

Drug utilization study of psychotropic drugs in outdoor patients in a tertiary care hospital attached with a medical college

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ABSTRACT

Background: Psychotropic drugs have a great importance in psychiatric practice. Today many newer drug like selective serotonin reuptake inhibitors and atypical antipsychotic drugs has changed treatment protocol. Hence, the study was carried out to find morbidity pattern of psychiatric illness and prescribing pattern of psychiatric illness.

Methods: A prospective cross-sectional study was carried out for 12 months. Patients of all ages and both sexes were included in the study while inpatients and referred patients were excluded. The prescribing pattern was analyzed by using World Health Organization (WHO) basic drug indicators.

Results: Among 600 patients, male patient were 291 (48.50%) and female patient were 309 (51.50%). The most common disorder was depression 208 (34.66%) followed by schizophrenia 192 (32.00%). The numbers of psychotropic drugs prescribed a patient were 2.51. 39.39% drugs were prescribed from the WHO essential medicines list. Total 89.18% drugs were prescribed by generic name. Benzodiazepines were the most common prescribed drugs. Atypical antipsychotic drugs were commonly used than typical antipsychotic drugs. Central anticholinergic drug was used in 43.15% patients receiving antipsychotic drugs.

Conclusion: Overall, the drugs were prescribed rationally. Benzodiazepine should be prescribed only for short-term duration. Use of central acting anticholinergic drugs with all antipsychotic drugs was not justified.

Keywords: Drug utilization, Prescribed daily dose, Psychotropic drugs, Prescribing pattern

INTRODUCTION

Drug utilization study has been defined by the World Health Organization (WHO) as “The marketing, distribution, prescription and uses of drugs in a society with special emphasis on the resulting medical and social and economic consequences.”¹ The interests in drug utilization studies were generated as a result of: (1) number of new drug marketed, (2) wide variations in the prescribing pattern, (3) growing concern about delayed adverse effects, (4) increasing concern about the cost of drug as reflected by increase in both sales and the volume of prescription drugs.²

Psychiatric disorders form an important public health priority.³ Of the top 10 health conditions contributing to the

disability-adjusted life years, four are psychiatric disorders. 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.⁴

The present study was undertaken to analyze the pattern of drug utilization of psychotropic medications in outdoor patients of psychiatry department of a tertiary care teaching hospital in Jamnagar.

METHODS

A cross-sectional, prospective drug utilization study was carried out in outdoor patient of Psychiatry Department of Guru Gobind Singh Government Hospital, a tertiary care

teaching hospital attached to Shri M. P. Shah Government Medical College, Jamnagar.

Prior permission of the medical superintendent of Guru Gobind Singh Government Hospital, Institutional Ethical Committee and Head of Psychiatry Department was obtained for conducting the study. My study duration was 1 year from August 2013 to July 2014.

Development of the protocol

An appropriate study protocol and proforma were developed and discussed with teaching staff members of the pharmacology department and head of department.

Selection criteria of patient:

Inclusion criteria

1. Patient of all age groups and either sex attending the psychiatry outpatient department (OPD) including pregnancy and lactating mothers.

Exclusion criteria

1. Referred indoor cases from other departments
2. Diagnosis is not certain.

Collection of data

Total 600 cases were analyzed. The WHO drug indicators that were selected to analyze the prescribing pattern included: (1) average number of the psychotropic drugs prescribed per encounter, (2) percentage of the psychotropic drugs prescribed by generic name, (3) percentage of the psychotropic drugs prescribed from Essential Drug List (EDL), (4) frequency of psychotropic drugs usage as per indication, (5) average psychotropic drug cost per encounter.

RESULTS

Characteristics of study participants

Out of total 600 patients, the percentage of female and male patients was 51.50% and 48.50%, respectively. The relative distribution of different psychiatric disorders in different age groups and genders is shown in Table 1.

Pattern of psychiatric disorders

34.66% of prescriptions were for depression, 32.00% of schizophrenia, 15.16% of bipolar disorder, and 7.83% of epilepsy. The disorder like schizoaffective disorder, anxiety disorders, brief psychotic disorder, obsessive compulsive disorder, mental retardation, social phobia, and other disorders were 8.81% (Table 1).

Analysis of prescription patterns according to various WHO drug use indicators (Table 2)

The total numbers of different drug products prescribed were 1502 in 600 encounters surveyed. The average number of drugs per encounter was 2.51 in our study with a prescribing range of 1-6. 39.39% drugs were prescribed from WHO EDL (2013) and 42.42% drugs were prescribed from National EDL (2011). 89.18% drugs were prescribed by generic name.

- Drugs used in schizophrenia: n=489 (Figure 1)
- Drugs used in depression: n=447 (Figure 2).

Pattern of psychotropic drug use as per the Anatomical Therapeutic Chemical/defined daily dose (DDD) Classification (Table 3)

In our study, percent depth dose (PDD)/DDD ratio for various prescribing drugs was ranging between 0.66 and 1.88.

Table 1: Morbidity pattern of psychiatric illness observed in out-patients.

Diagnosis	Male (%)	Female (%)	Total (%)
Total	291 (48.50)	309 (51.50)	600 (100)
Depression	80 (13.33)	128 (21.33)	208 (34.66)
Schizophrenic disorder	102 (17)	90 (15)	192 (32.00)
Bipolar mood disorder	53 (08.83)	38 (06.33)	91 (15.16)
Epilepsy	23 (03.83)	24 (04.00)	47 (07.83)
Schizoaffective disorder	11 (01.83)	8 (01.33)	19 (03.16)
Anxiety disorders	5 (00.83)	12 (02.00)	17 (02.83)
Brief psychotic disorder	6 (01.00)	3 (00.50)	9 (01.50)
Obsessive compulsive disorder	4 (00.66)	0 (0)	4 (00.66)
Mental retardation	3 (00.50)	1 (00.16)	4 (00.66)
Social phobia	2 (00.33)	0 (0)	2 (00.33)
Others (alcohol dependence, insomnia and panic disorder)	2 (00.33)	5 (00.83)	7 (01.16)

Table 2: Assessment of the prescription pattern, as per various drug use indicators.

Average number of drug per encounters	2.51
Drug prescribed from EDL	
WHO	39.39%
National	42.42%
Percentage of drugs prescribed from generic name	89.18%
Average psychotropic drug cost spent per encounter	215.42 Rs

EDL: Essential drug list, WHO: World Health Organization

Table 3

Drug	PDD (in mg/mmol)	DDD (in mg/mmol)	PDD/DDD ratio
Tablet lithium	18.88 mmol	24 mmol	0.78
Tablet fluoxetine	37.79	20	1.88
Tablet escitalopram	16.14	10	1.61
Tablet olanzapine	11.99	10	1.19
Tablet amitryptiline	75	75	1
Tablet trifluoperazine	17.76	20	0.88
Tablet risperidone	4.11	5	0.82
Tablet carbamazepine	701.85	1000	0.70
Tablet imipramine	66.51	100	0.66
Tablet sodium valproate	834.37	1500	0.55
Tablet diazepam	5.06	10	0.50
Tablet clozapine	108.02	300	0.360

PDD: Percent depth dose, DDD: Defined daily dose

DISCUSSION

Schizophrenia and major depression accounted for a large majority (about 66.66%) of the patients attending the psychiatry OPD in our study. This was comparable to other study.^{5,6}

Schizophrenia was the more common in males where depression was higher in females (Table 1). It has been hypothesized that this difference could be due to hormonal influence, the effect of childbirth and differing psychosocial stress among the women. Both these disorders were the more common in the age group of 35-45 years.⁷

The total number of different psychotropic drugs prescribed was 1502 in 600 encounters surveyed. The average number of psychotropic drugs per encounter prescribed was 2.51 and drugs prescribed in the range of 1-6 which was comparable to other study.^{5,7}

Apart from psychotropic drugs, few encounters also prescribed drugs like co-prescribing of drugs other than psychotropic drugs such as vitamin B complex, folic acid, iron, antacid, analgesic, and antipyretic agents. Among 236

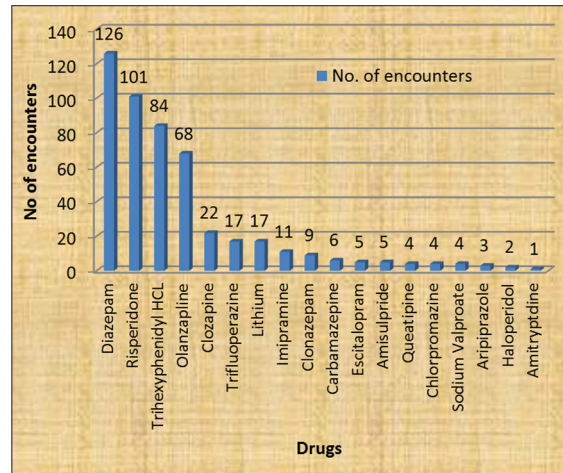


Figure 1: Drug prescribed in schizophrenia.

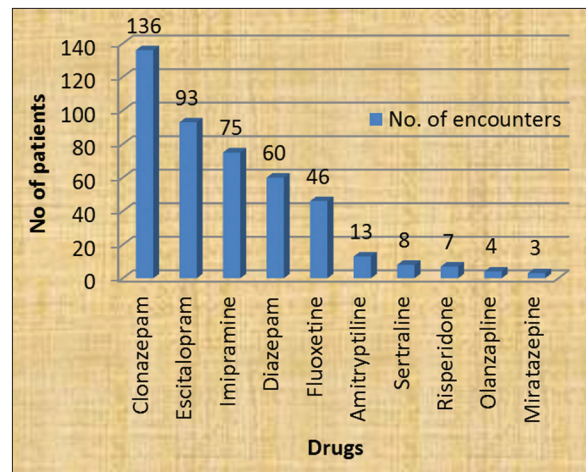


Figure 2: Drugs prescribed in depression.

other prescriptions, 179 prescriptions were of vitamin B complex. Vitamin B complex was prescribed most commonly.

In our study, out of total 33 drugs, 13 (39.39%) drugs were prescribed from the WHO EDL formulary (2013) and 14 (42.42%) drugs were prescribed from National EDL (2011) which was comparable to other study.³ 89.18% drugs were prescribed by generic name. The generic prescription is one of the indicators for rational prescribing. Generic drug prescribing also facilitates cheaper treatment for the patient.

In our study, PDD/DDD ratio for various prescribing drugs was between 0.66 and 1.88. A study conducted by Thakkar shows³ PDD/DDD ratio 0.5-1.35.

Frequency of psychotropic drug usage in major depression

During our study the following drugs were prescribed in descending order clonazepam 65.38%, escitalopram 44.71%, imipramine 36.05%, diazepam 28.84%, and fluoxetine 22.11%. Prior to introduction of the first selective serotonin

reuptake inhibitors (SSRI), medical treatment of depression was limited to tricyclic antidepressant and non-selective monoamine oxidase inhibitors. But now SSRI have gained popularity for the treatment of depression compared to tricyclic antidepressants.^{8,9}

Frequency of psychotropic drug usage in schizophrenia

During our study, the most common prescribed drugs are diazepam 74.55%. Next in line are risperidone 59.76%, olanzapine, 40.23%, trihexyphenidyl 43.75%, and clozapine 13.01%. Atypical antipsychotic drugs were the most common prescribed which is similar to other studies.¹⁰⁻¹³ Atypical antipsychotic are now rated as the first-line agents for the treatment of mania because of their low propensity to cause extrapyramidal side effects, efficacy against refractory cases, and better control over negative symptoms. In our study, the prescribing frequency of central anticholinergic, anti-Parkinsonian drug trihexyphenidyl HCL is 43.75%. As it is accounting higher prescribing frequency means that it is prescribed with all antipsychotics whether these were typical or atypical.¹⁴ It was noted that the addition of anticholinergic medication can exacerbate existing tardive dyskinesia and that discontinuing anticholinergic drugs may improve the condition.^{15,16}

Benzodiazepines were the most common prescribed drug for anxiety disorders. The 2011 National Institute for Health and Care Excellence guidelines for the management of anxiety disorders state that SSRIs or serotonin norepinephrine reuptake inhibitors should be offered to the patient first. Benzodiazepines should be avoided and used only for short-term in the case of crisis.¹⁷

CONCLUSION

Overall, the drugs were prescribed rationally. Benzodiazepine should be prescribed only for short-term duration. Use of central acting anticholinergic drug with all antipsychotic drugs was not justified.

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