International Journal of Research and Review
www.ijrrjournal.com E-ISSN: 2349-9788; P-ISSN: 2454-2237

Original Research Article

Cost Variation Analysis of Oral Hypolipidemic Drugs Available in Indian Market

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ABSTRACT

Background: In a developing country, drug pricing plays a very important role. Due to the availability of different brands of the same drug, a wide price variation exists. Hence this study was planned to find out variation in prices of oral hypolipidemic drugs marketed in India.
Objective: To compare the percentage price variation and cost ratio of various formulations of oral hypolipidemic drugs available in the Indian market.
Methods: Cost of oral hypolipidemic drugs available in the Indian market manufactured by different companies, in the same strength, number and dosage form was obtained from http://www.medguideindia.com. The percentage price variation and cost ratio of each formulation was calculated.
Result: Tab Rosuvastatin 10mg shows maximum price variation of 3233% and a cost ratio of 33.33 followed by Tab Atorvastatin 10mg having a price variation of 1592.85 % and a cost ratio of 16.33. Tab Fenofibrate 67mg shows minimum price variation of 13 % with a cost ratio of 1.13. Highest numbers of brands are for Tab Atorvastatin 10mg (283) followed by Tab Atorvastatin 20mg (191)
Conclusion: There is a huge price variation between the minimum and maximum cost among the different brands of the same drug. Government, pharmaceutical companies, regulatory authorities, physicians and pharmacist need to work together towards controlling the drug pricing and helping the patients in attaining economic benefits.

Key words- Cost variation, oral hypolipidemic, Pharmacoeconomic

INTRODUCTION

India has become a hub of pharmaceutical industry because of availability of cheaper resources. [1] It is flooded with both foreign and domestic manufacturers leading to availability of large number of branded generics. [1] This has led to a wide price variation among different brands of the same drug. [1] Drug pricing plays a very important role in effective treatment and therapeutic compliance. [2] Wide price variation increases the health care cost and causes economic burden to the patients. [3] Also there is no system of registration of medicines. [1]

Dyslipidaemia is one of the major risk factors for atherosclerosis, coronary heart disease (CHD) and cerebrovascular disease (CVD). [4] Lipid lowering agents have been one of the widely used drugs. [4] Among them, statins are most widely prescribed. [4] They have been found to reduce the risk of CHD and CVD in virtually every type of dyslipidaemia. [4]

The Government of India exercises control over the prices through an order called DPCO (Drug Price Control Order) in order to ensure the affordability of essential drugs. [5] National Pharmaceutical Pricing Authority (NPPA) implements DPCO. [7] Under the provision of DPCO 2013,

currently 348 drugs are controlled by NPPA. [5]

There is limited data available on the cost difference of various brands of hypolipidemic drugs available in India. Therefore, the current study was planned to compare the cost difference of various oral hypolipidemic agents available in Indian market.

AIM AND OBJECTIVES

Aim: To evaluate the cost of oral hypolipidemic drugs of different brands currently available in the Indian market.

Objectives:

1. To analyse the difference in cost of different brands of same active drug having the same dosage by calculating percentage variation of cost and cost ratio.
2. To compare the percentage price variation and cost ratio of oral hypolipidemicagents across the different brands available in the Indian market.

MATERIALS AND METHODS

1 A list of all oral hypolipidemic drugs available in the Indian market was found out from http://www.medguideindia.com

2 Cost of same drug having the same strength and dosage form manufactured by different companies was found out from the same website.

3. The difference in the maximum and minimum price of the same drug formulation manufactured by different pharmaceutical companies was noted.

4. The percentage variation in price was calculated using the formula:

$$\frac{\text{Price of most expensive brand} - \text{Price of least expensive brand}}{\text{Price of least expensive brand}} \times 100$$

5. Cost ratio was calculated by taking the ratio of the cost of the costliest brand to cheapest brand of the same formulation. This ratio tells us how many times the costliest brand cost more than the cheapest brand in each formulation

6. The drugs being manufactured by only one company and combinations of hypolipidemic drugs were excluded.

Statistical Methods: Findings of our study were expressed as absolute numbers as well as percentage.

RESULTS

The prices of a total of 9 hypolipidemic drugs available in the Indian market in 27 different formulations were analysed. These formulations are manufactured by different pharmaceutical companies.

Table 1 shows the price variation among oral hypolipidemic drugs.

In this group, Tab Rosuvastatin 10mg shows maximum price variation of 3233% and a cost ratio of 33.33 followed by Tab Atorvastatin 10mg having a price variation of 1592.85% and a cost ratio of 16.33

Tab Fenofibrate 67mg shows minimum price variation of 13 % with a cost ratio of 1.13

Highest numbers of brands are for Tab Atorvastatin 10mg (283) followed by Tab Atorvastatin 20mg (191)

TABLE 1: Price variation among oral hypolipidemic drugs

Drug	Formulation	Dose	Manufacturing Company	Min Price (INR)	Max Price (INR)	Cost Ratio	% Price Variation
Atorvastatin	5	5mg	54	0.9	9	10	900
		10mg	283	0.7	11.85	16.92	1592.85
		20mg	191	1.3	21.24	16.33	1533.84
		40mg	39	7.9	25.85	3.2	227.21
		80mg	12	15	37.45	2.4	149.66
Rosuvastatin	4	5mg	49	2.5	7.8	3.12	124.8
		10mg	65	0.9	30	33.33	3233
		20mg	41	1.4	40	28.57	2757.14
		40mg	9	23	52.75	2.29	129.34
Pitavastatin	2	1mg	3	4.8	9	1.87	87.5
		2mg	3	8.5	15	1.76	76.47

Table 1 to be continued…							
Simvastatin	4	5mg	15	1	8.9	8.9	790
		10mg	27	2	12.3	6.15	515
		20mg	20	3	18.50	6.16	516.66
		40mg	3	7.5	21	2.8	180
Lovastatin	2	10mg	20	2.5	12	4.8	380
		20mg	22	2.89	21	7.26	626.64
Ezetimibe	1	10mg	18	5.6	12.5	2.23	123.21
Fenofibrate	4	67mg	2	5	5.65	1.13	13
		145mg	3	9	14.60	1.62	62.22
		160mg	11	7	8.6	1.22	22.85
		200mg	13	4.9	20	4.08	308.16
Gemfibrozil	2	300mg	7	3.5	13.05	3.72	272.85
		600mg	2	10	27.52	2.75	175.2
Niacin	3	50mg	2	0.14	5.95	42.5	4150
		375mg	3	1.65	2.96	1.79	79.39
		500mg	4	2.09	4.41	2.11	111

DISCUSSION

This study was carried out with the main objective of evaluating the cost and percentage price variation among the different oral hypolipidemic drugs of various available brands in India. Our study found that a high fluctuation in the price range of drugs manufactured by various companies.

Many hypolipidemic formulations have a percentage price variation of more than 100%, reaching as high as 3233%. Studies done for other therapy areas such as antidiabetic, antiepileptic, antihypertensive, antipsychotic drugs have also shown the similar results. [1,2,6,7,8]

This could be due to a nexus between pharmaceutical company and physicians. Wherein, physicians get incentives for prescribing a specific brand with higher costs[s1Also]sometime pharmacists, for their economic gains, dispense a brand with higher retail price, quoting the reason that brand prescribed by the physician is not-available. [9] Inadequate government regulation and pricing policies are also responsible for such price parity. Raw material cost, promotion and distribution cost, existing market structure, asymmetry of information etc. could also be the possible reasons. [1,2,6,9]

In India, majority of medical bills are not covered by insurance schemes and they are out of pocket expenses. [1] Hence, there is an acute need to control the pricing of different brands available in the market. [1]

Prescribers should also be provided with a manual of comparative drug prices and they should be encouraged to write the generic names of the drug. [10] All these steps can help in providing cost effective therapy to the patients thereby improving the compliance. [10]

The government and regulatory agencies should frame policies for regulating the drug prices and maximum profit margin for commonly prescribed medications. Currently, very few drugs are under Drug Price Control Order. [1] For the betterment of the healthcare of our country, government should bring majority of the drugs under the DPCO. [10]

Lastly, Pharmacoeconomics should be made an integral part of medical education to create awareness about the impact of cost on the treatment of disease, especially in chronic diseases. [1]

CONCLUSION

Present study highlights the huge price variation among different oral hypolipidemic agents available in the Indian Market. Hence it is recommended that necessary measures should be taken to maximize the benefits of therapy and minimize the negative economic and personal consequences to the patients. [10]

Funding: No funding sources
Conflict Of Interest: None
Ethical Approval: None

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How to cite this article: Lakdawala A. Cost variation analysis of oral hypolipidemic drugs available in Indian market. International Journal of Research and Review. 2018; 5(9):1-4.

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