

Original Article

TO STUDY THE PRESCRIBING PATTERN OF ANTIPSYCHOTIC DRUGS IN A TERTIARY CARE HOSPITAL OF ASSAM.

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Received: 27 Feb. 2014 Revised and Accepted: 12 Mar 2014

ABSTRACT

**Objective:** To study the prescription pattern of anti-psychotic drugs in a tertiary care hospital of Assam.

**Methods:** It is a retrospective, cross-sectional open label study carried out at the Dept. of Psychiatry, Assam Medical College, and Dibrugarh for a period of one month from 1/09/2012 to 31/09/2012. The prescription pattern of anti-psychotic drugs along with the pattern of various psychiatric diseases on either sex was studied.

**Results:** A total of 208 prescriptions were analysed. The most common disease was found to be schizophrenia. Total drugs prescribed were 459 in which oral 436 (94.98%), parenteral 23 (5.01%). Average no. of drugs per prescription was 2.20. It was seen that out of the 459 drugs the number of antipsychotics 228 (49.67%), central anticholinergic 97 (21.96%), sedative hypnotics 56 (12.20%), antidepressants 10 (2.17%). Antipsychotics given orally were 213 of which olanzapine 110 (51.04%), risperidone 38 (17.14%), chlorpromazine 28 (13.14%), aripiprazole 14 (6.57%), quetiapine 7 (3.28%), clozapine 4 (1.87%) were seen. Injectable antipsychotics were 15 of which haloperidol 11 (73.33%) and fluphenazine 4 (26.66%). Antipsychotics in combination prescription with same groups were 31 (14.90%), with antidepressants, sedative-hypnotics, anticholinergic were 168 (80.76%) and other agents were 21 (10.09) which included lithium, divalproex sodium, chlordiazepoxide sodium valproate and tiapride.

**Conclusion:** Various antipsychotic drugs were prescribed in the psychiatry ward of Assam Medical College and Hospital (AMCH), Dibrugarh and use of oral olanzapine was the most common. The most common disease was schizophrenia and injectable antipsychotic was haloperidol respectively.

**Keywords:** Prescription Pattern, antipsychotics, Schizophrenia, Olanzapine, Aripiprazole, Chlorpromazine.

INTRODUCTION

According to WHO, Drug utilization study is defined as a study of marketing, distribution, prescription and uses of drugs in a society highlighting on the resulting medical, social and economic consequences. Drug utilization research affords a baseline reference points about the effect of diverse interventions in prescribing the concerned drugs. [1]. Antipsychotics are a class of agents which are able to reduce psychotic symptoms in a wide range of conditions like schizophrenia, bipolar disorder, psychotic depression, senile psychosis, various organic psychosis and drug induced psychosis [2]. Antipsychotic prescription patterns are fundamentally different across countries and even regions due to variations in factors including health care policies, availability and cost of drugs, psychiatric training and preferred treatment modalities [3]. Psychosis is a symptom of mental illnesses characterized by a distorted or non-existent sense of reality. Psychotic disorders have different aetiologies, each of which demands a unique treatment approach. Common psychotic disorders include mood disorders (major depression or mania) with psychotic features, substance-induced psychosis, dementia and delirium with psychotic features, brief psychotic disorder, delusional disorder, schizoaffective disorder, and schizophrenia. Schizophrenia has a worldwide prevalence of 1% and is considered the prototypic disorder for understanding the phenomenology of psychosis and the impact of antipsychotic treatment, but patients with schizophrenia exhibit features that extend beyond those seen in other psychotic illnesses. Hallucinations, delusions, disorganized speech, and disorganized or agitated behaviour comprise the types of psychotic symptoms found individually, or rarely together, in all psychotic disorders, and are typically responsive to pharmacotherapy. In addition to positive

symptoms, schizophrenia patients also suffer from negative symptoms (like apathy, avolition, alogia), and cognitive deficits, particularly deficits in working memory, processing speed, social cognition, and problem solving that test 1.5-2 standard deviations below population norms [4]. Over the years many antipsychotics were made available in India some of which have stood the test of time and still used while some are no more marketed. Research focusing the use of antipsychotics in India has followed the trend in the west. However the drugs that are currently marketed are not been thoroughly studied in our country [5]. The current study is an attempt to look for the trend in the prescribing pattern in this part of north east India.

MATERIALS AND METHODS

It is a retrospective, cross-sectional and an open label study carried out at the Dept. of Psychiatry, Assam Medical College, and Dibrugarh for a period of one month from 1/09/2012 to 31/09/2012. The prescription patterns of anti-psychotic drugs along with the occurrences of various psychiatric diseases on either sex were studied. The permission to carry out the study was taken from the principal of the institution (Assam medical college, Dibrugarh). About 208 prescriptions were seen and recorded with their name, age, sex, diagnosis as per ICD-10, no. of drugs given per prescription, routes of administration, classes of agent used, in combination with same group and with other groups.

RESULTS

On reviewing the prescription the most common disease was found to be schizophrenia followed by acute and transient psychosis. Age wise it was seen that the diseases were most common in 21-30 years

age group. The psychiatric diseases were found to be more common in males (54.80%) compared to females (45.19%). The no. of drugs per prescription was 2.20. The total no. of drugs prescribed were 459. Of which oral medications 436 (94.98%) and parenteral route 23 (5.01%). Total drugs prescribed were 459 in which oral 436 (94.98%), parenteral 23 (5.01%). Average no. of drugs per prescription was 2.20. Out of the 208 prescriptions monotherapy was practised in 53.35% compared to polytherapy 46.63%. The no of drugs prescribed along with the percentage are as follows: Antipsychotics 228 (49.67%), central anticholinergic 97 (21.96%), sedative hypnotics 56 (12.20%), antidepressants 10 (2.17%). Antipsychotic given orally were 213 of which olanzapine 110 (51.04%), risperidone 38 (17.14%), chlorpromazine 28 (13.14%), aripiprazole 14 (6.57%), quetiapine 7 (3.28%), clozapine 4 (1.87%) were seen. Injectable antipsychotics were 15 of which haloperidol 11 (73.33%) and fluphenazine 4 (26.66%). Antipsychotics in combination prescription with same groups were 31 (14.90%), with antidepressants, sedative-hypnotics, anticholinergic were 168 (80.76%) and other agents were 21 (10.09) which included lithium, divalproex sodium, chlordiazepoxide, sodium valproate and tiapride.

## DISCUSSION

As per the NATIONAL HEALTH SERVICES (NHS), a guideline regarding the use of antipsychotics as first line agents it says that the first and second generation antipsychotics are equally efficacious but when no consensus is reached between their uses it is preferable to start the second generation ones. Various studies have seen that the second generation antipsychotics were having fewer side effects and though both groups were equally efficacious. Depot injections of antipsychotics and sedatives are to be used when there is extremely agitated behaviour and a component of anxiety [7]. Thus in my study it was seen that the second generation antipsychotics were used to treat the above mentioned conditions. And this has been suggested by other studies also [8].

The most common antipsychotic was olanzapine followed by risperidone; this was also found in a study carried out by (Lahon K. et al 2012) [9] and (Ghosh S. et al 2013) [6]. The no. of drugs per prescription was found to be 2.20. The WHO guidelines states that the number of antipsychotic drugs per prescription should be within 1.6-1.8 per encounter. But in our study this appears to be more. Studies done across Nigeria showed an average of 4.4 drugs per prescription and a similar study carried out in the United Arab Emirates showed it to be about 2.2.

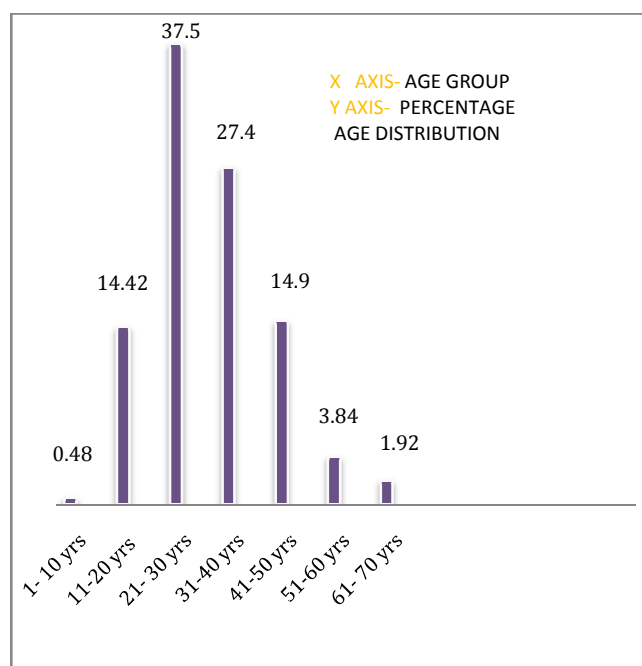
The percentage of injectable antipsychotics in my study was about 5.01% which was below the WHO reference values of 10.1- 17.0 as found in a field test done in south Nigeria [10]. LIMITATIONS: Our study was carried out with a relatively small sample size and for a very short period of time. As such factors like drug overdose, adverse effect profile, previous antipsychotic intake history as that would affect the prescribing pattern of the antipsychotic medications were needed to be evaluated. Also the various drug indicators like defined daily dose, indicators of patient compliance like availability of medicines and their cost also have significant influences in this type of studies. Our study is an attempt to look at scenario of drug usage in the hospital and further prospective studies can be carried out to get a more comprehensive data so that we can improve the drug utilization in our hospital. Polypharmacy is an important cause of irrational use of drugs which is often seen in case of antipsychotic prescription.

The definition of polypharmacy says that the use of six drugs or more per prescription, in our study it was found to be two and at the maximum five. Hence it can be said that polypharmacy was not done in our cases. Studies have clearly shown that polypharmacy was directly proportional to under prescribing. As it was seen that the probability of under prescription increased significantly as the no. of medicines prescribed was increased [9, 10]. Also the use of central anticholinergic drugs like trihexyphenidyl took care of the antiparkinsonian symptoms of the drugs; the use of sedatives along with antipsychotics was prescribed in acute cases along with mood stabilizers to ward off acute episodes that are in accordance with the studies done in India [9]. The distribution of diseases males (54.80%) were more as compared

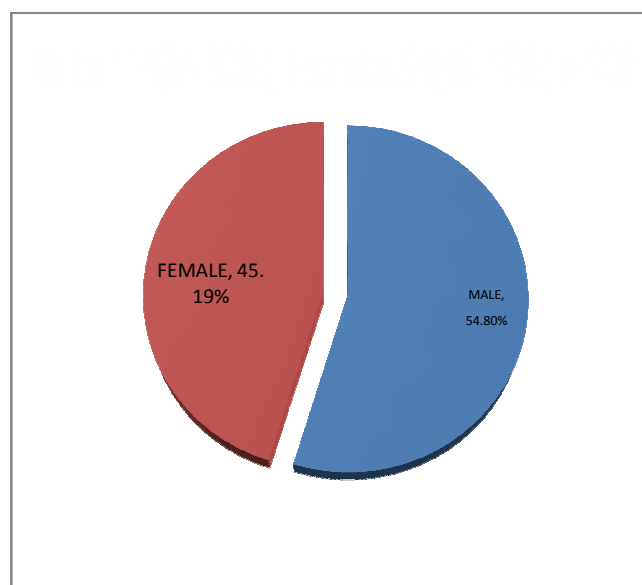
**Table 1: it shows the frequency of various diseases in the department of psychiatry**

ICD-10	%(N=155)
F20.0- paranoid schizophrenia	65(41.93%)
F23- acute and transient psychotic disorder	63(40.64%)
F20.3- undifferentiated schizophrenia	17(10.09%)
F31.2- bipolar affective disorder	4(2.85%)
F23.2- acute schizophrenia like psychotic disorder	3(1.93%)
F22- persistent delusional disorder	3(1.93%)

to females (45.19%) this was not in conformance with other studies [9]. The disease prevalence was found to be in the age group of 21-30 years as studies in India showed it in the 18-30 years age group [6]. It was also seen that maximum cases monotherapy was given about 53.36%. This was in accordance with the other studies [11]



**Fig. 1: it shows the distribution of diseases in the various age groups.**



**Fig. 2: it shows the distribution of disease in the both sexes.**

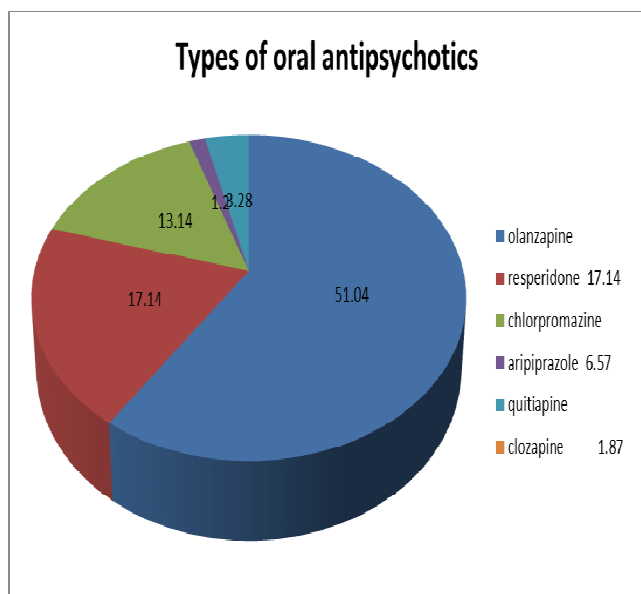


Fig. 3: shows the frequency of use of antipsychotic drugs

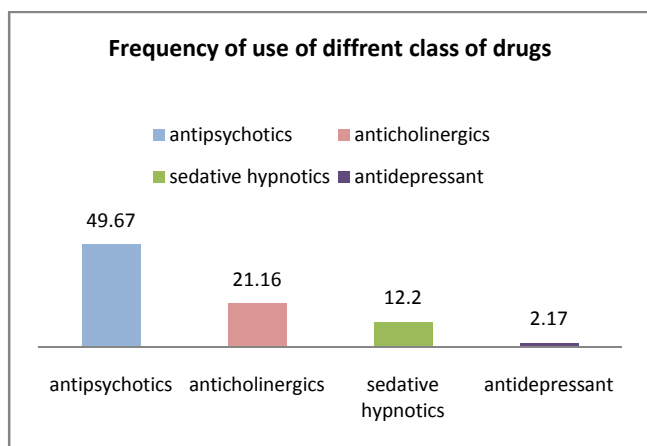


Fig. 4: shows the frequency of use of various classes of agents being prescribed.

#### CONCLUSION

To conclude, our study shows that atypical antipsychotics were the most common drugs prescribed in patients with psychotic illness and was in accordance with the treatment done in our country and abroad also it was at par with treatment protocol. Olanzapine was the most common medication used followed by risperidone orally. This was a study which was carried out to view treatment schedule in our hospital and its stand with respect to rest of the country. A more detailed study is necessary to see the efficacy, adverse reactions and usage of various other psychotropic medications in this part of the country.

#### ACKNOWLEDGEMENT

I am thankful to the head of department of psychiatry prof. Dr. H. K. Goswami for his enthusiastic and kind support and Dr. Kunal Deb Pgt psychiatry for giving valuable support for my study.

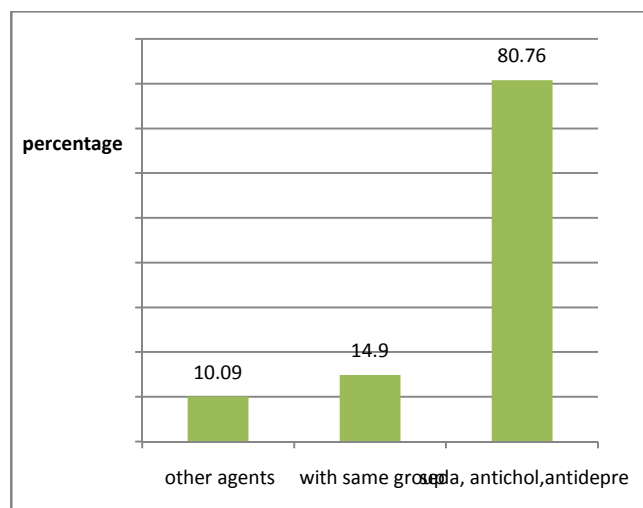


Fig.5: it shows the combination of antipsychotic drugs with the same group that is antipsychotic drugs then with sedatives anticholinergic, antidepressants and other agents like sodium valproate, divalproex sodium, lithium, chlorthalidone and tiapride.

#### REFERENCES

- Banerjee et al: Sociodemographic profile and utilization of antipsychotic drugs in schizophrenic inpatients: a cross sectional study from western region of Nepal. BMC Psychiatry 2013;13:96: 1-2
- Sharma HL, Sharma KK, Principles of Pharmacology. 2<sup>nd</sup> edition. Hyderabad: Paras; 2011.p.451-461.
- OdehJehad M. Bani.Prescription Pattern of Antipsychotics in Patients with Schizophrenia in North West-Bank[Dissertation]. Palestine:An Najah Univ.; 2013.101p.
- Meyer M. J. Pharmacotherapy of Psychosis and Mania. In: Bruton L, U Bruce, Knollman B, editors. Goodman and Gillman's The Pharmacological Basis of Medical Therapeutics. 12<sup>th</sup> edition. New York: Mc Graw and Hill; 2011. p.417-457.
- Awasthi A, Agarwal M, Grover S, Khan MKR. Research On Antipsychotics In India. Ind J Psychiatry 2010; 52 Suppl3:17-40.
- Ghosh S, Bhattacharya S, Dalai CK. Antipsychotic Prescribing Pattern In A Tertiary Care Hospital In Eastern India. Journal of Drug Delivery and Therapeutics. 2013; 3(4):38-42.
- Berkshire health care NHS foundation trust. Antipsychotic guidelines. Treatment of schizophrenia and psychosis. 2011:1-67.
- Dutta SB, Dhasmana DC, Bhardwaj R. Psychotropic drug utilization pattern among schizophrenics. Ind J Psychiatry 2004;46(4):381-382.
- Lahon K, Shetty HM, Paramel A, Sharma G. Pharmacoepidemiological study of antipsychotics in the psychiatry unit of a tertiary care hospital: a retrospective descriptive analysis. Int J Ntr Pharmacol Neurol Dis 2012; 2:135-41.
- Tamuno Igbiki. Prescription Pattern of Clinicians in Private Health Facilities in Kano, north-western Nigeria. Asian Pacific Journal of Tropical Disease. 2011;1(3):235-238.
- Bridler R, Ulbricht D. Atypical antipsychotics in the treatment of schizophrenia. Swiss Med Wkly 2003; 133:63-76.