

A Cross Sectional Study on Prescribing Pattern of Antipsychotic Agents for Mental Illness in A Tertiary Care Hospital

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ABSTRACT

Background: This study focus on the prescribing patterns of anti-psychotics, its use in comorbidity and their pharmaco-economic a prospective observational study carried out in the psychiatric department of the SIMS & RC, Bangalore over a period of 6 months including both in patients and out patients. The statistical analysis was performed using IBMSPSS version 26.

Result: The study shows that male patients was clearly predominant with 88 (57.5%) cases out of the 153 cases collected for the purpose of this study. In that 127 (90.1%) anti-psychotics were found to be prescribed in brand and in generic was only 14 (9.9%). Among this 141 anti-psychotics were prescribed. In that, 26 (18.4%) Olanzapines, 19 (13.5%) Risperidone and 24 (17%) Risperidone+Trihexyphenidyl. 120 (85%) prescription contains atypical anti-psychotics and 21 (15%) prescriptions contains typical anti-psychotics. In this study 98 of the cases was with comorbidities. Average cost of branded Anti-psychotics per prescription was found to be 10.2 INR, while the average cost of Anti-psychotics if prescribed in generic was found to be 2.43 INR.

Conclusion: This study shows that atypical antipsychotics are the most common antipsychotic class with olanzapine and risperidone as most prescribed drug. The drugs are mostly prescribed in brand form.

Keywords: Schizophrenia, Anti-Psychotics, Benzodiazepines, Pharmacoeconomics, Prescription pattern.

INTRODUCTION

In 1931, Sen and Bose showed that *Rauwolfia serpentina* is useful in the treatment of insanity. ECT was introduced in 1937 for the treatment of depression. In 1950 chlorpromazine was synthesized in France and its usefulness in psychiatric patient was demonstrated in 1952. Since the second half of the 20th century, extensive research has been carried out in psychopharmacology and we now have several useful drugs in the branch of pharmacology.

The use of antipsychotics as medication began in 1933 in France. The research around developing antihistamines evolved into the introduction of promethazine. This drug produced sedative side effects, so doctors started prescribing it before surgeries as a calming agent. Eventually, a doctor studied the derivatives of promethazine, altered it, and developed chlorpromazine. Prior to chlorpromazine, the options for treating psychotic patients were electroconvulsive therapy, hydrotherapy and putting patients in an insulin coma. Here by this study we focus on the prescription pattern and to know the use of these drugs in comorbid conditions.^{[[1],[2]]}

AIM: The aim of this study is to analyze the prescribing pattern of antipsychotic agents for mental illness.

METHODOLOGY

A cross-sectional study was carried out in the psychiatric department of the Sathagiri Institute of Medical Science and Research Centre, Bangalore over a period of 6 months including both In and out-patients department and excluding paediatrics, pregnant women, ICU patient. The results of collected data were analyzed using statistical analysis and

frequencies, percentages, mean values were calculated. The statistical analysis of collected data was performed using IBM SPSS version 26 statistical software.

Study Procedure:

The patient who are satisfying the inclusion criteria will be enrolled into the study with the help of patient consent form. All patients admitted in the ward will be reviewed on daily basis. Patients with known complaint will be interviewed with open ended questions regarding their past medical history and recruited if they met the study criteria. All psychiatric patient demographic details such as name, age, gender, education level, lifestyle, economic status , occupation, date of admission, reasons for admission, history of previous illness, social history were collected. The comorbid conditions associated among psychiatric patients will also be collected. Information of vitals, laboratory data, final diagnosis, current treatment drug regimen and other relevant data will also be collected from case sheets of patients. All the above mentioned data will be entered into the patient data collection form and analyze the pharmacoeconomics of prescribed antipsychotic agents with their generic form. Patients or their care takers are interviewed regarding patient demographic details. The results of collected data will be analysed using statistical analysis and frequencies, percentages, mean values were calculated.^{[[15]]}

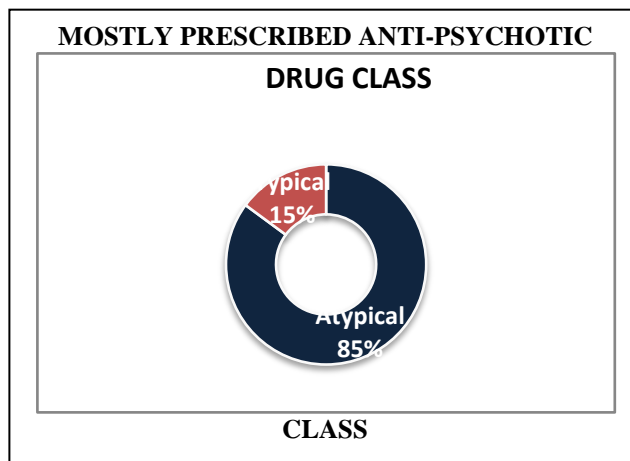
RESULTS

The study shows that male patients was clearly predominant with 88 (57.5%) cases while the female patients was found to be 65 (42.5%) and when age group of patients were categorized into 6 different age brackets viz, 18-30, 30-40, 40-50, 50-60, 60-70, 70-80 each age bracket had 57, 36, 34, 20, 5 and 1 patients in it respectively and each representing 37.3%, 23.5%, 22.2%, 13.1%, 3.3% and 0.7%. Out of the 153 cases collected for the purpose of this study among the prescriptions only 14 of the prescriptions contains anti-psychotics prescribed in generic representing only 9.9% of the study population. Where as various anti-psychotics brands was prescribed in 127 prescriptions representing 90.1% of the entire study population. Out of the 153 prescriptions which was collected for their respective cases, in that 120 (85%) prescription was contains atypical anti-psychotics and 21 (15%) prescriptions was contains typical anti-psychotics.

Out of this 153 prescriptions which was collected for their respective cases, among this 141 anti-psychotics were prescribed. In that 10 (7.1%) prescriptions was contains Amisulpride, 14 (9.9%) prescriptions was contains Aripiprazole, 15 (10.6) prescriptions was contains Clozapine, 17 (12.1%) prescriptions was contains Haloperidol, 26 (18.4%) prescriptions was contains Olanzapines, 16 (11.3%) prescriptions was contains Quitiapine, 19 (13.5%) prescriptions was contains Risperidone and 24 (17%) prescriptions was contains Risperidone+Trihexyphenidyl, These are the drugs prescribed among the prescription. In this study 98 of the cases was with comorbidities at the time of data collection, rest 55 cases were not. Out of 76 (77.6%) cases have been treated and 22 (22.4%) cases were untreated and , 55 of the cases was having no present comorbidities at the time of data collection representing 35.9 % of the study population. 11 cases (11.2%) was having hypertension and 9 cases (9.2%) was having diabetes mellitus as a comorbidity at the time of data collection, 10 cases (10.2%) was having liver disorder, 31 cases (31.6%) was having neurological disorder, 6 cases (6.1%) was having hematologic disorder and 2 cases (2%) was having thyroid disorder, while 31 cases (31.6%) had more than one comorbidities present. Average number of Anti-psychotics per prescription was found to be 0.92. Average cost of branded Anti-psychotics per prescription was found to be 10.2 INR, while the average cost of Anti-psychotics if prescribed in generic was found to be 2.43 INR.

DRUG	NO. OF CASES	PERCENTAGE
Brand	127	90.1
Generic	14	9.9
Total	141	100

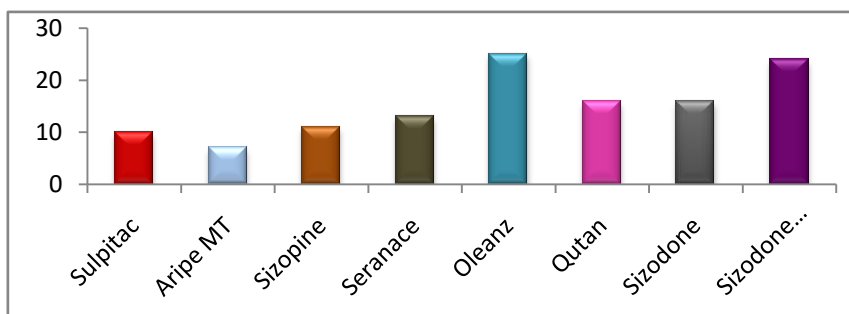
GENERIC AND BRAND WISE DISTRIBUTION



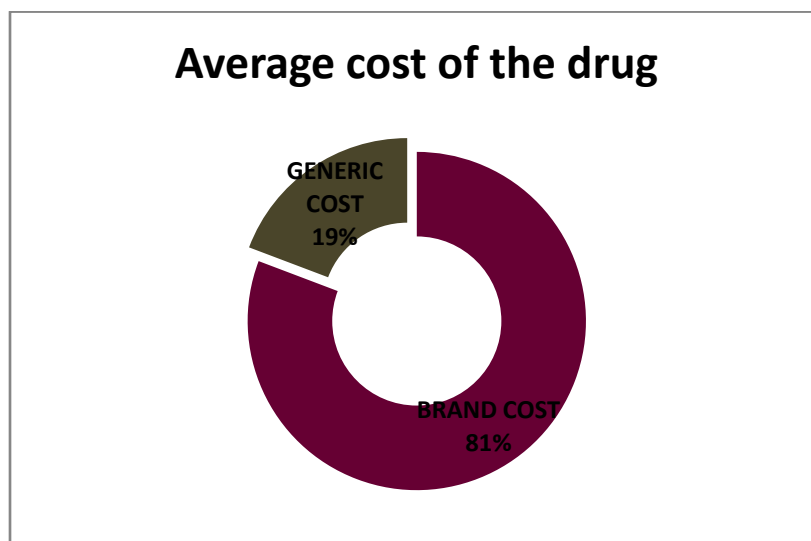
MOST PRESCRIBED ANTI-PSYCHOTIC IN GENERIC FORM

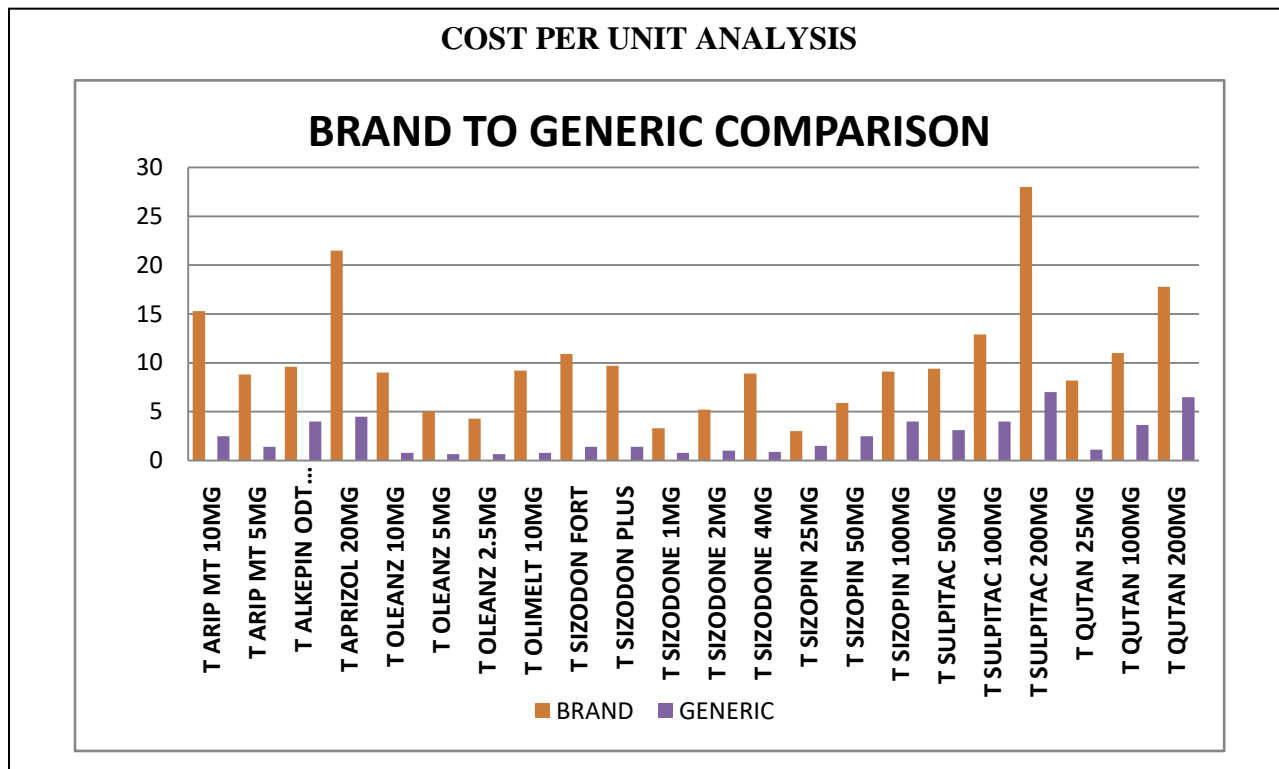
GENERIC DRUGS	NO. OF PRESCRIPTION	PERCENTAGE(%)
Aripiprazol	7	46.7%
Clozapine	4	26.7%
Olanzapine	1	6.7%
Resperidon	3	20.0%
Total	15	100.0%

MOST PRESCRIBED ANTI-PSYCHOTIC BRANDS



Average cost of the drug





DISCUSSION

This study offers and provides with an overall perspective and view of the Anti-psychotics used in patients of various psychiatry diagnosis in a tertiary care hospital.

The study shows that male patients were clearly predominant with 88 cases while the female patients were found to be 65 out of the 153 cases collected for the purpose of this study, the percentage occupied by both genders were 57.5% and 42.5% respectively, this pattern is similarly reflected in the findings of most of the published guidelines.

The age group of the patients were categorized into 6 different age brackets viz, 18-30, 30-40, 40-50, 50-60, 60-70, 70-80 each age bracket had 57, 36, 34, 20, 5 and 1 patients in it respectively and each representing 37.3%, 23.5%, 22.2%, 13.1%, 3.3% and 0.7% of the study population respectively with the age bracket 18-30 being predominant amongst other age groups.

The use of atypical antipsychotic drugs is favoured by most of the published guidelines. In our study the majority of the patients 120 (85%), were receiving the atypical antipsychotic medications particularly olanzapine and risperidone. Only less than 21 (15%) patients received the typical antipsychotics. This is in agreement with the general findings that clinical efficacy and safety of atypical new generation antipsychotic medications are shown to be more than the conventional antipsychotics.

The frequency of various diseases in the department of psychiatry are Schizophrenia 58 (37.9%), psychosis 25 (16.3%) BPAD 12 (7.8%) OCD 9 (5.9%) and we also seen that 23 (15%) were seen with multiple diagnosis Others 17 (11.1%). Other less common identified diseases like panic attack, IDD, Dissociative disorders are seen. It shows that schizophrenia is the most common psychotic illness and second comes with psychosis condition and then multiple conditions like OCD with BPAD or Schizophrenia, BPAD with Psychosis or depression etc.,

Further the study shows use of other class of drugs in mental illness like 16 (10.1%) prescription contains Antidepressants, 21 (13.2%) prescriptions contains Antimuscarinics, 92 (57.9%) prescriptions contains Benzodiazepines and 30 (18.9%) prescriptions contains SSRIs. The reason for the use of these drugs might be to reduce the drug related problems arising from antipsychotic drugs.

In our study we also found that average drug per prescription is 0.94 which is a directly opposite to studies of Pinaki c et al where poly therapy was seen of 80.35% which suggest that to reduce the adverse reaction from antipsychotics rather anti depressents, benzodiazepine classes were used. Furthermore by our study we got to know that prescriptions containing atypical antipsychotic drugs also contained antiparkinsonian agents due to their protective action against extrapyramidal side effects of the neuroleptic drugs. As it is proved that the extrapyramidal signs and symptoms are more common with typical antipsychotic medication. The mostly prescribed antiparkinson drug is trihexyphenidyl.

By this study we found that the mostly prescribed drugs are Olanzapines 26 (18.4%), Amisulpride 10 (7.1%), Aripiprazole 14 (9.9%), Clozapine 15 (10.6%), Haloperidol 17 (12.1%), Quetiapine 16 (11.3%), Risperidone 19 (13.5%), and also found that Risperidone + Trihexyphenidyl 24 (17%) these results are similarly reflected in most of the published guideline. But the findings in the study carried out by Shankar k et al in delhi would disagree as they found that out of their cases risperidone 44.71% were prescribed and next to it olanzapines 34.81%.^{[[13]]}

In this study we found that 98 (64%) out of 153 cases having comorbid condition, the mostly observed comorbid conditions were Neurological disorders 31 (31.6%), Hypertension 11 (11.2%), Liver disorders 10 (10.2%), Diabetes mellitus 9 (9.2%) and multiple conditions were noted 29 (29.6%), Thyroid disorders 2 (2%), Hematological disorders 6 (6.1%) in this 76 (77.6%) were treated for comorbidities while 22 (22.4%) were not given with any treatment this is to reduce the patient related complications in the cases which are treated the treatment are given after mental health are minimally stabilised or doses are adjusted.

In this study we found that, the drugs prescribed in brand form were higher in percentage 90.1% which is opposite to the findings of Pinaki C et al where generic is more that is 93.7% which is due to the above study was conducted in a government hospital due to free supply of medicines.^{[[14]]}

In this study we compared the mostly prescribed brand with their available generic drugs and found that average cost per unit drug if prescribed in brand cost 10.2 INR and if the same is prescribed in generic it will cost only 2.43 INR per unit drug which shows that there is a five time difference in brand and generic so by this study we suggest if generic drugs are prescribed it can benefit the patient minimising the cost of treatment since most psychiatric patients has to take a long term treatment.

CONCLUSION

This study shows that atypical antipsychotics with 85% are the most common antipsychotic drugs prescribed in patients with mental illness. The most common medication is olanzapine (18.4%) and followed by risperidone (13.5%).

Further study shows that Shizophrenia with 37.9% is the most diagnosed condition and 153 cases males (57.5%) are mostly affected and when considering the age group those who are below 30 (37.3%) are mostly affected and treated for mental illness. The drugs are mostly prescribed in brand form (90.1%). 64.1% is having comorbid condition and out of which 77.6% has been treated for their comorbid condition which suggest that proper care is given based on their severity of their conditions.

When we take into consideration the economic status of the Indian population, where the majority of the people belong to economically backward section, the cost of treatment becomes of great importance. Therefore, generic alternatives of the antipsychotics can be used which will tend to reduce the overall treatment cost and thus reducing the economic burden placed on the patients and users of antipsychotics.

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