Pharmacoeconomic Study of the Prescription Pattern of Psychotic Disorders in Psychiatry OPD

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ABSTRACT
Aims and Objectives: *1) To study prescription patterns in psychiatry outpatient department in tertiary care teaching hospital. 2) To determine drug utilization pattern in psychiatry OPD. 3) To analyze cost of prescription. 4) To determine relationship between socioeconomic status and the cost of prescription. 5) To determine the difference between the costs of a prescription with the prescribed brand and alternative cheaper brand of psychotropic drugs.*
Material and Methods: *Patients of either sex and irrespective of age suffering from schizophrenia and other psychotic disorders as diagnosed by psychiatrists were randomly screened. Information about the socioeconomic status of the patient was obtained. Monthly expenditure on prescribed brand of psychotropic drugs and cheaper alternative brands of same drugs was calculated. Data of 158 patients was analyzed.*
Results: *Majority of the patients seeking psychiatric treatment in our hospital belong to lower socioeconomic class. Olanzapine and Risperidone constitute the mainstay of treatment for psychotic disorders. The average cost per prescription of psychotropic drugs for prescribed brand for 30 days was Rs. 385.70 and that for alternative cheaper brand was Rs. 281.79. The difference between the two was Rs. 103.91.*
Conclusion: *Cost of prescription can be significantly reduced by prescribing cheaper alternative brands, allowing brand substitution or by prescribing drugs by generic names especially in cases of expensive drug.*

INTRODUCTION

The major psychiatric disorders are common and often run a chronic course. As a result of their high prevalence, early onset and persistence, psychiatric disorders contribute substantially to the burden of illness in all countries.[1] Mental disorders represent four of the ten leading causes of disability worldwide. This growing burden amounts to a huge cost in terms of human misery, disability and economic loss.[2] Surveys of mental morbidity carried out in various parts of India suggest a morbidity rate of not less than 18-20/1000 population.[3] For treatment of schizophrenia and other psychotic disorders, a wide array of psychotropic drugs is used either alone or in combination.[4]

Drug costs per se are important, as they account for a substantial part of the total cost of health

care - typically 10-15% in developed countries and up to 30-40% in some developing countries. Concerns about the cost of medical care in general, and pharmaceuticals in particular, are currently being expressed by all health systems. There is a general focus on providing quality care within limited financial resources.[5]

Pharmacoeconomics can be described as a social science concerned with the impact of pharmaceutical products and services on individuals, health systems and society, as well as the description and analysis of the costs. One of the primary goals of pharmacoeconomics is to determine which healthcare alternatives provide the best healthcare outcome. Pharmacoeconomics aims to improve the allocation of resources for pharmaceutical products and services.[6] Spending on drugs is a major target for savings in health care costs for governments around the world.[7]

WHO describes drug utilization as the "marketing, distribution, prescription and use of the drugs in a society with special emphasis on the resulting medical, social and economic consequences".[8] Drug utilization research is an essential part of pharmacoeconomics.[5] Pharmacoeconomics is a branch of health economics which particularly focuses upon the costs and benefits of drug therapy. The methodology for analysing costs and benefits gives rise to the four commonly encountered types of economic evaluation cost-minimisation analysis, cost-effectiveness analysis, cost-benefit analysis, and cost-utility analysis.[7]

Numerous methods are utilised to determine the least expensive treatment with the best treatment outcome. Healthcare policies worldwide are focused on increasing efficiency at a lower cost without reducing either the quality of healthcare or access to it. Over the past 20 years, pharmacoeconomics has become more important due to an increased emphasis on efficient drug therapies for disease, which increase health costs, etc. Rising health expenditures have led to the necessity to find the optimal therapy at the lowest price. Pharmacoeconomics is an innovative method that aims to decrease health expenditures,

whilst optimising healthcare results. Healthcare resources are not easily accessible and affordable to many patients, therefore pharmacoeconomic evaluations play an important role in the allocation of these resources. Pharmacoeconomics strives to guide the utilization of healthcare resources optimally.[6]

In India most of the patients who are coming to a hospital like ours belong to lower socioeconomic status. There is an expectation that cost of the prescription is related to socioeconomic status of the patient so that the poor patients get the treatment at an affordable cost. Therefore to study the prescription pattern, to analyze the cost of prescription and to determine its relationship with socioeconomic status of the patient, present study was carried out in the psychiatry out-patient department.

MATERIAL AND METHODS

A cross sectional prospective study was conducted from October 2015 to December 2016 in department of pharmacology in collaboration with psychiatry department at CCM Medical college and hospital, Durg (CG) after obtaining permission from the Institutional Ethics Committee (IEC).Patients of either sex and irrespective of age suffering from schizophrenia and other psychotic disorders as diagnosed by psychiatrists were randomly screened. Information about the socioeconomic status of the patient was obtained. The data from the prescription card of the patients was noted in a structured proforma. Monthly expenditure on prescribed brand of psychotropic drugs and cheaper alternative brands of same drugs was calculated on the basis of drug costs available in CIMS. Data of 158 patients was analyzed.

Statistical Analysis

The correlation of monthly expenditure on psychotropic drugs of the prescribed brand with socioeconomic score of the patient and the correlation of difference between the monthly expenditure on prescribed and alternative cheaper brand of psychotropic drugs with monthly

expenditure on psychotropic drugs of the prescribed brand was calculated using Pearson's product-moment correlation coefficient (PMCC) typically denoted by r. p value less than 0.05 was considered statistically significant.

RESULTS

Majority of the patients seeking psychiatric treatment in our hospital belong to lower socioeconomic class. Olanzapine and risperidone constitute the mainstay of treatment for psychotic disorders. The average cost per prescription of psychotropic drugs for prescribed brand for 30 days was Rs. 385.70 and that for alternative cheaper brand was Rs. 281.79. The difference between the two was Rs. 103.91.

Correlation analysis

Table 1: Correlation analysis of monthly expenditure on psychotropic drugs of prescribed brand (Y) with socioeconomic score of the patients (X) and difference in the monthly expenditure of prescribed and alternative brand of psychotropic drugs (Z) with monthly expenditure on psychotropic drugs of prescribed brand (Y).

Sr.No	Parameter correlated	Correlated with	Pearson's correlation coefficient (r)	p-value	significance
1	Y	X	0.054	0.497	Not significant
2	Z	Y	0.570	<0.0001	Highly significant.

On correlating monthly expenditure on psychotropic drugs of prescribed brand with socio economic score of the patients, the Pearson correlation coefficient comes out to be r = 0.054 which implies that there is no linear correlation between the two variables and the monthly expenditure on psychotropic drugs of prescribed brand is not correlated with the socioeconomic status.

On correlating difference in the monthly expenditure of prescribed and alternative brand of psychotropic drugs with monthly expenditure on psychotropic drugs of prescribed brand, the Pearson correlation coefficient comes out to be r = 0.570 which implies that there is a strong linear positive correlation between the two variables, so as the monthly expenditure on psychotropic drugs of prescribed brand increases the difference in the monthly expenditure of prescribed and alternative brand of psychotropic drugs also increases.

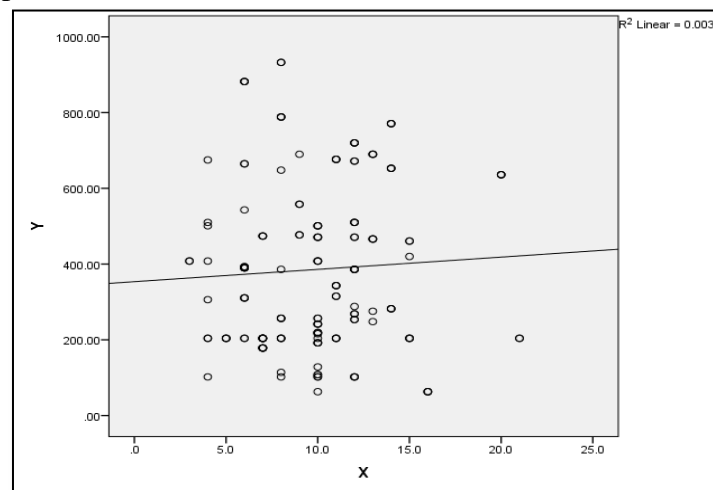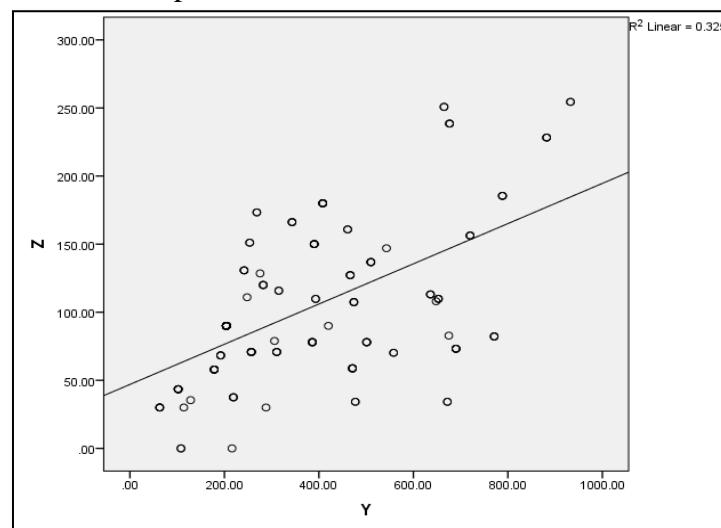**Fig. 1** Correlation of socio-economic score with prescribed brand

Fig. 2 Correlation of prescribed brand with difference of prescribed & alternative brand

DISCUSSION

Total 158 patients suffering from psychotic disorders were selected. The majority of patients in our study were in the age group of 21-30 years (40.7%) followed by 31-40 years age group

(24%). There were only 4% patients in the age group of 60 years & above. As compared to many Western countries the geriatric age group (60 years and above) finds lesser representation in the psychiatric facilities in India.[9]

Average number of drugs per prescription is an important index of prescription analysis. The average number of drugs per prescription in our study was 2.01. In a similar study conducted in Nepal, the average number of drugs per prescription was 1.75.[10]

Out of 318 psychotropic drugs that were prescribed in our study, Olanzapine was the most frequently prescribed antipsychotic for the patients of psychotic disorders, accounting for 59.5% of the prescription followed by Risperidone (27.85%) and Trihexiphenidyl (22.8%), which is in accordance with most of the studies conducted in developed countries. In most of the countries atypical antipsychotic have replaced conventional first line pharmacological treatment for psychotic disorders.[11-13] .

In our study, average total cost per prescription for psychotropic drugs prescribed by brand names for 30 days was Rs. 385.70. The average total cost per prescription for psychotropic drugs calculated for alternative cheaper brand for 30 days was Rs. 281.79 which was much lesser as compared to cost per prescription calculated for prescribed brand for 30 days. Difference in the monthly expenditure of prescribed and alternative brand of psychotropic drugs was Rs. 103.91.

Though the amount spent by the patients on medications for one month was found to be very high and this cost could not be viewed in isolation. Other expenditure such as cost of travel, and the time and money spent in seeking other services also added to the overall burden. It is not only direct but also indirect costs that play a significant role in increasing economic burden on caregivers. The long duration of treatment of psychiatric illnesses also substantially increases the cost of treatment.[14]

CONCLUSION

Cost of prescription can be significantly reduced by prescribing cheaper alternative brands, allowing brand substitution or by prescribing drugs by generic names especially in cases of expensive drugs. Analysis of prescribing habits gives an insight into the educational needs and attitudes of general practitioners and psychiatrists. As such, the analysis should not be looked upon as a measure of bad practice but rather as an important marker in the efforts to defeat mental disorders. The present study could serve as a platform upon which further studies in prescription analysis of psychotropic drugs can be undertaken to investigate the scope for improvement in prescribing practices.

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