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PSYCHOTROPIC DRUGS: PRESCRIBING PATTERN IN PSYCHIATRY OUTPATIENT DEPARTMENT OF A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

The aim of present work is to study the pattern of prescription of psychotropic drugs in psychiatry outpatient department of a tertiary care teaching hospital. This was a cross-sectional observational study of one year in patients diagnosed according to DSM- IV criteria (4800 patients). Psychotic disorders 23.95 % were most common followed by Anxiety disorders. Prevalence of male patients was more than female. Prevalent age group in our study was more than 30 years of age. A total of 8338 drugs prescribed, among which 90.64% drugs were used orally and 9.35% drugs were given as parenteral formulations. Among antipsychotics, Olanzepine (28.98%) was prescribed more commonly followed by Risperidone, among antidepressants; Escitalopram (45.42%) was prescribed more frequently followed by Des – Venlaflaxine, the anxiolytic group; Clonazepam (39.50%) followed by Nitrazepam, among mood stabilizer;Valproate (55.91%) was used followed by Ox carbazepine, among anticholinergics; frequency of administration of Trihexyphenydyl (66.82%) was more than Procyclidine whereas among anticonvulsant; Sodium valproate(57.30%) followed by Ox carbazepine).

Key words: Psychotropic drugs, Prescribing pattern, schizophrenia, antidepressants, antipsychotics, mood stabilizers

INTRODUCTION

Rational practice of drug prescription is mandatory in clinical practice but the irrational prescription of drugs in various fields of medical management is frequently seen.[1] Drug utilization pattern in both in & out patients departments of various teaching care hospital & medical care providing institutions must need a proper intermittent & judicious monitoring to minimize irrational practice of drug prescription, to analyze the rationality of every prescriptions, to offer suitable modifications in prescribing pattern to increase the therapeutic benefits and reduce adverse effects. Data of utilization patterns of drugs at out-patient departments of tertiary care teaching hospitals & analysis of that data is a very beneficial measure to formulate guidelines for improving the pattern of prescriptions aligned to rationality & effective outcome of the treatment with cost effectiveness. [2]

The World Health Organization (WHO) defined drug utilization as the marketing, distribution, prescription and use of drugs in a society, considering its consequences, medical, social, and economic. [3] Drug utilization research affords a baseline reference points about the effect of diverse interventions in prescribing the concerned drugs. [4]

It is impossible to give suggestions for improving the attitude of physicians regarding the pattern of prescription without the knowledge of utilization pattern of drug. Psychopharmacology is a rapidly growing field, in which the number of patients are continuously increasing and lots of newly introduced drugs are coming into the market to which psychiatrists are very much exposed now a days that are claimed and projected as the better alternative to the traditional psychiatric medicines by the pharmaceutical companies. [5] The traditional antipsychotic drugs have been very much replaced by the newer antipsychotic drugs which require

continuous monitoring for establishing their safety & efficacy. [6].

Psychiatrist are now very much keen to use newer psychotropic medications in psychiatric practice which require vast study on their utilization and consequences on real life effectiveness and safety in actual clinical practice.[7]There was very few studies which have evaluated the prescription pattern and their safety profile in psychiatric patients from India. In view of this, the present study was designed to observe the prevalence of different psychiatric illnesses and to analyze the drug utilization pattern in outdoor patients of psychiatric department of a tertiary care hospital in IMS & SUM Hospital, Bhubaneswar.

MATERIALS & METHODS

A longitudinal observational study was undertaken in the Psychiatry outpatient department in collaboration with department of Pharmacology of IMS & SUM Hospital, Bhubaneswar, Odisha from November 2012 to October2013. Permission from the institutional ethics committee was obtained. Consent was obtained from the patient or their guardians. Subjects and their accompanying family members were interviewed. All the previous prescriptions and case sheets which are available were reviewed.

The study sample was collected from the daily out-patient attendance over a 1-year period using systematic sampling procedure. A total 4800 patients were included in study. A total no of 4800 out patients were diagnosed according to DSM- IV criteria and were included in the study. [8]Prescriptions were collected and were recorded in a preformed format. These prescriptions were analyzed based on various parameters such as distribution of disease pattern, demographic profile [9] and different classes of drugs used in treatment of various psychiatric ailments based on WHO Essential drug Indicators. Patients were grouped according to their diagnosis.

All the psychotropic drugs prescribed were categorized into 6 broad groups, i.e. anti-psychotics, anti-depressants, anti-anxiety, antimanic/mood stabilizers, anti-cholinergics (Table-1).

OBSERVATIONS & RESULTS

The most common psychiatric disorder encountered in psychiatric outpatient department during our study period was Psychotic disorders (Schizophrenia) 1150(23.95%) followed by Anxiety disorders 953(19.85%) and Bipolar disorders 608 (12.66%) (Table 2). Percentage of male patients attending the Psychiatry outpatient department with various diagnosed psychiatric disorders was more (55.83%) in comparison to female (44.16%).

Age wise distribution of patients shows 702 (14.62%) were below 15 years, 1223 (25.47%) were 15-29 years, 1398 (29.12%) were 30-45 years and 1477(30.77%) were above 45 years of age (Table 3) that indicates maximum percentage of patients of our study populations were between the age group of more than 30 years of age.

A total of 8338 drugs prescribed, among which 7558 (90.64%) drugs were used orally and 780 (9.35%) drugs were given as parenteral formulations (Table 4). Injectable drugs were given in specific patient for better compliance.

Total 2498 antipsychotics were prescribed among which Olanzepine (28.98%) was more frequently used antipsychotic followed by Risperidone (16.89 %), Haloperidol (12.81%). Among antidepressants Escitalopam (45.42%) was prescribed more frequently followed by Des – Venlaflaxine (30.34%) and others were less frequently used as compared to these two drugs in our set up. In the anxiolytic group the most frequently used drug was Clonazepam (39.50%) followed by Nitrazepam (31%) and Chlordiazepoxide (18.54%). For mood stabilization most commonly Valproate (55.91%) was used followed by Ox Carbazepine (33.33%) and Lithium (7.52%). Among anticholinergics, frequency of administration of Trihexyphenydyl (66.82%) was more than Procyclidine (33.16%) in our study population. Among anticonvulsant the most common anticonvulsant was Sodium valproate (57.30%) followed by Ox carbazepine (31.80%) (Table 5&6)

DISCUSSION

The way to know the nature of healthcare system and physician's attitude towards prescribing drugs can be best reviewed by analyzing the prescription and utilization pattern of various available drugs in that set up. [10] In our current study of prescribing pattern of psychotropic drugs, a total of 4800 patients attending the psychiatric outpatient department of IMS & SUM Hospital, Bhubaneswar in 1 year of study period were included.

A previous study [11] has suggested that female receive more psychotropic medications than male. In our study male patients were prescribed, on an average, more psychotropic drugs than female patients but the difference was not statistically significant. Females were prescribed significantly more antidepressants than male and this could be because of the higher incidence of depression in females. In our study maximum patients belongs to 15 – 45 years of age which is similar to the study of Dutta et al. [12]

Patients of psychotic disorders mainly schizophrenia accounted for majority of study population around 23.95 % which was contrary to the study of Piparva et al which showed that patients of major depression and MDP accounted for large majority of study population. [7]

In our study 90.64% oral and 9.35 % parenteral preparations were used which is comparable 93.5% oral and 6.5% parenteral to study by Dutta et al. [12] 1.7 drugs were used per prescription in present study, which is contrary to 2.2-3.3 drugs per prescription in previous study. [13] Antipsychotic drugs were more frequently prescribed drugs in psychiatric OPD in our set up as the most common psychiatric disorder encountered in our hospital was psychotic disorder (most commonly schizophrenia) followed by anxiety disorder. Second most common prescribed drug in psychiatry OPD was antianxiety drugs as they are very useful and efficacious in wide range of conditions for short term or intermittent use.[7] Among the antipsychotics prescribed, the most common antipsychotic was olanzepine (28.98%) followed by risperidone (16.89 %), haloperidol (12.81%) which is contrast to the previous study where atypical antipsychotics were more commonly prescribed, owing to their better tolerability, low relapse rate and safer adverse effect profile.[7, 14]

Indications for use of anti psychotic drugs are schizophrenia, depression & maniac depressive psychosis as some of the patients concomitantly suffering from schizophrenia & depression, which is in accordance with study by Zisook et al.[15]Most common mood stabilizer used in our study was sodium valproate (55.91%) which is in contrast with study of Piparva et al in which most common mood stabilizers prescribed was lithium. [7]Amongst antidepressants, prescribing frequency of SSRIs and SNRIs were the frequently prescribed antidepressants in our set up due to less side effects (most commonly less sedation), safer at higher doses, better tolerability.[12, 16]

CONCLUSIONS

According to various literatures & studies it is obvious that psychiatric medications are one of the most widely prescribed categories of drugs in the nation; yet few studies have comprehensively examined the types of illnesses being treated with these medications. In particular, there has been a great deal of interest and some concern about how psychiatric drugs are being prescribed for medical conditions not included in their Food and Drug Administration-approved labeling – or "off-label" — use. In most circumstances it is legal and a common practice for physicians to prescribe drugs off-label, even though there is less data available regarding the drug's risks and benefits for an unapproved indication.

Our study reveals that in the vast majority of cases physicians are prescribing psychiatric medications for patients with psychiatric conditions. These medications are also sometimes prescribed to treat other conditions. This is particularly true in the case of anti-anxiety drugs.

Further studies in patient compliance with treatment and the dropout rate from psychiatric treatment are required. Studies in prescription audit of psychotropic drugs can be conducted to investigate the scope for improvement in prescribing practices.

Table 1: Category of drugs prescribed in Psychiatry outpatient department:

Anti-psychotics	Anti-depressants	Anxiolytic	Anti-manics/ Mood stabilizer	Anti-cholinergics	Anticonvulsants
Olanzapine	Escitalopam	Clonazepam	Sod. valproate	Trihexyphenedyl	Sod. valproate
Risperidone	Desvenlafexine	Nitrazepam	Ox – Carbamazepine	Benztropine	Ox – Carbamazepine
Haloperidol		Chlordizepoxide	Lithium Lamotrigine	Procyclidine	Leviteracetam
Amisulpiride	Paroxetine	Zolpidem	Carbamazepine		Topiramate
Quitiapine	Dothepine	Alprazolam			
Trifluperazine	Fluoxetine	Diazepam			
Aripiprazole	Amitryptiline	Lorazepam			
Clozapine	Sertraline	Oxazepam			
Blonanserine	Duloxetine				
Thioridazine	Venlafaxine				
Chlorpromazine	Citalopram				
Loxapine					

Table 2: Patterns of distribution of Disease in Psychiatry outpatient department (n=4800):

Name of the disease	Male with percentage	Female with percentage
Psychotic disorders (Schizophrenia)	836	314
Anxiety disorders	531	422
Bipolar disorders	426	182
Depression	380	412
OCD(Obsessive compulsive disorders)	180	316
Insomnia	136	256
Parkinsonism	102	116
Seizure disorders	89	102
Total	2680 (55.83%)	2120 (44.16%)

Table 3: Age distribution of patients prescribed psychotropic drugs (n= 4800):

Age in years	Number of patients	Percentage
<15	702	14.62
15-29	1223	25.47
30-45	1398	29.12
>45	1477	30.77

Table 4: Prescribing indicator analysis:

Total no of prescriptions	4800
Total no. of drugs	8338
Average number of drugs /prescription	1.7
No. of orally administered drugs	7558
No. of drugs administered parenterally	780

Table 5: Groups of Psychotropic drugs used in our study population: (n=8338)

Types of psychotropic drugs	Number of drugs used	Percentage
Anti-Psychotics	2498	29.95
Anxiolytics	2329	27.93
Anti-depressants	1147	13.75
Anti-cholinergics	1085	13.01
Anti-Maniacs	930	11.15
Anti convulsants	349	4.18

Table 6: Commonly used psychotropic drugs in descending order:

Group of psychotropic drugs	Name of the drug	Number of drugs prescribed
Anti-psychotics(n=2498)	Olanzapine	724
	Resperidone	422
	Haloperidol	320
	Amisulpirite	312
	Quitiapine	292
	Trifluperazine	191
	Aripiprazole	119
	Clozapine	70
	Boronserin	20
	Thioridazine	10

	Chlorpromazine	9
	Loxapine	9
Antidepresants (n=1147)	Escitalopam	521
	Des – Venlaflaxine	348
	Paroxetine	74
	Dothiapine	70
	Fluexetine	62
	Amitryptiline	38
	Sertraline	24
	Dulexetine	10
Anxiolytics (n= 2329)	Clonazepam	920
	Nitrazepam	722
	Chlordiazepoxide	432
	Zolpidem	211
	Alprazolam	34
	Diazepam	10
Anti-maniac/Mood Stailizers (n= 930)	Sodium Valproate	520
	Ox carbazepine	310
	Lithium	70
	Lamotrigine	20
	Carbamazepine	10
Antichilnergics (n=1085)	Trihexyphenedyl (THP)	725
	Procyclidine	360
Anti-convulsants (n= 349)	Sodium Valproate	200
	Ox carbazepine	111
	Levateracetam	28
	Topiramate	10

REFERENCES

1. Ramsey LE. Br J Clin Pharmacol, 1993; 35: 575-6.
2. Lunde PKM, Baksaas L. WHO Reg Pub Eur Series 17, 1979.
3. Clark RH, Bloom BT, Spitzer AR, Gerstmann DR. Reported Medication Use in the Neonatal Intensive Care Unit: Data from a Large National Data Set. Paediatrics, 2006; 117:1979-87.
4. Banerjee*et al*: BMC Psychiatry, 2013;13:96: 1-2
5. The ESEMeD/MHEDEA 2000 investigators. Acta psychiatr scand 2004; 109:55-64.
6. Baldessarini RJ, Tarazi FL. Pharmacotherapy of psychosis and mania. In: Hardman JG, Limbird LE, Gilman AG, editors. Goodman and Gilman's The Pharmacological basis of therapeutics. 11th ed. New york: McGraw-Hill; 2006. P 429-54.
7. Piparva K. G, Parmar D. M, Singh A. P, Gajera M. V, Trivedi H. R. Indian J Psychol Med, 2011; 33(1): 54–58.
8. Flaum M, Andreasen NC. Schizophr Bull, 1991; 17(1):133-56.
9. Agarwal AK. Indian J Community Med, January 2008; 33(1): 50–51.
10. Laporte JR. Development Dialogue, 1988; 48-55.
11. Morabia A, Fabre J, Dunand JP. J Clin Epidemiol, 1992; 45:111-16.
12. Dutta SB, Dhasmana DC, Bhardwaj R. Indian journal of psychiatry, 2004; 46(4):381-82.
13. Rittmannsberger H, Meise U, Schauflinger K, Horvath E, Donat H, Hinterhuber H. European Psychiatry, 1999; 14(1):33-40.
14. Dhasmana DC, Rawat Y, Mishra KC. Indian J Pharmacol, 2033; 35:322-24.
15. Zisook S, Shear K, Kendler KS (2007). World Psychiatry, 6(2): 102–107.
16. Potter WZ, Hollester LE. Antidepression Agents. In: Katzung BG. Editor. Basis and clinical pharmacology 10th ed. Boston: McGraw-Hill; 2007. p. 475-88.