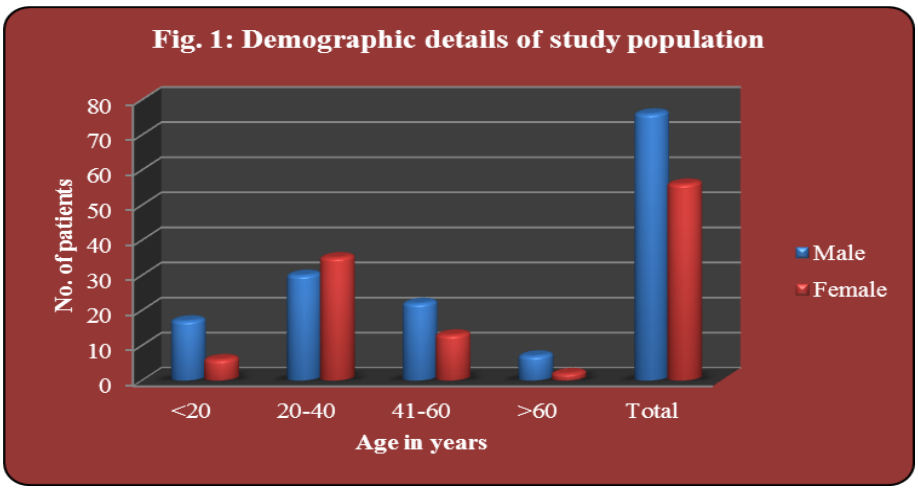


Table 1: Drug use pattern in schizophrenia

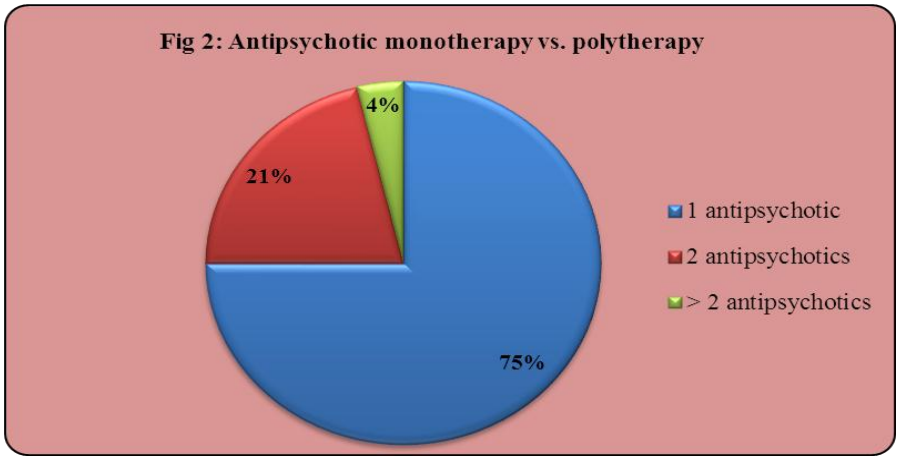
Sr. No.	Drug use indicators	Outcome
1.	Average number of the drugs per prescription	2.2 ± 0.6
2.	Percentage of the drugs prescribed by generic name	88/295 (29.83%)
3.	Percentage of injectable drugs prescribed	27/295 (9.15%)
4.	Percentage of the prescriptions containing FDC	8/132 (6.1%)
5.	Percentage of drugs prescribed from essential drug list	240/295 (81.36%)

Table 1 documents the drug use pattern in schizophrenia patients. A total of 295 drugs were prescribed, out of which 268 were given orally. 36.61% of the drugs were from the WHO's 18th list of Essential medicines [12] and 66.44% were from National List of Essential Medicines of India (NLEM), 2011.[13]

Table 2: Prescribing prevalence of individual psychotropic drugs

Drug class	Drug	No. of drugs (n= 295)	% of drugs
Antipsychotics n=170 (57.63%)	Olanzapine	72	24.41
	Risperidone	38	12.88
	Haloperidol	34	11.53
	Quetiapine	14	4.75
	Aripiprazole	8	2.71
	Clozapine	4	1.36
Antidepressants n= 25 (8.47%)	Escitalopram	14	4.74
	Fluoxetine	8	2.71
	Amitriptyline	2	0.68
	Imipramine	1	0.34
Anxiolytics n= 30 (10.17%)	Clonazepam	19	6.44
	Lorazepam	7	2.37
	Diazepam	4	1.36
Antimaniacs / Mood stabilizers n= 11 (3.73%)	Carbamazepine	6	2.03
	Valproate	3	1.02
	Lithium	2	0.68
Anticholinergics n= 59 (20%)	Trihexyphenidyl	55	18.64
	Promethazine	4	1.35

Amongst the total study population, 99 patients were prescribed only one antipsychotic drug, 28 were prescribed two antipsychotics and 5 were given more than two antipsychotics as shown in Fig. 2.



DISCUSSION

Drug utilization study is essential for evaluating patient care to improve service delivery through awareness creation for appropriate choice of drugs. The present study was conducted to describe the current prescribing pattern and drug utilization in schizophrenia patients using the WHO core prescribing indicators.

A total number of 132 prescriptions were analyzed. There were 57.58% male and 42.42% were female which is consistent with the findings of previous studies.[14,15] According to McGrath J et al.[16] and Aleman A et al.[17] in schizophrenia for every three males, there are two females, however, this finding is different from a study done in Gujarat by Galani VJ et al.[18] as it shows that females and males affecting schizophrenia were almost equal.

Majority of patients 88 (66.66%) were below 40 years of age. The age of onset varies between men and women, where males tend to have a younger onset and peak incidence is in 15-24 years.[19] Maki P et al. also reported that schizophrenia is commonly prevalent among the adolescents.[20] Similar finding was noted in our study.

The average number of drugs per prescription is an important index of prescription audit providing the scope for review and educational intervention in prescribing practices. This is especially important in psychiatry as studies have shown that polypharmacy was common and psychotherapeutic drugs have been overprescribed and misused.[21,22] In our study the average number of drugs per prescription was 2.2 $\pm$ 0.6, which is comparable with the findings of other studies where it ranged from 2 to 3.3 drugs per prescription.[23,24]

Fixed-dose combinations were prescribed occasionally (6.1%). Prescriptions with generic names were just 30%, which suggests popularity of brand names amongst the medical

practitioners. This is issue of concern and can be redressed to some extent by prescriber education. Utilization of drugs from the essential medicines list (WHO & Indian) was very high (81.36%). The primary purpose of NLEM is to promote rational use of medicines considering the three important aspects i.e. cost, safety and efficacy.[13]

In the present study, the majority of patients (78.82%) were treated with atypical antipsychotics. Most of the recent guidelines recommended the use of atypical agents as the first line of treatment for schizophrenia.[25] Many studies have also shown that atypical antipsychotics were more commonly prescribed than typical ones.[26,27,28] Several factors are held responsible for this change, some of which include: a lower reported incidence of extra pyramidal symptoms and tardive dyskinesia, intensive focus on research and education about atypical antipsychotics as well as presence of a strong market force of companies and physicians choosing to try something new in the hope of maximizing outcomes.[29]

This survey demonstrates that olanzapine (42.35%) and risperidone (22.35%) were the most commonly prescribed antipsychotics followed by haloperidol (20%). Findings of our survey are in line with the findings of prescription survey of Padmini D et al.[30] and Grover S et al.[27] however; our survey does not support the findings of Sawhney V et al.[31] who reported that typical antipsychotics were used more frequently than atypical antipsychotics.

In our study about one fourth of the patients were prescribed more than one antipsychotics i.e, antipsychotic polypharmacy (APP). This finding is less compared to studies done by Dutta SB et al.[26] and Ramdas et al.[32] however, it is more than that reported by Padmini D et al.[30] and Khanna et al.[33] Despite consistent recommendations for antipsychotic monotherapy, APP is a common practice in the treatment of schizophrenia with increased risk of adverse drug reactions, although it is not evidence-based.[34] A common reason for this is to gain a greater or more rapid therapeutic response than what has been achieved with antipsychotic monotherapy, but the evidence of risks and benefits for such strategy is equivocal.

Concomitant administration of psychotropics was identified in 42.42% and these can be justified in co-morbidities, treatment of adverse drug reactions or to boost efficacy of primary treatment.[35,36] About 22.7% patients received adjunctive benzodiazepine, with clonazepam being the most common one. Findings of the present study are below the range (29.9% to 63%) reported from various developed and developing countries.[37,38] Antidepressants were

used in 19% cases suggesting the coexistence of psychosis and depression as a common comorbidity in the hospital. Few psychotic patients (8.3%) were receiving mood stabilizers, which is significantly less than the figures of 19.5 to 23.7% reported in studies which have evaluated the usage of mood stabilizers from other part of the world.[39] As the use of polypharmacy for bipolar diseases is now an acceptable approach,[40] the use of multiple medications for treating varying manifestations of schizophrenia could also be acceptable. Anticholinergics were used only in 44.7% of the patients, reflecting their reduced usage with the increasing use of newer atypical antipsychotics.

CONCLUSION

To conclude, our study showed patients suffering from schizophrenia were mostly advised antipsychotic monotherapy. Atypical antipsychotics were prescribed more commonly than typical ones; olanzapine being the commonest antipsychotic prescribed. There is an increasing trend towards use of newer drugs for better compliance and lesser side effects. Other psychotropic medications prescribed as adjunctive treatment were antidepressants (escitalopram and fluoxetine), anxiolytics (clonazepam and lorazepam) and antimanics (carbamazepine). As the percentage of generic drug prescribing is low, the issue of frequent use of branded drugs needs to be addressed. Similar types of studies should be carried regularly in future to evaluate the changes in the pattern and its rationality.

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