Original Research Article

Psychotropic drug utilization in psychiatric outpatient department of a tertiary care teaching hospital in India

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ABSTRACT

Background: Although psychotropic medications have had a remarkable impact on psychiatric practice that legitimately can be called revolutionary, their utilization and consequences on real life effectiveness and safety in actual clinical practice need continuous study.

Methods: The current retrospective study of six months’ duration was designed to assess the utilization of antipsychotics and its prescribing pattern in a tertiary care hospital of south India, which included prescriptions of patients suffering from a psychiatric illness with at least one psychotropic drug of all ages and both sexes.

Results: Out of 150 cases reviewed, 46% were of schizophrenia, where male (60.67%) at higher incidence of psychiatric illness, and maximum patients were under the age group of 29-39 years (54.67%). In present study of 355 prescribed drugs 72.67% were psychotropic medications. As per World Health Organization/International Network for Rational Use of Drugs (INRUD) drug use indicators average number of drugs per prescription (2.37%), average number of psychotropic drugs per prescription (1.72%), psychotropic drugs prescribed as Fixed Dose Combinations (FDCs) was 26.36%, and percentage of drugs prescribed by generic name (91.08%). In our study, 48.09% of psychotropic drugs were utilized in the treatment of schizophrenia, diazepam (17.06%) was the only psychotropic medication distributed in the management of all three observed psychiatric disorders and the study showed a higher utilization of psychotropic drugs as FDCs (25.98%) in the management of schizophrenia.

Conclusions: The study advocated an overall rational utilization of psychotropic drugs with a fewer deviations due to socio-economic status of patients and prescription practices of healthcare providers.

Keywords: Drug utilization, INRUD, Prescribing pattern, Psychotropic medications, Retrospective study, WHO indicators

INTRODUCTION

Mental illness is associated with high levels of health service utilization and associated costs, and in developing countries these costs are mostly paid by the patient.¹ Psychiatric disorders form an important public health priority.² ³ Of the top ten health conditions contributing to the disability adjusted life years (DALYs), four are...
psychiatric disorders. The rapidly expanding field of psychopharmacology is challenging the traditional concepts of psychiatric treatment 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. Although psychotropic medications have had a remarkable impact on psychiatric practice that legitimately can be called revolutionary, their utilization and consequences on real life effectiveness and safety in actual clinical practice need continuous study.

Drug utilization research (DUR) was defined by the WHO in 1977 as “the marketing, distribution, prescription, and use of drugs in a society, with special emphasis on the resulting medical, social and economic implications”. The increased interest in DUR has resulted from recognition of the virtual explosion in the marketing of new drugs, the wide variations in the patterns of drug prescribing and consumption, and the increasing concern about the cost of drugs.

For the treatment of psychiatric disorders, a wide array of psychotropic drugs is available. During the past two decades, the development of newer drugs like Selective Serotonin Reuptake Inhibitors (SSRIs) and atypical antipsychotics have drastically changed the drug therapy protocols. There are very few studies that have evaluated the antipsychotic prescription patterns from India. The data available has come from public sector hospitals and represents the prescription pattern specific to that center. In this background, present study was designed to outline and assess the utilization of antipsychotics and its prescribing pattern in a tertiary care teaching hospital of India.

METHODS

Study design and settings
A retrospective cross-sectional study was conducted in a tertiary care teaching hospital of South India.

Study period
The study was performed for a period of 6 months from June 2016 to November 2016.

Ethical approval
The ethical approval was obtained from the Institutional Review Board before the commencement of the study (RIPER/IRB/2016/009).

Selection criteria
Prescriptions of patients suffering from a psychiatric illness of all ages and both sexes, with at least one psychotropic drug were selected.

Sample size
One hundred fifty prescriptions were assessed for retrospective drug utilization study from the hospital medical registries of medical record department.

Study procedure
The data of patients attending out-patient department of psychiatry unit, during the study period was collected from hospital registries of MRD, the information pertaining to patients’ demography, approximate date of diagnosis (in old cases) and definite date of diagnosis (in new cases), family and social histories, food habits, educational qualification, occupation, income, and life style were obtained and documented.

Furthermore, prescription information’s like number of drugs, names (both generic/brand) of drugs, FDCs prescribed, dose, dosage form, frequencies and duration of therapy was documented. The outcome of the current DUS on psychotropic medications was assessed as per WHO-INRUD drug use indicators.

Statistical analysis
All the obtained data were entered into a personal computer on Microsoft Excel Sheet and analyzed using GraphPad Prism 7. The variables were characterized by their frequencies, and differences between groups were assessed using Chi-square tests. The statistically significant level was set at <0.05 with a confidence interval of 95%.

RESULTS
The study was based on a sample of 150 participants suffering from psychiatric illness of all ages and both genders, prescribed with at least one psychotropic drug.

Characteristics of study participants and pattern of psychiatric disorders
Out of 150 cases reviewed 69 (46%) cases were of schizophrenia, the study showed a higher incidence of psychiatric illness in male (60.67%) and maximum patients were under the age group of 29-39 years (54.67%), the results of which are summarized in Table 1 (Demography and distribution of psychiatric disorders in age groups and gender).

Pattern of psychotropic drugs utilization as per the WHO/INRUD Drug use indicators
In present study, 150 prescriptions contained 355 drugs, out of which psychotropic drugs were 258, the prescriptions were thoroughly assessed as per WHO/INRUD drug use indicators and reported in Table 2 (Assessment of prescriptions as per WHO/INRUD drug use indicators).
Psychotropic drugs utilization in patients attending the psychiatric outpatient department

In present retrospective analysis, 48.09% of psychotropic drugs were utilized in the treatment of schizophrenia, 31.39% and 20.55% of psychotropic drugs were used in management of mood and anxiety disorder respectively, results of which are summarized in Figure 1 [Percentage of drug utilization in psychiatric disorders (n=150)].

Table 1: Demography and distribution of psychiatric disorders in age groups and gender.

<table>
<thead>
<tr>
<th>Psychiatric disorder</th>
<th>Age distribution (years)</th>
<th>Gender distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18-28</td>
<td>29-39</td>
</tr>
<tr>
<td>Schizophrenia (n=69)</td>
<td>8</td>
<td>43</td>
</tr>
<tr>
<td>Mood disorder (n=52)</td>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>Anxiety disorder (n=29)</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Total (n=150)</td>
<td>26</td>
<td>82</td>
</tr>
</tbody>
</table>

Table 2: Assessment of prescriptions as per WHO/INRUD drug use indicators.

<table>
<thead>
<tr>
<th>Average number of drugs per prescription</th>
<th>2.37%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average number of psychotropic drugs per prescription</td>
<td>1.72%</td>
</tr>
<tr>
<td>Psychotropic drugs as FDCs</td>
<td>26.36%</td>
</tr>
<tr>
<td>Percentage of drugs prescribed by generic name</td>
<td>91.08%</td>
</tr>
<tr>
<td>Prescription comprising of injectable preparations</td>
<td>1.94%</td>
</tr>
<tr>
<td>Percentage of the drugs supplied from hospital pharmacy</td>
<td>89.15%</td>
</tr>
</tbody>
</table>

Figure 1: Percentage of drug utilization in psychiatric disorders (n=150).

DISCUSSION

The current retrospective study of six months duration on psychotropic drugs utilization, in a psychiatry outpatient department showed a higher incidence psychiatric illness in male (60.67%), findings of which are similar to studies performed in Karnataka, Central India and Assam. In present study, schizophrenia was the most reported psychiatric disorder results of which supports the work of other studies performed Assam and Eastern India. In present study, the procreative age group of 29-39 years reported for the majority of all psychiatric disorder findings of which are similar to studies presented at Mumbai and Jamnagar, India. In present study the average number of psychotropic drugs per prescription was 1.72%, results of which are similar to studies presented at Mumbai and lower than studies of central India, Pondicherry and Kolkata and higher than study of Eastern India. The most commonly prescribed FDCs were trifluoperazine combination with trihexphenidyl (16.67%) in management of schizophrenia, findings of which is similar to study reported in Mumbai, Maharashtra, India.
In present study, psychotropic drugs prescribed by generic name accounts for 91.08%, findings of which are same to study reported in eastern India and higher than findings of central India, Karnataka and Mumbai, Maharashtra, India.12,14,15,19

**Drug use pattern observed in all three psychiatric disorders**

Diazepam was the only psychotropic medication distributed in the management of all three psychiatric disorders (schizophrenia, mood and anxiety disorders) which accounts for 17.06% the total psychotropic drug utilized, findings of which is similar to study reported in Mumbai, Maharashtra, India.15 Efficacy data support the use of diazepam in treating prodromal and early warning signs of symptom exacerbation in schizophrenia.20

**Drug use pattern observed in two psychiatric disorders (mood and anxiety disorders)**

Amitriptyline and fluoxetine were the two psychotropic medications distributed in the management of two psychiatric disorders (mood and anxiety disorders) which accounts for 10.46% and 8.14% the total psychotropic drug utilized respectively. Second-generation antidepressants are safe, effective and well tolerated treatments for major depressive disorder (MDD) in adults.21

**Drug use pattern observed in schizophrenia**

The study showed a higher utilization of psychotropic drugs as FDCs in the management of schizophrenia, findings of which is similar to study reported in Mumbai15 and more than findings reported in Karnataka, India.19 On monotherapy, psychotropic drugs utilized in the management of schizophrenia from highest to lowest was found to be haloperidol (3.88%) = levosulpiride (3.88%) > olanzapine (3.88%) > chlorpromazine (3.49%) > risperidone (3.49%) = diazepam (3.49%). Psychotropic drugs utilized as FDCs in the management of schizophrenia from highest to lowest was found to be trihexyphenidyl + trifluoperazine (16.67%) > trifluoperazine + risperidone (5.43%) > risperidone + trihexyphenidyl (3.88%).

**Drug use pattern observed in mood disorder**

On monotherapy, psychotropic drugs utilized in the management of mood disorder from highest to lowest was found to be diazepam (8.53%) > amitriptyline (5.81%) > carbamazepine (4.65%) > fluoxetine (4.26%) = escitalopram (4.26%) > valproate (3.88%).

**Drug use pattern observed in Anxiety disorder**

On monotherapy, psychotropic drugs utilized in the management of anxiety disorder from highest to lowest was found to be diazepam (5.04%) > amitriptyline (4.6%) > fluoxetine (3.88%) = clonazepam (3.88%) > lorazepam (3.1%).

**CONCLUSION**

In conclusion, the study advocated an overall rational utilization of psychotropic drugs and pattern of prescribing with a fewer deviations from standard guidelines due to socio-economic conditions of patients, and individual healthcare providers attitude and perception on adhering towards standard guidelines while developing drug therapy regimen.

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**Conflict of interest: None declared**

**Ethical approval: The study was approved by the Institutional Ethics Committee (RIPER/IRB/2016/009)**

**REFERENCES**
