

Study on Prescribing Pattern of Drugs among Outpatients with Bipolar Affective Disorder in a Tertiary Care Teaching Hospital

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ABSTRACT

Background: Recurrent periods of depression and mania characterize a multiplex condition called bipolar disorder. Bipolar affective illness is currently treated with a broad number of medications. Mood stabilizer therapy can be used to treat depression or mania without raising the likelihood of a relapse. Antiepileptic, antipsychotic, and antidepressant medications are also indicated and commonly used to treat bipolar illness in clinical practice. **Materials and Methods:** A prospective observational study was conducted at Justice K. S. Hegde Charitable Hospital for six months among 80 outpatients who were diagnosed with bipolar disorder to study the prescribing pattern of bipolar affective disorder drugs of drugs prescribed. A suitable data collecting form was designed to collect and record the information. The details of drug usage, including frequency, dose, and route of administration, were collected to study prescribing patterns for bipolar affective disorder drugs. **Results:** 80 prescriptions were analyzed. Males ($n=57$, 71.25%) were more than females ($n=23$, 28.75%). The majority of the patients ($n=46$, 57.5%) belonged to the age group 21 to 40 years. The most commonly prescribed class of drug was mood

stabilizers ($n=90$, 44.34%). Lithium ($n=38$, 47.5%) was the most frequently prescribed drug. **Conclusion:** Mood stabilizers were the most commonly prescribed medication class, and the most commonly prescribed medicine was lithium for the management of the bipolar affective disorder. By assisting with prescription analysis and prescribing trends, a clinical pharmacist can help improve a patient's quality of life. Studies can help psychiatrists get feedback on their current prescribing practices.

Key words: Prospective, Prescribing pattern, Bipolar affective disorder drugs, Mood stabilizers, Lithium.

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INTRODUCTION

Bipolar disorder is a multiplex disorder characterized by recurrent episodes of depression and mania.¹ Bipolar disorder affects around 1.5% of the public.² It is one of the commonest causes of disability worldwide.³ Bipolar disorder is often convoluted by many other comorbidities such as anxiety, substance abuse, and personality disorder. It comprises bipolar I disorder (BP-I), bipolar II disorder, cyclothymic disorder, and other related disorders.⁴ Traditionally, 45% of bipolar I disorder (BP-I) patients have more than one episode, and 40% have a chronic disorder. Likewise, bipolar II disorder (BP-II) also has a chronic course that summons long-term treatment.⁵ In cyclothymic disorder, the patient suffers from hypomanic or depressive symptoms for at least half of the time during the required two-year period.⁶

Long-term treatment is generally needed to reduce the risk of serious relapse or recurrence and stabilize mood.¹ Bipolar disorder management aims to reduce symptoms and maximize the quality of life.³ Treatment strategies of this compound and dynamic disease include pharmacologic drugs and psychosocial interventions such as cognitive-behavioral, psychoeducational, interpersonal, and family therapy interventions.⁷

When various treatment options are at hand for a specific indication, having a reliable estimate of comparative efficacy (prevention of any mood episode, manic, hypomanic or mixed episode and depressive episode), tolerability and appropriateness are clinically useful.¹ Currently, a large number of drugs are available for the treatment of bipolar affective disorder. Some of the psychiatrists prefer traditional therapy

with lithium.⁸ Lithium has been the standard long-term treatment for 40 years.¹ Mood stabilizer therapy is effective against either depression or mania without increasing the risk for an opposite episode.² Antiepileptic, antipsychotics, and antidepressants are also recommended and widely used in clinical practice to treat bipolar disorder.¹ Antipsychotics can be used in the acute and maintenance phases of the management of bipolar affective disorder. Nowadays, various modes of treatment have been developed for bipolar disorder, such as antiepileptics like sodium valproate, carbamazepine, lamotrigine, gabapentin, and topiramate. Newer antipsychotics like clozapine, risperidone, and olanzapine are used to treat bipolar disorder and endorsed as a better alternative to lithium because of fewer adverse effects and a wider margin of safety.⁸

However, even though pharmacologic therapy options have notably increased in the last two decades, more significant than half of all bipolar patients² relapse within two years, over 90% of bipolar patients have experienced at least one added affective episode during their lifetime. These high relapse rates might occur from the severity of the disease or the lack of efficacy of current pharmacologic therapy options.⁷ Individual patient factors, including inclination for a specific treatment modality, treatment history, comorbidities, adherence history, and factors that affect patient attitude towards treatment such as duration of untreated disease, insight, and past treatment experience, need to be contemplated while initiating therapy.⁴ The purpose of this study was to analyze the prescribing patterns for the management of bipolar affective disorder.

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MATERIALS AND METHODS

After obtaining approval from the Institutional ethics committee (NGSMIPS/IEC/06/2020), a prospective observational study was conducted among the outpatients in the psychiatry department of tertiary care hospital. Patients' data with all details were collected for a period of 6 months. Prescriptions were reviewed, and necessary data were collected, including the age, gender, frequency, name of drug, class of drug, and drug cost. Outpatients diagnosed with bipolar affective disorder aged above 18 years, either gender, and a minimum of two drugs per prescription were included. Pediatrics, pregnant women and lactating woman, patients who were not willing to give consent, patients with unclear data were excluded in this study. A suitable data collection form and were designed to collect and document the data. Patients' information was gathered by using patient case notes patient prescriptions. Patients' demographic parameters such as age, gender was considered for clinical presentation. Prescribing patterns of the bipolar affective disorder drugs were analyzed by collecting the details of drug usage, including frequency, dose, and route of administration. The study's minimum sample size was determined to be 80. The sample size is arrived at by using the following formula with 95% confidence interval, 5% error and conservative, the prevalence of 50% for a population size of 100. The summary of the materials and methods is described in Figure 1.

RESULTS

Gender-wise distribution

Out of 80 patients, there were 57 males (71.25%) and 23 females (28.75%). Male patients were more in number compared to the female patient population in the study. The details are summarized in Table 1.

Age-wise distribution

The majority of the patients were found between the age group of 21–40 years, 46 patients (57.5%), followed by the 24 patients (30%) in the age group of 41–60 years. The details are summarized in Table 1.

Distribution based on number of drugs per prescription

The majority of the patients have been prescribed 2 drugs ($n=45$, 56.25%) followed by 3 drugs ($n=28$, 35%). The details are summarized in Table 2.

Classes of drugs prescribed

There are mainly 3 classes of drugs prescribed, including mood stabilizers, atypical antipsychotics, and antidepressants prescribed for

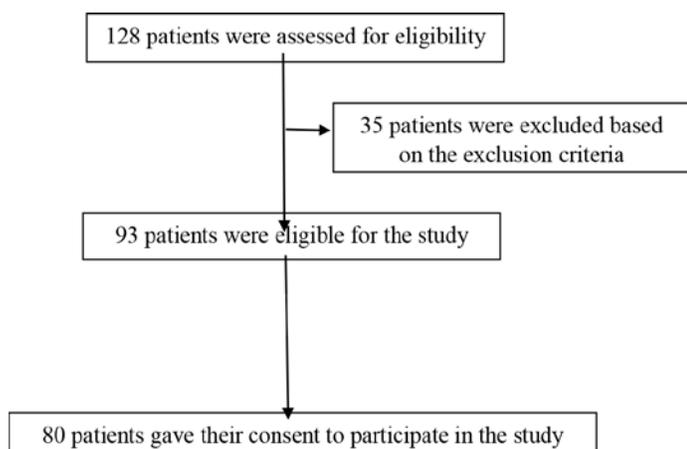


Figure 1: Summary of the materials and methods.

Table 1: Distribution of age and sex.

Subject Demographics	Parameters	Number (%)
Gender (N=80)	Male	57 (71.25)
	Female	23 (28.75)
Age in Years (N=80)	18–20	5 (6.25)
	21–40	46 (57.50)
	41–60	24 (30.00)
	61–80	5 (6.25)

Table 2: Distribution based on number of drugs per prescription and pharmacological classification of drugs.

Parameter	Number (%)
Number of drugs per prescription (N=80)	
2	45 (56.25)
3	28 (35.00)
4	6 (7.50)
5	1 (1.25)
Drug class (N=203)	
Mood stabilizers	90 (44.34)
Atypical antipsychotics	81 (39.90)
Antidepressants	13 (6.40)
Others	19 (9.36)

Table 3: Number of drugs from medication class prescribed.

Number of drugs in class	Number (%)
Mood stabilizers	
0	7 (8.75)
1	58 (72.50)
2	13 (16.25)
3	2 (2.50)
Atypical antipsychotics	
0	8 (10.00)
1	63 (78.75)
2	9 (11.25)
Antidepressants	
0	69 (86.25)
1	9 (11.25)
2	2 (2.50)
Others	
0	61 (76.25)
1	19 (23.75)

the management of the bipolar affective disorder. Mood stabilizers were the most frequently prescribed class of ($n=90$, 44.34%) drugs, followed by atypical antipsychotics ($n=81$, 39.90%). The details are summarized in Table 2.

Number of medications from each class prescribed

One mood stabilizer per prescription is the most common ($n=58$, 72.50%), followed by two ($n=13$, 16.25%) mood stabilizers per prescription. Single atypical antipsychotics ($n=63$, 78.75%) were commonly prescribed per prescription. Monotherapy with antidepressants was prescribed in only a few cases ($n=9$, 11.25%). 19 patients (23.75%) were prescribed drugs other than 3 main classes

Table 4: Drugs taken by medication class.

Medication	Number (%)
Mood stabilizers (N=90, 44.34%)	
Lithium	38 (47.5)
Sodium valproate	18 (22.5)
Sodium Valproate + Valproic acid	11 (13.8)
Clonazepam	5 (6.3)
Oxcarbazepine	5 (6.3)
Divalproex	4 (5)
Lamotrigine	4 (5)
Lorazepam	2 (2.5)
Topiramate	1 (1.2)
Carbamazepine	1 (1.2)
Etizolam	1 (1.2)
Atypical antipsychotics (N=81, 39.90%)	
Olanzapine	31 (38.8)
Quetiapine	15 (18.8)
Risperidone + Trihexyphenidyl	12 (15)
Risperidone	7 (8.8)
Aripiprazole	5 (6.3)
Amisulpride	5 (6.3)
Clozapine	4 (5)
Lurasidone	2 (2.5)
Antidepressants (N=13, 6.40%)	
Escitalopram	6 (7.5)
Bupropion	2 (2.5)
Fluoxetine	1 (1.2)
Mirtazapine	1 (1.2)
Dosulepin	1 (1.2)
Amitriptyline	1 (1.2)
Clomipramine	1 (1.2)
Others (N=19, 9.36%)	
Vitamin supplements	10 (12.5)
Propranolol	6 (7.5)
Trihexyphenidyl	2 (2.5)
Chlorpromazine	1 (1.2)

(mood stabilizers, atypical antipsychotics, antidepressants). The details are summarized in Table 3.

Commonly prescribed drugs

Out of the 80 prescriptions taken in the study, lithium ($n=38$, 47.5%) was the highly prescribed drug, followed by olanzapine ($n=31$, 38.8%). The details are summarized in Table 4.

DISCUSSION

The study included 80 patients satisfying the study criteria, in the department of psychiatry of a tertiary care teaching hospital. The study focused on assessing the prescribing pattern of drugs among outpatients with bipolar affective disorder.

In this study, it is found that the majority of the study population were males (57 patients, 71.25%) than females (23 patients, 28.75%). Similar study results were obtained from a study performed by Banerjee I *et al.*, which showed that most of the patients were males (49 patients, 56.3%).⁸

In this study, the maximum number (46 patients, 57.50%) were seen within 21 to 40 years. A similar result was obtained from a study conducted by Baek JH *et al.*, with an average age of 37.08 (SD = 14.5) years.⁹ Another study conducted by Banerjee I *et al.*, showed that 62.1% of the patients were less than 40 years.⁸ Another research by Blanco C *et al.*, obtained a result that shows most patients were in the age group of 36 to 50 years.¹⁰ Another study by Manhas RS *et al.*, showed that 48 patients belong to the 21 to 40 years age group, which is the highest.¹¹ Mood stabilizers are medications that are used to maintain or balance mood, both in terms of acute control and prophylaxis and second-generation (atypical) antipsychotics have been shown in recent research to be effective in treating both manic and depressive symptoms in affective disorders. In the present study, mood stabilizers (44.34%) and atypical antipsychotics (39.90%) were the most frequently prescribed classes of drugs. A similar result was obtained from a study conducted by Frangou S *et al.*, where mood stabilizers were 50.8%, and antipsychotics were 36.50%.¹²

Lithium has historically been the first-line therapy for bipolar disorder. It was the most commonly prescribed (47.5%) mood stabilizer in this study. In contrast, a study conducted by Levine J *et al.* obtained a result that shows 47% of patients were treated with lithium.¹³ On the other hand, olanzapine was the most commonly prescribed antipsychotics (38.8%) in this study. The results obtained by the study conducted by Lim PZ *et al.*, showed that 37% of patients were treated with olanzapine.¹⁴

Many factors have contributed to the increased use of polypharmacy in the treatment of bipolar disorder. In this current study, a single mood stabilizer per prescription was in the 58 patients (72.50%), and a combination of 2 mood stabilizers per prescription was in the 13 patients (16.25%). A similar result was obtained in a study conducted by Trivedi JK *et al.*, which showed 79 patients with a single mood stabilizer and 21 patients with the combination of 2 mood stabilizers.¹⁵ This shows single mood stabilizer therapy was more common than combination.

Antidepressants were the least commonly prescribed class of drugs in this study compared to mood stabilizers and antipsychotics, a single antidepressant for 9 patients (11.25%) and a combination of 2 antidepressants for 2 patients (2.50%). A similar result was obtained in a study conducted by Frangou S *et al.*, which showed only 14.28% of those 9 patients were prescribed antidepressants.¹² But another study conducted by Lyall LM *et al.*, showed a completely different result where antidepressant monotherapy was most commonly (24.96%) used.¹⁶

CONCLUSION

Prescription pattern studies have become a significant tool for assessing healthcare systems. This study mainly focused on the prescribing patterns of drugs in patients with the bipolar affective disorder in the outpatient department of psychiatry. In this study, males were more in number than females. It was observed that the most affected patients were in the age between 21 and 40 years (57.5%). The majority of the patients have been prescribed 2 drugs (56.25%), followed by 3 drugs (35%) per prescription. It was found that mood stabilizers were the most commonly prescribed (44.34%) class of drug, followed by antipsychotics (39.90%). Lithium (47.5%) was the most frequently prescribed drug from the class of mood stabilizers, followed by olanzapine (38.8%) from the atypical antipsychotics class.

This study concluded that careful and judicious use of drugs would allow better patient management and limit the endpoint morbidity and mortality arising from bipolar affective disorder. A clinical pharmacist can be involved in prescription analysis and prescribing patterns,

improving patients' quality of life. Studies can help provide feedback to psychiatrists on contemporary prescribing practices.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

BP-I: Bipolar I Disorder; **BP-II:** Bipolar II Disorder.

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