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Original Research Article

Drug utilization pattern of antidepressant used in depression disorder in psychiatric department in Northern India: a prospective observational study

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ABSTRACT

Background: Due to its large economic impact, severe impairment, suffering, and relatively high lifetime prevalence, depression is becoming a major health concern worldwide, its treatment involved different strategies consisting of supportive and drug therapy This work was done to evaluate the prescribing practices in treatment of depression.
Methods: A prospective observational study was undertaken at the IIMS&R hospital, department of psychiatry. A total of 100 prescriptions written for patients with depressive disorders were examined along with the patients file and progress report to access the pattern of drug therapy, demographic information of patients, comorbidities, the number and types of medications given were also evaluated.
Result: Among the prescriptions, 6 different class of drugs were prescribed out of which 61.26% are selective serotonin receptor inhibitors (SSRIs), 10 different individual antidepressant drugs were prescribed, escitalopram was highest 58.4% (n=83) and paroxetine 2.8% (n=4) as the least, mirtazapine 11.9% (n=17), sertraline 7% (n=10), amitriptyline 6.33% (n=9), duloxetine 6.33% (n=9), escitalopram+ clonazepam 5.6% (n=8) gabapentin+ nortriptyline 1.4% (n=2) and most of patient were within age group of 26-35 years, there is an average of 2 antidepressant drugs per prescription.
Conclusions: The current study reveals important highlights on the current drug treatment pattern in the treatment of depressive disorder, including the most commonly prescribed drug, average number of drugs per prescription and the demographic distribution of patients with depressive disorder which is important for the healthcare professionals to enhance drug therapy, encourage effective healthcare delivery and improve quality in treatment of depression.

Keywords: Prescribing pattern, Depression, Benzodiazepines, Drug utilization, Antidepressant

INTRODUCTION

The systematic study of how pharmaceuticals are prescribed, marketed, distributed, and utilized within a specific community or population is known as drug utilization pattern analysis. It entails examining the negative effects that drug usage has on society, the economy, and medicine. The evaluation of the advantages and disadvantages of medication therapy is one of the medical ramifications of drug use patterns.[1,2] Drug utilization in depression is vital for reasonable prescribing, as there is discovery of new medications and the delayed detection of their detrimental effects. Since depression requires long-term care, these trials are crucial to reducing prescription mistakes.

The most prevalent mental health condition, depression, commonly referred to as "major depressive disorder"

(MOD) or "clinical depression," is defined by a mood that is consistently low and a lack of interest in activities that have a major impact on day-to-day functioning. Numerous epidemiological studies conducted over the past 20 years have revealed that industrialized nations have seen a rise in the prescription of antidepressants. This might be because mental illnesses are more common now.[3,4] It could also be attributable to primary care doctors' increased capacity to identify these conditions and start pharmacological treatment right away. On the other hand, data from studies point to a comparatively constant frequency of mental illnesses or underdiagnosis and undertreatment. The increase in antidepressant prescriptions and use may be caused by a number of facilitating factors, including the availability of new medications with better risk-benefit profiles (such as SSRIs), the introduction of generic versions onto the market, the experience of withdrawal symptoms or fear of them, other socioeconomic and cultural factors (such as stigma mental health well-being campaigns), or longer treatment durations. According to a Canadian research monitoring prescription pattern for antidepressants, the prevalence rose from 9% to 13% between 2006 and 2012. However, during that same era, the incidence rate stayed rather constant. Comparable data on the frequency and prevalence of antidepressant usage were also found in another research. Thus, these results might indicate that the increase in prevalence is due, at least in part, to a longer mean treatment duration rather than a higher number of patients receiving antidepressant prescriptions.

A Finnish study indicated that in 2000-2001, those who used antidepressants for at least a year were 43% long-term users, 32% intermittent users, and just 26% short-term users. Moreover, only 75% of participants had a mental condition that would have been appropriate to treat with an antidepressant.[5] A more recent Italian study found that three years after starting antidepressant prescription medication in 2013, nearly 30% of patients were still taking it. Of them, 10% used more than 180 prescribed daily doses (DDDs) every year. In addition to these noteworthy changes in prescriptions and use over time, the prevalence of antidepressant drug use differs by age, sex, nation, and antidepressant agent or class.[3] Depression is a common disorder that has a big impact on people's lives all around the world. Depression can cause a great deal of distress, dysfunction, and impairment in many different areas of life. In some cases, long-term care may be necessary for the sickness to be successfully managed. Furthermore, there are links between physical health and depression. For example, those with cardiac issues may also be more susceptible to developing depression. Treating depression is essential for improving overall welfare and reducing the burden on both individuals and society, in addition to improving mental health. Antidepressant medications, particularly SSRIs, have supplanted tricyclic antidepressants (TCAs) as the first-choice treatment for anxiety and depression due to their superior long-term efficacy and tolerability profile.

Prescription pattern analysis is used to assess physicians' prescription procedures and identify areas for improvement in order to improve the economy and sense of pharmacological therapy. Given the increase in antidepressant prescriptions and consumption over the past 20 years, gathering data on actual prescribing patterns has become essential. This information contributes to ensuring patient safety and the best possible therapeutic results by taking into consideration the nature of these drugs' adverse effects. Therefore, the purpose of this study is to present a summary of the research on antidepressant use in people who have been diagnosed with depression. By looking at these trials, researchers want to gain more insight into current prescribing practices, identify any gaps or areas for improvement, and ultimately contribute to ensuring that antidepressant medications are used safely and effectively in the treatment of depression.[6]

METHODS

A prospective observational study on the use of antidepressants in patients with depression disorder who were undergoing treatment at the IIMS&R, hospital in Lucknow, India, was conducted from January to June of 2023. One hundred participants were enrolled in the study based on the inclusion and exclusion criteria after obtaining their written and oral consent for the study

Inclusion criteria

All patients with depression, regardless of age or gender and all patients with depressive or adjustment disorders, diagnosed in accordance with the international classification of diseases (ICD)-10 criteria were included in study.

Exclusion criteria

Individuals who did not receive antidepressant medication, and individuals with mental disabilities were excluded from study.

Data from patient OPD file, IPD patient’s medication chart, progress chart, lab and diagnostic reports were taken to analyze the average age range of patients, number of comorbidities associated, type of drugs prescribes. Statistically the data was evaluated using Microsoft excel and statistical package for the social sciences (SPSS) software.

Variables were evaluated using descriptive statistics including mean, frequency and percentage.

RESULTS

Demographics (age and gender)

Demographic data and baseline values are summarized in Table 1, males were predominant with 52% and 48% females. The highest no. of people with depression belongs

to the age group of 26 years to 35 years (39%) and least was 46-55 years (6%), the mean age of the participant was (38) years,

Categorization based on severity of depression

According to the diagnosis, patients were classified into three classes based on the severity of the condition i.e. Mild, Moderate and Severe, in male there are 21 mild, 17 moderate, and 14 severe cases, in females, there were 23 mild, 19 moderate, and 6 severe cases (Figure 1).

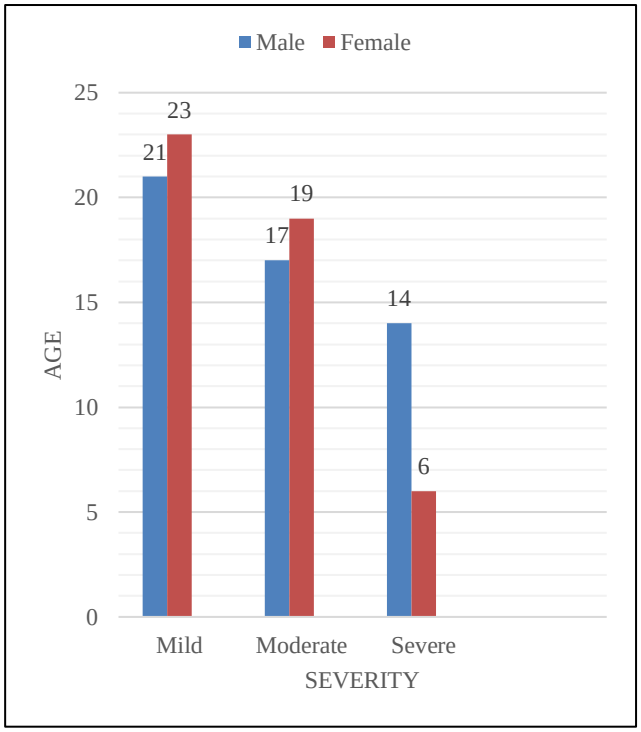

Figure 1: Severity of depression by gender.

Percentage of antidepressant drugs and average number per prescription

In the prescription of 100 patients, 328 drugs were given, among which 43.29% (n=142) were antidepressants, making an average of 1.4 antidepressant drug per prescription and 56.7% (n=186) were medications of other classes (Table 3).

Number of antidepressant drug(s) per prescription

The 57% of prescriptions are having 2 antidepressants, followed by 25% Prescription having more than 2 antidepressants and 18% prescription having only 1 antidepressant (Table 3).

Classes of antidepressant drugs

Five different classes of antidepressant drugs were prescribed, with the following distribution: 61.26% selective SSRIs, 14% serotonin-norepinephrine reuptake inhibitors (SNRIs), 12.67% TCAs, 11.97% tetracyclic antidepressants (TeCAs), 29.03% benzodiazepines. Others include 37.6% multivitamins, 26.88% proton pump inhibitors (PPIs), and 6.4% nonsteroidal anti-inflammatory drugs (NSAIDs) (Table 2).

Escitalopram was the most prescribed antidepressant drug at 58.4% (n=83), while paroxetine was the least prescribed at 2.8% (n=4). Mirtazapine was prescribed at 11.9% (n=17), followed by sertraline at 7% (n=10), amitriptyline at 6.33% (n=9), duloxetine at 6.33% (n=9), escitalopram+clonazepam at 5.6% (n=8), and gabapentin+nortriptyline at 1.4% (n=2). Among other drugs, clonazepam was the most prescribed at 29.03% (n=54), while naproxen + domperidone was the least prescribed at 6.45% (n=12). Multivitamins were prescribed at 37.6% (n=70), and PPIs at 26.88% (n=50) (Table 2).

Table 1: Demographics (age and gender).

Variables	N	Percentage (%)
Gender		
Male	52	52
Female	48	48
Total	100	100
Age distribution (in years)		
15-25	15	15
26-35	39	39
36-45	23	23
46-55	6	6
56-65	9	9
>65	8	8

Table 2: Classes of antidepressant drugs.

Class of drug	Prescribed drug	No. of prescription
SSRIs	Sertraline	10 (10%)
	Escitalopram	83 (83%)
	Escitalopram+ clonazepam	8(8%)
	Paroxetine	2 (2%)
SNRIs	Duloxetine	4 (4%)
TCAs	Amitriptyline	17 (17%)
	Gabapentin+ nortriptyline	12 (12%)
TeCAs	Mirtazapine	9 (9%)
Benzodiazepines	Clonazepam	70 (70%)
Others	Naproxen+ domperidone (non-steroidal anti-inflammatory drugs)	54 (54%)
	Multivitamin	50 (50%)
	PPI	50(50%)

Table 3: Number of antidepressant drugs per prescription (Monotherapy/combination therapy).

Drug therapy	No. of prescription
Monotherapy	
Prescriptions having one antidepressant	18
Combination therapy	
Prescriptions having two antidepressants	57
Prescriptions having more than two antidepressants	25

DISCUSSION

The purpose of the prospective observational study was to look at depression management. As per the study, males had a higher prevalence of depression disorder (52%) than females (48%) (Table 1). This finding is consistent with a study conducted by Ghosh et al and differs with the findings of Chaudhari et al study. 2022.[1,6] which indicated that depression was more common among women. Also, 39% of the patients were between the ages of 26 and 35, which is the highest among the age groups, at 3% of all individuals, the age group over 65 had the lowest prevalence, other age groups are 36-45 years (23%), 15-25 years (15%), 46-55 years (14%), and 56-65 years (6%) (Table 1). These findings are consistent with research conducted by Ghosh et al and Hadia et al.[6,7]

In this study, medications from six distinct classes of antidepressant were prescribed to the 100 patients: Benzodiazepines (29.03%), TeCAs (11.97%), SSRIs (61.26%), SNRIs (14%), TCAs (12.67%), and multivitamins (37.6%)., from which ten different drugs were prescribed. with escitalopram emerging as the most often prescribed drug, making up 58.4% of the prescriptions, and paroxetine was the antidepressant that was prescribed the least. The preference for escitalopram, which belongs to the SSRIs class, can be attributed to its high efficacy in treating depression, combined with a favorable side effect profile and fewer drug interactions. SSRIs, in general, are preferred in depression treatment because they effectively increase serotonin levels in the brain, which helps improve mood and are better tolerated by patients compared to older classes of antidepressants like TCAs. This aligns with existing research by Ghosh et al and Hadia et al.[6,7] which also highlight the widespread use of SSRIs, particularly escitalopram, in managing depressive disorders. SSRIs, are the most effective first-line pharmaceutical treatment for MDD.[9,10]

Other drugs administered were escitalopram + clonazepam (5.6%), gabapentin + nortriptyline (1.4%), amitriptyline (6.33%), duloxetine (6.33%), and mirtazapine (11.9%) (Table 2). which also aligns with research conducted by Ghosh et al and Hadia et al.[6,7] The combination of drugs in treating depression is often employed to enhance therapeutic effects, manage co-existing conditions, and/or alleviate side effects. For instance, escitalopram + clonazepam is commonly prescribed when a patient has both depression and anxiety, with escitalopram targeting depressive symptoms and clonazepam providing quick relief from anxiety. Gabapentin + nortriptyline is used for patients with depression and chronic pain, as gabapentin addresses neurogenic pain and anxiety, while nortriptyline offers antidepressant effects. These combinations allow for a more personalized treatment approach, improving overall effectiveness of depression management by addressing specific patient needs.[8]

Other types of medications given are PPIs (26.88%) and NSAIDs (6.4%). PPIs and NSAIDs are given to manage gastrointestinal side effects and pain, while multivitamins help address nutritional deficiencies and support overall health during depression treatment.[12]

Regarding therapeutic modalities, 82% of the study's prescriptions used combination therapy, and 28% of the remaining prescriptions used monotherapy therapy (Table 3). In this study, 57% of prescriptions included two antidepressants, 25% had more than two, and 18% had only one. This suggests a tendency toward polypharmacy, likely driven by the need to address complex or resistant cases of depression where monotherapy may be insufficient, the high use of multiple antidepressants might reflect a regional practice preference, differences in patient populations, or an emphasis on combination therapy to enhance therapeutic outcomes.[7,11]

Limitations

Firstly, the study was conducted at a single institution with a relatively small sample size, which limits the generalizability of the findings. Secondly, the study assessed only pharmacotherapeutic management (drug management) without evaluating other non-pharmacological therapies such as psychological therapy, behavioral therapy, and self-help methods. Additionally, the inability to follow up with patients after discharge prevented a comprehensive assessment of treatment outcomes.

CONCLUSION

The study found that men were more likely than women to suffer from depressive illness. People between the ages of 26 and 35 were the most likely to experience depression. The two medications that were prescribed most were mirtazapine (NASSA) and escitalopram (SSRI). The most often prescribed medicine, aside from the antidepressant class, was clonazepam, a member of the benzodiazepine class. It has been discovered that the most popular approach is oral administration. Most of the patients received escitalopram, a kind of selective serotonin reuptake inhibitor. There are 52 cases in the male gender, of which 21 were categorized as mild cases, 17 as moderate cases, and 14 as severe cases. There were six severe instances, 19 intermediate cases, and 23 light cases

in females. Usually, medication is given as monotherapy. Of the patients, 28% take combination therapy and 72% receive monotherapy. It is found that most prescribed drugs are SSRIs.

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