

RESEARCH ARTICLE

PHARMACOECONOMIC STUDY OF VARIOUS BRANDS OF ANTIPSYCHOTIC MEDICATIONS

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ABSTRACT

To analyze the cost effectiveness of antipsychotic medications in schizophrenia. The cost of different brands of commonly used anti-psychotic medications was sorted out by referring IDR, CIMS and MIMS. The cost was calculated in INR (Indian National Rupee) for ten dosage forms according to their strength. Substantial variation was observed in cost of commonly used brands. The ones with significant variations are Tab. Haloperidol (0.25mg)(Rs.1.96 to Rs.15.00), (10mg)(Rs.16.13 to Rs.58.54); Tab Olanzapine(5mg)(Rs.19.50 to Rs.240), (10mg)(Rs.38.00 to Rs.470); Tab Aripiprazole (10mg)(Rs.52.00 to Rs.144.00), (30mg)(Rs.97.10 to Rs.177.35); Tab.Risperidone (3mg)(Rs.20.13 to Rs.29.00), (4mg)(Rs.29.50 to Rs.37.00); Tab. Quetiapine (100mg)(Rs.40.00 to Rs.56.00), (200mg)(Rs.78.00 to Rs.103). Schizophrenia is a severe form of mental illness which is associated with personal, social and financial burdens. The costly brand of same generic drug is proved to be in no way superior to its economically cheaper counterpart. Ideally, therefore, the drugs should be prescribed in generic to save the patient's money and to enhance the compliance.

Keywords – Antipsychotic drugs, Cost effectiveness, Generic Vs branded, Schizophrenia,

INTRODUCTION

Pharmacoeconomic is a branch of health economic, which particularly focuses upon the cost and benefit of drug therapy. Pharmacoeconomics serves to provide a guide for decision making on resource allocation and in planning process. In recent years, pharmaceutical companies have become more active in sponsoring or conducting economic evaluations for marketing purposes. Curtailment of expenditure on drugs is a major target for saving in health care cost in government as well as private institute who are involved in health care.(N.D. Pise et.al 2012).

Schizophrenia is a severe form of mental illness which is associated with significant and long lasting health, social and financial burden. According to WHO estimates, schizophrenia affects approximately 24 million people worldwide. The most recent publications estimates that the median incidence of schizophrenia varies from 15.2 to 20.0 per 100,000 population/year, higher in the 15-35 years old age group. (Antonio J et.al 2012)

Antipsychotic drugs help many people with schizophrenia by suppressing their psychotic symptoms and enabling them to live more meaningful, stable lives with fewer relapses and reducing the need for hospitalization.(consumer report health.org.2009)

Pharmacological intervention is the commonest mode of managing patients with schizophrenia. Both clinicians and patients are concerned that antipsychotic drugs are costly and

contribute to poor drug compliance in India. This study compared the equivalent doses of antipsychotic drugs and their costs across brands.

The number of brands available currently for each antipsychotic drug has steadily increased. With the influx of so many brands, it becomes increasingly necessary to examine issues of comparability across different pharmacological agents as well as individual user costs and discuss other issues that influence prescribing and compliance.(Girish k et.al 1999)

The consideration of cost of treatment for ailments of patients is an important aspect in health economics. In recent years most emphasis has been given on cost effective practice which should be adopted by the clinician.

MATERIALS AND METHODS

The different brands of commonly used anti-psychotic drugs were sorted out by referring Indian Drug Review(7), Current index of medicaIMS(6). The cost of 10 dosage forms (Capsules, tablets) in INR of each brand, cost range and cost ratio were calculated.

RESULTS AND DISCUSSION

It was observed that number of brands for antipsychotic drugs varied from 5-10. The cost of ratio of different drugs was 1:4 except in brands of Haloperidol which was 1:7 and Olanzapine which was 1:12. Substantial variation was observed in the cost of commonly used brands. The once significant variations in the cost of brands of Haloperidol 0.25mg varied from Rs. 1.96 to Rs 15.00; 5mg from Rs 9.25 to Rs. 41.45 and 10mg varied from Rs. 16.13 to 58.54.Olanzapine 5mg varied from Rs.19.50 to Rs.240.00; 10mg from Rs. 38 to Rs.470. Aripiprazole 10mg varied from Rs.52 to Rs.144; 15mg varied from Rs.70 to Rs. 195.00 respectively. The other antipsychotic drugs like Chlorpromazine, Risperidone, Quetiapine, Amisulpiride, Ziprasidone, Trifluoperazine also showed the cost- variations in their brands of same strength.(Table-1)

Schizophrenia is one of the commonest disorders seen by practising psychiatrists and its effective treatment relies on the use of antipsychotics.

It has been observed that there is a gross variation in the cost of different brands of generic drugs. In India, most of the drugs are available in brands and these are also prescribed by clinician mostly in brand name. This may affect the patients finances adversely if costly brands is prescribed specially in disease which need treatment for long duration.(R.K.Gupta, Pooja reddy 2011).

Conventional antipsychotic medications (Chlorpromazine, Haloperidol) emerged 50 years ago as the primary in management of schizophrenia, new antipsychotic medications (including risperidone, olanzepine, quetiapine amisulpiride, and paliperidone) have shown themselves to be at least comparable in efficacy, provides less extrapyramidal side effects than conventional treatment.

According to LM Devis etal., there is a difference in direct costs, health state and utility of treatment between first and second generation antipsychotics. First generation antipsychotics are likely to be more cost effective than second generation. Conventional antipsychotics had lower costs and higher quality adjusted life years than atypical antipsychotics and were more than 50% likely to be effective.

Table-1. Showing cost-analysis of various brands of different antipsychotic drugs.

S.N.	Drug Name	Strength (10 dosages in tablet form)	Minimum cost (INR)	Maximum cost (INR)	Cost Diff. (INR)	Cost Ratio
1	Chlorpromazine	25mg 50mg 100mg	1.79 2.84 5.06	5.95 8.50 11.60	4.16 5.66 6.54	1 : 3.3 1:2.9 1:2.3
2	Haloperidol	0.25mg 1.5mg 5mg 10mg	1.96 4.10 9.25 16.13	15.00 17.00 41.48 58.54	13.05 12.90 32.23 42.41	1: 7.65 1:4.14 1: 4.48 1: 3.62
3	Risperidone	1mg 2mg 3mg 4mg	6.82 13.30 20.13 29.50	14.00 24.00 29.00 37.00	7.18 10.70 8.87 7.50	1:2.05 1 : 1.80 1 : 1.44 1 : 1.25
4	Olanzapine	5mg 10mg 15mg	19.50 38.00 65.00	240.00 470.00 87.60	220.50 432.00 22.60	1: 12.30 1 : 12.36 1: 1.34
5	Quetiapine	25mg 50mg 100mg 200mg	16.00 25.00 40.00 78.00	32.20 46.00 56.00 103.00	16.20 21.00 16.00 25.00	1: 2.01 1: 1.84 1: 1.4 1: 1.32
6	Aripiprazole	10mg 15mg 20mg 30mg	52.00 70.00 99.10* 97.10*	144.00 195.00 237.35* 177.35*	92.00 138.00 80.25 125.00	1: 2.77 1: 2.78 1 : 2.39 1 : 1.82
7	Amisulpiride	50mg 100mg 200mg	47.70 77.40 147.60	57.00 92.00 165.00	9.30 14.60 17.40	1 :1.19 1 : 1.18 1 : 1.11
8	Ziprasidone	20mg 40mg 80mg	30.20 59.90 51.60	44.30 89.00 119.60	14.30 29.10 68.00	1 : 1.46 1 : 1.48 1 : 2.31
9	Trifluoperazine	5mg	4.48	10.00	5.52	1 : 2.23

However, despite the availability of new antipsychotics, 20-30% of patients have an inadequate response to medication with 15-20% relapsing each year. Onset of the disease in late adolescence or early childhood together with difficulties in employment and social stigma associated with schizophrenia could be considered the main drivers of the changes in quality of life seen in these patients. Schizophrenia has been shown to place a substantial economic burden on both the health care system and society worldwide due to its potentially large demands on the health care (Antonio J.et.al) In the present study of cost analysis of various antipsychotic brands, it has

been observed that there is a substantial variation in the cost of different brands of same drugs. The cost ratio was also observed to be very high.

It is worthwhile to highlight that schizophrenia is a highly incapacitating disease and choosing the most appropriate drug and formulation for particular patient is crucial. The prevention of relapses is a key factor in the efficacy of antipsychotic drugs.

Girish K, Pratima Murthy et.al(1997) , have also observed a variations in cost of antipsychotic drugs when few brands and few drugs were available for treatment. Our study is in agreement with their studies.

Susan Lenderts et al.(2010), reported that highest average out-of-pockets among branded agent specially with atypical antipsychotics.

Antonio J. Garcia-Ruiz et.al(2012), in their study found that lower average cost-effective ratios for paliperidone ER, risperidone and haloperidol than olanzapine, amiloride or oripiprazole.

It has been observed that doctors have suboptimal awareness of drug cost, which can be improved by if drug cost is given greater emphasis during medical training programme of doctors. A mention of the drug cost is also required in medical literature and drug advertisement. To reduce the cost of drug, it is necessary to prescribe drug in generic. This helps to enhance the patients compliance. (R.K.Gupta, PoojaReddy)

CONCLUSION

Schizophrenia is a severe form of mental illness which is associated with personal, social and financial burdens. If a costly brand is prescribed, the patients have to pay more money unnecessarily for their treatment. The costly brand of same generic drug is proved to be in no way superior to its economically cheaper counterpart. Ideally, therefore, the drugs should be prescribed in generic to save the patient's money and to enhance the compliance.

Further observational and pragmatic trials are required to identify cost-effective antipsychotic use, the determinants of cost and outcomes and the role of first and second generation antipsychotic drugs in long term management.

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