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## Prescribing Pattern of Antipsychotics In A Tertiary Care Hospital, Salem: A Retrospective Study.

B Arul<sup>1\*</sup>, E Manivannan<sup>2</sup>, R Kothai<sup>1</sup>, Ajiya Rajan<sup>1</sup>, Akhil Babu<sup>1</sup>, AksaAnu Mathew<sup>1</sup> and Aleena Jose<sup>1</sup>.

<sup>1</sup>Department of Pharmacy Practice, Vinayaka Mission's College of Pharmacy, Vinayaka Missions University, Salem- 636008, Tamil Nadu, India

<sup>2</sup>Dept. of Pharmacology, VMKV Medical College & Hospitals, Salem-636308, Tamil Nadu, India

### ABSTRACT

Psychiatric disorders are one of the major causes of morbidity. Development of newer drugs like selective serotonin reuptake inhibitor (SSRIs) and atypical antipsychotics has altered the treatment paradigms. Keeping this in mind, we conducted a study to delineate the various drugs used in psychiatric disorders, to find discrepancies, if any, between the actual and the ideal prescribing pattern of psychotropic drugs. Retrospective analysis of 200 patients admitted in the psychiatry department over a period of six months from November 2015 to April 2016 in a tertiary care hospital, Salem, TamilNadu for analyzing the drug use pattern, drug-drug interactions. The prescriptions were analyzed using descriptive statistics and results were expressed in percentage. A total of 761 drugs were prescribed and the average number of drugs per prescription was found to be 3.805. The studies showed that Risperidone (47.3%) was the most commonly prescribed antipsychotic drug and the most common disease was Depression (27.5%). When drug-drug interactions were checked and 23 were found. The therapy provided was efficacious but there is a need to emphasize to all prescribers to adhere to the prescription format and to keep the average number of drugs per prescription as low as possible. There is a clear need for the development of standard treatment guidelines and educational initiatives to encourage the rational and appropriate drug use.

**Keywords:** Prescribing pattern, Psychiatry, Drug interactions

*\*Corresponding author*

## INTRODUCTION

Antipsychotics (also known as neuroleptics or major tranquilizers) are a class of psychiatric medication primarily used to manage psychosis (including delusions, hallucinations, or disordered thought), particularly in schizophrenia and bipolar disorder, and are increasingly being used in the management of non-psychotic disorders[1]. Antipsychotics are effective in both the acute and maintenance treatment of schizophrenia and other psychotic disorders. They differ in their pharmacology, kinetics, overall efficacy/effectiveness and tolerability, but perhaps more importantly, response and tolerability differs between patients. This individual response means that there is no clear first-line antipsychotic suitable for all.

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. Psychosis is a symptom of mental illnesses characterized by a distorted or non-existent sense of reality[2]. Psychotic disorders have different etiologies, 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. Hallucinations, delusions, disorganized speech, and disorganized or agitated behavior comprise the types of psychotic symptoms found individually, or rarely together, in all psychotic disorders, and are typically responsive to pharmacotherapy[3]. 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. The current study is an attempt to look for the trend in the prescribing pattern in this part of north east India[4]. The objective of the study is to identify good and bad prescribing practices and to encourage rational prescribing thereby providing guidance to help in solving problems associated with drug therapy.

## MATERIALS AND METHODS

Case files belonging to 200 patients admitted in the department of psychiatry over a period of six months from November 2015 to April 2016 in a tertiary care hospital in Salem, Tamil Nadu was taken to evaluate the prescribing pattern study. A detailed Retrospective analysis was performed by noting down the details of the prescription chart. Patient related information including age, sex, disease and contact details was collected. Information related to the use of drugs such as name of the drug, number of drugs, dosage form, dosing frequency, duration, route of administration, quantity to be used or applied and potency were also recorded. The data was analyzed using descriptive statistics. Ratios, proportions and percentages were used to describe the data.

## RESULTS

From the Psychiatry department, 200 prescriptions were collected and subjected to demographic analysis. It was found that 101(50.5%) patients were male and 99(49.5%) patients were female. Among them, patients between the age group of 31-40 (34%) were more affected with psychotic disorders.

Among the total 169 antipsychotic drugs prescribed 62.1% were from the National Essential Drug List of India (NLEM). WHO recommends the average number of drugs per prescription to be 2.0 but in our study it was found to be 3.805 which were higher.

About 50.45% of drugs were prescribed under their respective generic name while brand names were used for 49.55% of drugs. The most commonly prescribed class of drugs were antipsychotics (22.2%) followed by antidepressants (14.45%), and sedative (13.53%) and it was shown in fig. no: 1. Apart from other antipsychotic drugs, risperidone (47.33%) was the most commonly prescribed drug as it is effective for treating psychotic diseases (with minor extrapyramidal side effects.) and it was followed by haloperidol (20.71%), and olanzapine (18.34%) and was illustrated in fig. no: 2. Among the prescriptions, 51 prescriptions were having 3 drugs followed by 45 prescriptions having 5 drugs and 44 prescriptions were having 4 drugs. Among the total number of antipsychotics prescribed, 67.45% of them were given by the oral route followed by parenteral route (32.5%).

Depression (27.5%) was found to be the most common psychiatric disease in the department of psychiatry during the study period in the hospital. It was followed by ADS (19.5%), schizophrenia (15%), psychosis (14%) and was mentioned in fig no: 3. A total of 200 prescriptions were analyzed of which 89% was monotherapy and rest 11% was polytherapy.

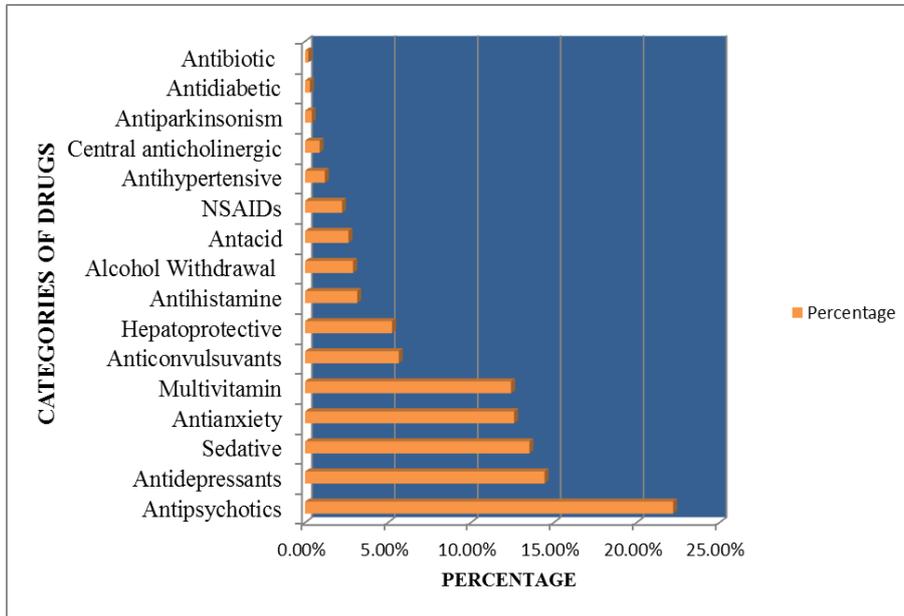


Fig 1: Pattern of drugs prescribed

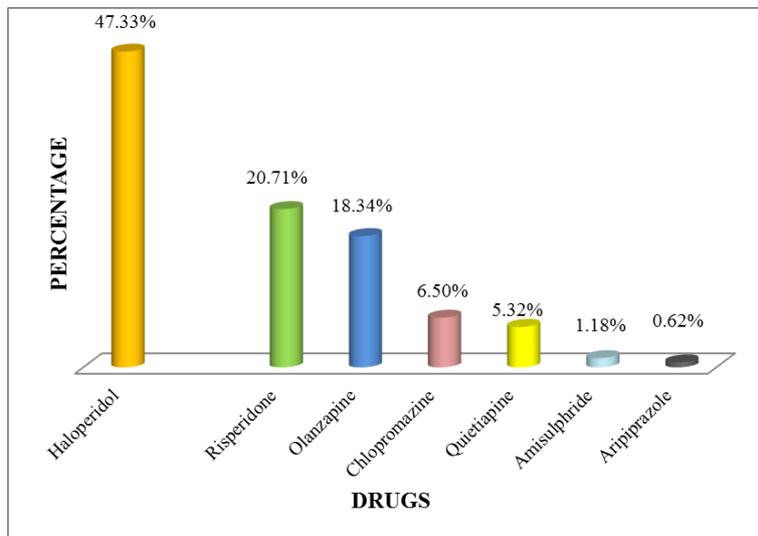
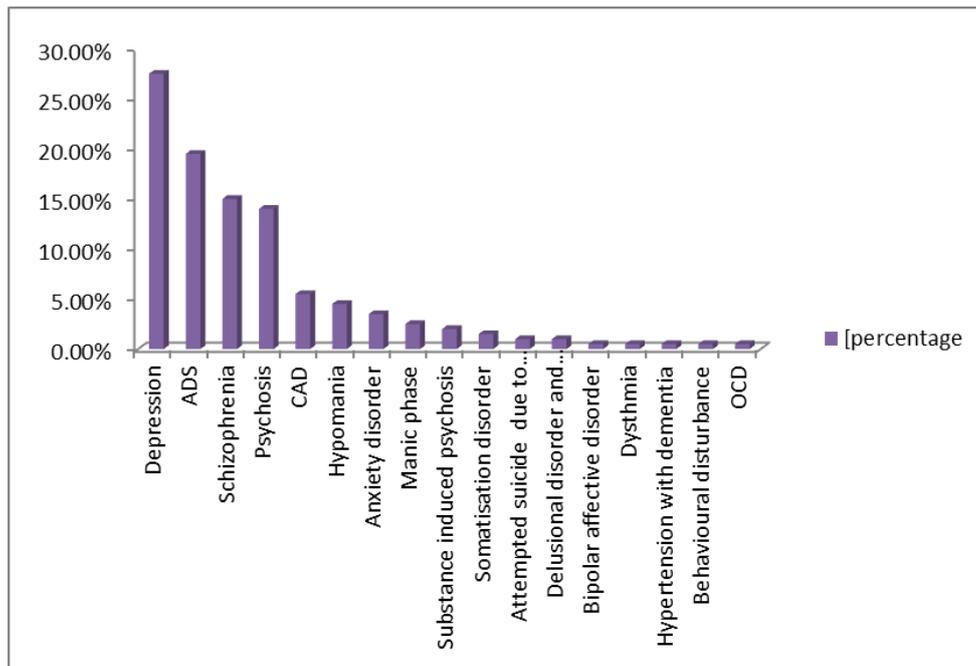


Fig 2: Most commonly prescribed antipsychotic drug



**Fig 3: Distribution of cases based on disease**

From the total prescriptions analyzed 50 prescriptions were having interactions. Among them 23 drug-drug interactions were identified. From the total interactions, 22 drug-drug interactions were synergistic and 1 drug-drug interactions were antagonistic. Among them 15 interactions occur between lorazepam and olanzapine which is most commonly found and was followed by lorazepam and haloperidol which comprises 5 interactions.

**DISCUSSION**

A prescription may be taken as a reflection of the physician’s attitude to the disease and the role of the drug in its treatment. It also provides an insight into the nature of the healthcare delivering system. The role of the psychiatrist in ensuring compliance to the drug treatment cannot be over emphasis .The capacity of the therapist to manage and control the treatment is an essential part of the therapeutic relationship between the doctor and the patient.

The average number of drugs per prescription in an audit is an important index of 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 over prescribed and misused. WHO recommends the average number of drugs per prescription to be 2.0 but in our study it was found to be 3.805 which is higher. It is clear that there is a good deal of tendency towards polypharmacy in Psychiatry department.

Out of 761 drugs, majority of the drugs were purely prescribed based on the generic names. In general, generic drugs are less expensive as compared to the brands that contain the same active ingredient. Our study suggested that male patients receive more psychotropic medication than female patients. This may be due to the higher incidence and prevalence of mental health morbidities as well as the total visits in psychiatric clinics among males than females. This findings has resemblance with the research study conducted in Karnataka [5].

Apart from other antipsychotic drugs, our study findings showed that risperidone (47.33%) were the most commonly prescribed class of antipsychotic drugs, followed by which was haloperidol and olanzapine which was similar to the study carried out by Trifiroet *al*[6] antipsychotics as the most commonly prescribed drugs . Among the total number of drugs prescribed, most of them were prescribed by oral route followed parenteral which was similar to the study carried out by Pranab Kumar *et al*[2] showing to oral route were most commonly prescribed. Atypical antipsychotics are used more frequently than typical antipsychotics, our study

suggest that most of the psychiatrists are comfortable with using the atypical antipsychotic in most of their patients. Moreover, the prescription pattern is possibly influenced by the available guidelines and literature, which suggest that these medications are efficacious in both positive and negative symptoms.

Out of 200 cases, there were 50 prescriptions having drug-drug interactions. When drug-drug interactions were checked via Medscape online drug interaction checker, 23 drug-drug interactions were found. Among them, synergistic effects were most common type of interactions. Prescription of drugs from the essential medicines list (Indian & WHO) was very high. The primary purpose of NLEM is to promote rational use of medicines considering the aspects i.e., safety and efficacy which was similar to the study carried out by Karan B *et al* [7] that most of drugs from NLEM.

### CONCLUSION

From the above study it may be concluded that, the therapy provided in the above prescriptions were efficacious but there is a need to emphasize to all prescribers to adhere to the prescription format and to keep the average number of drugs per prescription as low as possible. Educational interventions among the doctors as well as students should be carried out in order to promote rational drug use. Various intervention strategies like introduction of hospital formulary, essential drug list and prescription control by institutional regulatory authority should be planned. There is a clear need for the development of standard treatment guidelines and educational initiatives to encourage the rational and appropriate drug use. Periodic evaluation of the prescribing pattern is necessary to improve prescribing standards.

Further studies in patients compliance with treatment and the dropout rate from the psychiatry treatment are urgently required. The present study could serve as a frame work upon which further studies in prescription audit of psychotropic drug can be launched to investigate the scope for improvement in prescribing practices.

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