

Whether Olanzapine or Risperidone? A cross sectional study to find out the most common psychotropic drug used at a tertiary care hospital of Nepal



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Abstract

Background

There are a number of Psychotropic drugs available in the market for treatment of mental disorders currently. It is interesting to know the pattern of drug utilization among the psychotropic drugs and the degree of control of the psychiatric cases with the psychotropic drugs in the actual clinical set up in a tertiary health care centre. The main objective of the study was to find out the most common drug prescribed by the psychiatrist among the psychotropic drugs.

Methods

This is a cross sectional questionnaire based observational study was carried out at Manipal Teaching Hospital. It is a

tertiary care hospital situated in the western development region of Nepal.

Results

Most of the patients were in between age group 14–40 years 77.6%. Majority of the patients were Brahmin 28.1%, Chettri 24%, Dalit 22.9%. About 79.2% of the patients were unemployed. Most of the patients were Hindu 84.4% followed by Buddhists 11.5%. The group of Psychotropic drugs most commonly prescribed were Neuroleptics 42.7% followed by Anxiolytics 16.1%, Antidepressants 15.1% Antimanics 9.4% as monotherapy and two or more psychotropic drugs combined 16.7%. Olanzapine was the most common drug prescribed followed by Haloperidol and Promethazine, Risperidone, Alprazolam, Sodium valproate, Clonazepam, Fluoxetine respectively.

Conclusion

Among the use of Psychotropic drugs there is a shift of treatment to Atypical Neuroleptics from Typical Neuroleptics may be due to absence of extrapyramidal and other major adverse effects of Typical Neuroleptics. The treatment of Depression the shift to SSRI from TCA has made the treatment more safe. Sodium valproate was found to be the commonest drug prescribed for the treatment of bipolar affective disorder, recommended that there is a trend of using newer drugs rather than the conventional mood stabilizers like Lithium for bipolar affective disorder.

Key words

Manipal teaching hospital, Psychiatry, Psychotropic drugs, Nepal, Western development region



Background

According to WHO, Drug utilization study is defined as a study of marketing, distribution, prescription and uses of drugs in a society highlighting on the resulting medical, social and economic consequences [1, 2].

There are a number of Psychotropic drugs available in the market for treatment of mental disorders currently. Newer drugs for schizophrenia like Olanzapine, Clozapine, Risperidone, Aripiprazole, Ziprasidone are promoted to be better drugs than the conventional drugs like Chlorpromazine, Haloperidol [3]. Drugs like Venlafexine, and Trazodone are promoted as better alternatives to the typical antidepressants like Fluoxetine, Paroxetine, and Amitriptyline [4]. Anticonvulsants like Carbamazepine, Lamotrigine, Valproate, Atypical neuroleptics are better alternatives to Lithium in bipolar affective disorder [5]. Drugs like Azathioprine e.g. Buspirone are promoted as better alternatives to the Benzodiazepines like Diazepam, Alprazolam [6]. So it is interesting to know the pattern of drug utilization among the psychotropic drugs and the degree of control of the psychiatric cases with the psychotropic drugs in the actual clinical set up in a tertiary health care centre.

Also in carrying on this study one is expected to get an idea regarding clinician's choice and patient's tolerability of psychotropic drugs. The main objective of the study was to find out the commonest drug prescribed by the psychiatrist among the psychotropic drugs and the degree of control of the psychiatric cases with the psychotropic drugs in the actual clinical set up in a tertiary health care centre of western development region of Nepal. A need of study further increases as there is no sufficient data on utilization pattern of psychotropic drugs on Nepalese population.

Material and Methods

Study design, participants

This is a cross sectional questionnaire based observational study was carried out at Manipal Teaching Hospital. It is a tertiary care hospital situated in the western development region of Nepal.

Data collection

The information and data was collected includes socio demographic details of the patient at the Psychiatric inpatient Department of Manipal Teaching Hospital.

Inclusion criteria

A total of 240 Psychiatric cases were admitted in the indoor in between October 2009 to March 2010 were included in the study. Out of which 48 cases were not of pure psychiatric

problem, they were cases of addiction, poisoning, mental retardation and behavioral disorders which were excluded from this study. Only 192 cases were utilized as they were of pure psychiatric disorders.

Exclusion criteria

Out patients were excluded from the study as we wanted to find the psychotropic drug utilization study in those patients who are critically ill. 48 cases were not of pure psychiatric problem, they were cases of addiction, poisoning, mental retardation and behavioral disorders were not considered for this research.

Sample size calculation

In a pilot study done prior to the study in 10 patients. $P=70\%$, $Q=30\%$, Allowable Error = 10% of $P = 7$. Required sample size for 95% CI is 165. We got adequate sample size of 240 [7, 8].

Outcome variable

The main outcome variable was the most common psychotropic drug used in the psychiatric inpatient.

Explanatory variables

Factors which were taken into consideration at individual level were age, gender (male and female), religion (Hindu, Buddhist, Christian, Muslim), Ethnicity (Brahmin, Chettri, Newar, Gurung, Dalit, Magar, Pun, lama, others), employment (employed, unemployed).

Ethical committee approval

The Research was conducted in accordance to latest version of the Declaration of Helsinki. Prior the study, the permission was taken from the institutional ethical committee, Manipal Teaching hospital, Nepal.

Data management and statistical analysis

The data collected was analyzed using Excel 2003, R 2.8.0 Statistical Package for the Social Sciences (SPSS) for Windows Version 20.0 (SPSS Inc; Chicago, IL, USA) and EPI Info 3.5.1 Windows Version.

Results

Most of the patients were in between age group 14–40 years 77.6% followed by 40–60 years 14.1% (Table 1).

Table – 1 Age distribution of patients

Age (years)	n=192
<14	1(0.52)
14–40	149(77.6)
40–60	27(14.1)
>60	15(7.81)



Table 2 depicts that as per as the ethnicity is concerned most of the patient were Brahmin 28.1%, Chettri 24%, Dalit 22.9% respectively. About 79.2% of the patients were unemployed. Most of the patients were Hindu 84.4% followed by Buddhists 11.5% respectively.

The group of Psychotropic drugs most commonly prescribed was Neuroleptics 42.7% followed by Anxiolytics 16.1%, Antidepressants 15.1% Antimanics 9.4% as monotherapy and two or more psychotropic drugs combined 16.7%.

Table 2 – Sociodemographic distribution of the patients			
Ethnicity of the patient	Gender		Total
	Male (n=101) (52.6)	Female (n=91) (47.4)	
Brahmin (28.1)	29	25	54
Chettri (24)	27	19	46
Newar (8.9)	10	7	17
Gurung (7.3)	7	7	14
Dalit (22.9)	20	24	44
Magar, pun, lama (3.6)	2	5	7
Others (5.2)	6	4	10
Total	101	91	192
Employment	Gender		Total
	male	female	
Employed (20.8)	15	11	26
Unemployed(79.2)	86	80	166
Total	101	91	192
Religion of the patient	sex of patient		Total
	male	female	
Hindu(84.4)	88	74	162 (84.4)
Muslim(2.1)	2	2	4(2.1)
Christian (2.1)	2	2	4(2.1)
Buddhist (11.5)	9	13	22(11.5)
Total	101	91	192

Discussion

Most of the studies that have been undertaken in Nepal regarding mental illness are about the prevalence of mental illness. This is the first study on utilization of Psychotropic drugs in indoor patients. Only one study has been undertaken in 2001 in Psychiatric outpatients in Western Nepal, where 71.3% of the drugs were prescribed by the brand names [9].

Psychotropic drugs

In this study, the group of Psychotropic drugs most commonly prescribed was Neuroleptics 42.7% followed by Anxiolytics 16.1%, Antidepressants 15.1% Antimanics 9.4% as monotherapy and two or more psychotropic drugs combined 16.7%. This finding is quite different from a study conducted on psychotropic drugs in outpatients showed that the frequency of use of antidepressants was 45.94%, anxiolytics 19.41%, antipsychotics 8.6% and antimanics 1.96% [9].

Figure 1 – Most common psychotropic drugs prescribed

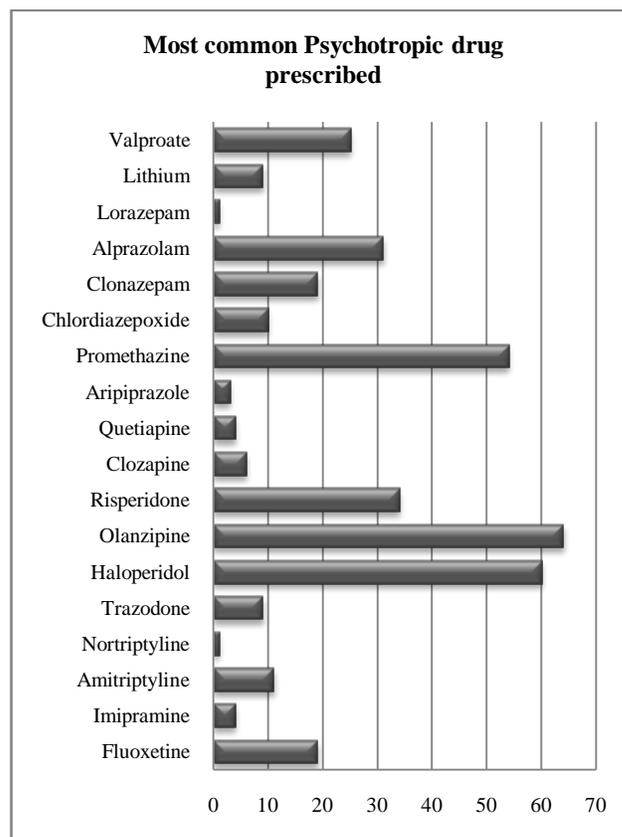


Figure 1 depicts the most common psychotropic drug prescribed by the psychiatrist. Olanzapine was commonest drug followed by Haloperidol and Promethazine, Risperidone, Alprazolam, Sodium valproate, Clonazepam, Fluoxetine respectively.

Olanzapine

Among the psychotropic drugs Olanzapine was the most common drug psychotropic drug prescribed followed by Haloperidol. Atypical antipsychotic a better control of symptoms and reduced the chances of adverse effects especially the extrapyramidal ones in contrast with typical antipsychotic drugs. The newer atypical antipsychotics also proved to be better in improving negative symptoms, cognitive dysfunction and also efficacious in antipsychotic resistant schizophrenia [10].

Sodium Valproate

For bipolar affective disorder Sodium valproate was commonly used as compared to lithium. A study conducted by Vacheron–Trystram MN et al., at France depicts that Sodium valproate and Carbamazepine can be used in all phases of Bipolar affective disorder viz. acute treatment of mania and maintenance therapy and carbamazepine has been indicated for acute mania in many countries across the world [11].



SSRI'S: Fluoxetine

According to the utilization pattern of antidepressants it was found that among the Selective serotonin reuptake inhibitors Fluoxetine was used relatively higher than conventional drugs like Tricyclic antidepressants. Our findings are similar to a study done on drug utilization of antidepressants in UK done from 1992 to 2001 in children and adolescents which showed that a total of 24976 patients received antidepressants. Among the antidepressants Selective serotonin reuptake inhibitors (SSRI's) Fluoxetine 9.89%, was the commonest drug used. Among the Tricyclic antidepressants (TCA) Amitriptyline 5.72% followed by Imipramine 2.08% and Nortriptyline [12].

Alprazolam

As per as anxiolytic drugs are concerned there was a trend towards the use of shorter acting Benzodiazepines such as Alprazolam. Continuous and prolonged use of longer acting Benzodiazepines has resulted in dependence and may have withdrawal symptoms [6].

Conclusion

Among the use of Psychotropic drugs there is a shift of treatment to Atypical Neuroleptics from Typical Neuroleptics may be due to absence of extrapyramidal and other major adverse effects of Typical Neuroleptics. In the treatment of Depression the shift to SSRI from TCA has made the treatment safer. Sodium valproate was found to be the commonest drug prescribed for the treatment of bipolar affective disorder, recommended that there is a trend of using newer drugs rather than the conventional mood stabilizers like Lithium for bipolar affective disorder.

Limitations & future scope of the study

This study comprises of data collected from a tertiary care hospital at western development region of Nepal. A multi centric hospital based research with bigger sample size would be beneficial to assess the drug utilization pattern of psychotropic drugs all over Nepal.

Abbreviations

Tri Cyclic antidepressants (TCA), Selective Serotonin reuptake inhibitors (SSRI)

Competing interests

The authors do not have any conflict of interest arising from the study.

Authors' contribution

IB designed the study, deduced the data, drafted the manuscript, and revised it. BS, BR conducted the data analysis, interpreted the data, and revised the manuscript. BS participated in statistical analysis, interpreted the data, and revised the manuscript. AS and PKC critically revised the manuscript. All the authors approved the final document.

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