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Original Article

First prescription analysis study of depression in a tertiary hospital

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ABSTRACT

Objectives: To delineate preferred classes of drugs used and their utilization pattern in patients newly diagnosed with major depressive disorder (MDD). To find differences, between the preferred and ideal prescribing pattern of anti-depressants in Indian context. To analyze the drug utilization pattern observed and reason(s) for deviation(s).
Materials and methods: Patients diagnosed with MDD at the Psychiatry OPD, in a tertiary care hospital for the first time. A questionnaire based study including the first prescription by the Psychiatrist for a patient of MDD with at least one anti-depressant.
Results: Participants consisted of males (62%) and females (38%). 39% of them belonged to age group of 21 – 30 years and 59% belonged to Class IV socio-economic status. Escitalopram (46%) was commonly prescribed anti-depressant. Prescriptions with brand names were 80% and generic names were 20%. Average cost per prescription was Rs. 57.72 ± 39.98.
Conclusion: Escitalopram was the most commonly used anti-depressant. With advent of newer drugs, a shift from existing trend is advisable to psychiatrists. With wide variation of prevalence of psychiatric disorders in India, it is preferred to conduct more studies frequently and keep in pace with ideal prescribing pattern.

Keywords: Drug utilization studies, anti-depressants, prescribing pattern, depression

INTRODUCTION

Drugs play an important role in improving human health and promoting well-being. However, to produce a desired effect, they have to be safe, efficacious and need to be used rationally. We need to realize that inappropriate use of drugs represent a potential hazard to the patients and unnecessary expense. Therefore to ensure safe and effective treatment, a periodic review of pattern of drug utilization needs to be done.

Drug utilization studies (DUSs) are used as a potential tool in the evaluation of health care systems. These are also powerful exploratory tools to ascertain the role of drugs in the society. DUS is defined as "the marketing, distribution, prescription and use of drugs in the society, with special emphasis on the resulting medical, social and economic consequences".[1] The aim of DUS is to analyze the present state and the new developing trends in usage of drugs at various levels of health care systems. The rapidly expanding field of psychopharmacology is challenging the traditional concepts of treatment of psychiatric disorders and research, and is constantly seeking new and improved drugs to treat psychiatric disorders. In this way, psychiatrists are continuously exposed to newly introduced drugs that are claimed to be safe and more efficacious than the traditional drugs which have a higher adverse drug reactions (ADRs) profile. [2] Psychiatric medications are widely prescribed and the utilization of these drugs is a topic of interest. People with chronic conditions like hypertension, diabetes mellitus, commonly experience concurrent mental health problems. As a result of these co-morbid conditions, these patients have a long duration of treatment which indirectly leads to polypharmacy. Polypharmacy is more often inappropriate and may lead to ADRs, drug interactions, prescribing cascade and higher costs. It is often associated with decreased quality of life, decreased mobility and cognition. [3]

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Newer drugs are known to be expensive and unaffordable to majority of the patients, especially in developing countries. Although psychotropic drugs have had a remarkable impact in psychiatry, their utilization in actual clinical practice, effectiveness and safety in the real-life situation needs a continuous study. [4]

Major depressive disorder (MDD) is the most common ailment among the psychiatric disorders. The prescribing patterns of anti-depressants have changed over the last few years, with conventional drugs like tricyclic anti-depressants and mono-amine oxidase inhibitors being gradually replaced by selective serotonin reuptake inhibitors and novel anti-depressants. [5]

As there is no sufficient data available on their use in our setup, the present study was carried out to analyze the pattern of anti-depressant drug utilization in the psychiatric OPD at a tertiary care hospital.

OBJECTIVES

1. To delineate preferred classes of drugs used and their utilization pattern in patients newly diagnosed with major depressive disorder (MDD).
2. To find differences, between the preferred and ideal prescribing pattern of anti-depressants in Indian context.
3. To analyze the drug utilization pattern observed and reason(s) for deviation(s).

MATERIALS AND METHODS

Source of data

Study subjects: The study population consisted of all the newly diagnosed patients of major depressive disorder attending the tertiary care hospital.

Inclusion criteria

1. Patients of any age group and of either sex attending the Psychiatry OPD and consenting to participate in the study were included.
2. Newly diagnosed cases of MDD whose prescription contained at least one anti-depressant drug.

Exclusion criteria

1. Patient's whose psychiatric diagnosis was not certain.
2. Non consenting patient/relative.
3. Insufficient data (age, marital status, registration number etc).
4. Old case of psychiatric disorder.
5. Newly diagnosed case whose prescription did not contain anti-depressant medication.
6. Prescriptions with same OPD numbers

Study area: Psychiatry OPD, SDM College of Medical Sciences and Hospital

Method of data collection

Study design: A hospital based cross sectional study was conducted.
Sample size: 100

Sampling procedure: Data was collected everyday by going to the psychiatry OPD till the sample size of 100 was attained.

Sampling Instrument: A questionnaire based study was conducted in the psychiatry OPD. First prescription written by the Psychiatrist for a newly diagnosed patient of major depressive disorder and containing at least one anti-depressant medication irrespective of his/her age and gender were included.

Present study: The questionnaire consisted patients demographics like age, gender (male/female), marital status (Married/ unmarried/ divorced/ separated), religion (Hindu/ Muslim/ Christian/Others), socio-economic status according to Modified B.G. Prasad's socio-economic classification [6] and registration number. Patient's diagnosis was made by the psychiatrist by using the ICD-10 criteria. Prescription details like date, number of drugs prescribed, names of individual drugs (generic/branded), whether the prescribed drug(s) was available from the hospital pharmacy, the dose of the drug, the dosage form, dosing schedule and duration of treatment were noted down in the questionnaire based study. The costs of the drugs were calculated based on the availability of the drug from the hospital drug store. Cost of the drugs prescribed from outside pharmacies was calculated from the National Drug Index.

Data analysis: Descriptive statistics were applied and data was analysed using proportions and percentages. Data entry was done using Microsoft Excel and analysis was carried out with the help of Statistical Package For Social Sciences – 20.0 (SPSS Statistics -20.0). Cost analysis was done.

RESULTS

A total of 100 prescriptions were analyzed for various parameters during the tenure of this study in the Psychiatry OPD of SDM College of Medical Sciences and Hospital, Dharwad. On analysis of the data collected, the following findings were noted:

In this study it was found that the percentages of male and female participants were 62% and 38% respectively. Majority of the patients belonged to the age group of 21 – 30 years (39%) followed by 31 – 40 years (24%). 11% of the present study participants were illiterate, 10% had received primary education, 25% high school, 21% secondary education, 32% participants were graduates and 1% postgraduates. Distribution of study participants as per their occupation showed that 31% of them were agriculturists followed by 21% who were involved in business, least being labourers (3%). In the present study 71% participants were married, 27% unmarried and 2% participants were divorced. According to Modified B. G. Prasad Classification[6] majority (59%) study participants were of class IV socio-economic status, followed by (24%) class III socio-economic status, 10% class II and 7% class I. Escitalopram (46%) was the most commonly used anti-depressant followed by mirtazapine (18%), fluoxetine (12%), amitriptyline (8%), dothiepin and sertraline (6%) each, duloxetine (3%) and desvenlafaxine (1%) (Figure 1). Percentage of prescriptions with brand names was 80% and generic names were 20% (Figure 2). Average cost per prescription was Rs.57.72 ± 39.98.

DISCUSSION

MDD is a leading cause of disability and premature death. According to the WHO it is estimated that 350 million people suffer from depression around the world, and the burden of depression is 50% higher for females than in males.[7] In the present study we found that majority of the study participants were males (62%) when compared to females (38%). In a study by *Deshmukh et al* gender wise distribution of study participants showed similar results where males (56.89%) outnumbered females (43.10%).[8] In another similar study conducted in South India similar findings were observed where males (59.52%) outnumbered females (40.47%).[9] In a study from Assam, the psychiatric diseases were found to be more common in males 113 (54%) than in females 95 (45%).[10]

Majority of the patients belonged to the age group of 21 – 30 years (39%) followed by 31 – 40 years (24%). In a study conducted in Burdwan by Karak et al showed similar age wise distribution of the study participants ranging from 21-40 years.[11] 11% of the present study participants were illiterate, 10% had received primary education, 25% high school, 21% secondary education, 32% participants were graduates and 1% postgraduates, accounting to a total of 89% literacy rate.

Majority of the study participants in the present study were agriculturists accounting to 31% of the study participants, 17% of the study participants were employees, 16% of the study participants were housewives, 21% participants were involved in business and 3% were labourers and 12% of the study participants were students . In a multi-centric study of psychiatric prescriptions conducted in various parts of India showed that 48.9% were employed and 51.1% were unemployed.[12] This indicates that farmers and employed population are more prone to psychiatric illnesses.

In the present study 71% participants were married, 27% unmarried and 2% participants were divorced. In a similar study it was observed that 74.04% were married, 24.04% were unmarried 1.92% were divorced. In another multi-centric study conducted by psychiatrists it was seen that 22% participants were single, 71.8% were married and 6.2% participants were either widowed, divorced or separated, indicating that psychiatric illnesses are seen more in married people.[12] Out of 100 prescriptions analysed in the present study we found that majority of the study participants belonged to class IV socio-economic status (59%), followed by 24% class III, 10% class II, 6% class I and 1% class V being the least. Thus, lower socio-economic status predisposes a person to psychiatric illness especially Class IV.

Out of the prescriptions analyzed in the present study we found that Escitalopram (46%) was the most common drug used followed by mirtazapine (18%), fluoxetine (12%), amitriptyline (8%), dothiepin and sertraline (6%) each, duloxetine (3%) and desvenlafaxine (1%). A study conducted by *Kingshuk Lahon et al* it was seen that duloxetine (56.5%) was the most common prescribed drug followed by escitalopram (25.5%) and mirtazapine (19.4%).[5] In another study conducted Lucknow it was seen that duloxetine was the most commonly prescribed antidepressant followed by escitalopram and mirtazapine.[13] In another study conducted in Nagpur it was seen that escitalopram (32%) was the most commonly used drug followed by fluoxetine (20.5%) and nortryptyline (17.75%).[14] The American psychiatric association guidelines confirms that SSRIs are the first choice agents which are unanimously used.[5]

When we compared the brand and generic names in the present study we found that the percentages of prescriptions with brand names were 80% and generic names were 20%. In a study conducted by *Mukherjee et al* it was seen that the percentage of prescriptions with brand names were 17% and generic names were 83%.[15] Average cost per prescription was Rs.57.72 ± 39.98. Most of the

patients who visited our hospital OPD belong to Class IV socio-economic status. Generic drug prescription reduces the treatment cost of the patient and hence reducing the burden. Therefore, it is advisable to shift the drug prescribing to generic drugs so that it would be cost effective to the patients.

LIMITATIONS OF THE STUDY

The study was based on the first prescription of the patients. A follow up study would be a better determining factor for the analysis of prescriptions, to see if there were any changes in the drugs prescribed on the longer run, differences in the cost of the drugs prescribed, side effects and even the compliance of the patients to the drugs.

A convenient sample was considered for our study. Hence a bigger sample size with studies being conducted in various other institutions would be preferable.

Figure 1 :Anti-depressants prescribed by the psychiatrists

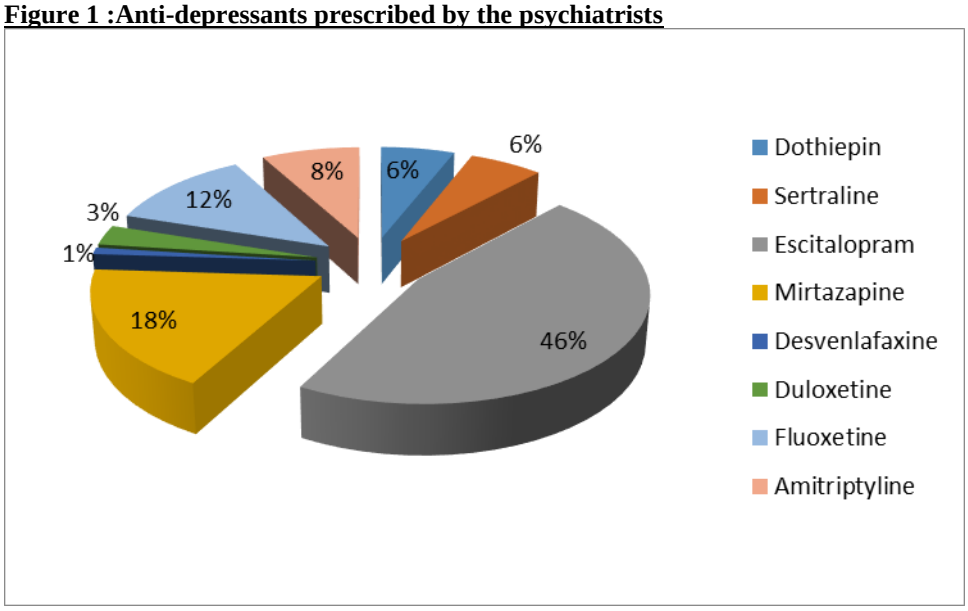
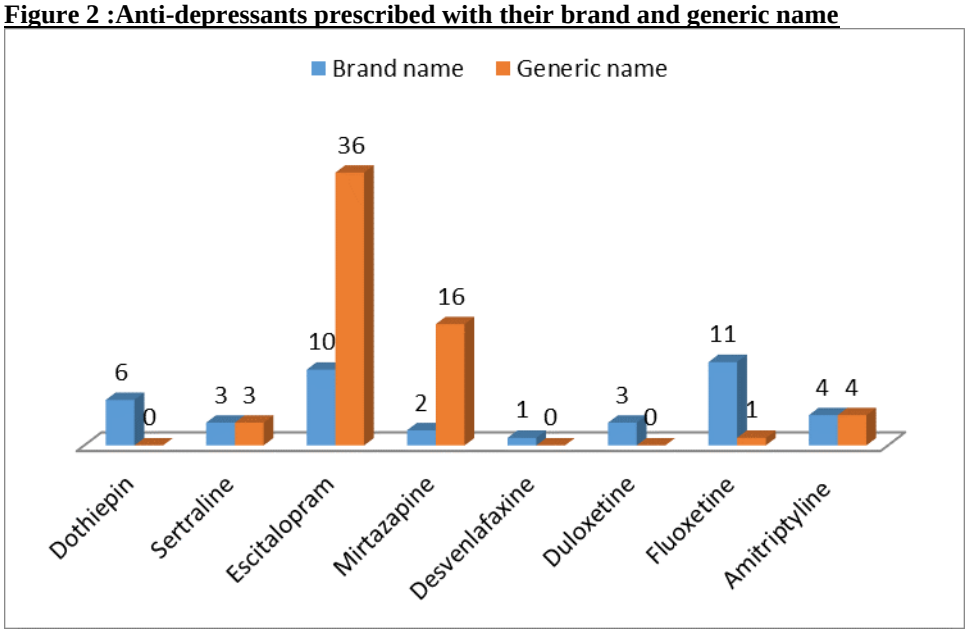


Figure 2 :Anti-depressants prescribed with their brand and generic name



CONCLUSION

In the present study it was observed that more than half of the patients who were diagnosed with psychiatric disorders were males. Maximum number of patients belonged to the age group of 19-29 years. Psychiatric illnesses were more prevalent among the literate population belonging to Class IV socio-economic status. It was also

observed that farmers and employed population were more prone to psychiatric illnesses. The married population were more prone to psychiatric disorders, may be due to family disorganization, the birth of a child, discovery of an extramarital affair, onset of a serious illness, announcement of intent to divorce or problems with children or at work.

The present study concludes that there is a shift from using TCAs to SSRIs and Escitalopram was the most commonly used SSRI in the present study. SSRIs are generally free from sedative effects and safer at higher doses. It was seen that psychiatrists tend to prescribe SSRIs when compared to newer anti-depressants. With the advent of newer drugs a shift from the existing trend would be advisable to the prescribing psychiatrists. In the present study it was also seen that majority of the drugs were prescribed with the brand names. Generic drug prescription would be advisable as most of the patients attending the Psychiatry OPD belonged to Class IV socio-economic class. Prescribing generic drugs would make it a cost-effective treatment.

FUTURE PROSPECTS

A multi-centric hospital based study with a larger sample size is required to find out the actual trend of using the conventional drugs over the newer drugs for depression. Along with this cost analysis can also be conducted. Newer drugs like duloxetine are costlier when compared to SSRIs. The cost per prescription per day can be reduced by prescribing more generic drugs when compared to the brand drugs.

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