

Research Article

Analysis of price variation amongst different formulations of anxiolytic drugs available in Indian market

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ABSTRACT

Background: Cost of drug therapy is a very serious issue for people belonging to lower economic status in India. A single drug is manufactured by various pharmaceutical companies and sold under different brand names. The prices of these drugs vary in the Indian market. Anxiety is a symptom of many psychiatric disorders and surgical conditions for which anxiolytic drugs are commonly prescribed. This study was planned to study the price variation amongst the different brands of anxiolytic drugs available in India.

Methods: Price of anxiolytic drugs manufactured by different pharmaceutical companies, in the same strength and dosage forms were obtained from “current index of medical specialties” Jan-April 2016 and “Indian drug review” Vol. XXII, Issue No.1, 2016. The difference in the maximum and minimum price of the same drug manufactured by different pharmaceutical companies and percentage variation in price per 10 tablets was calculated.

Results: Out of 26 single drug formulations analyzed, maximum percentage variation in prices were seen with diazepam (5 mg) 371.42% followed by clonazepam (0.5 mg) 350%, lorazepam (1 mg) 328.57%, alprazolam (0.25 mg) 320% and clobazam (20 mg) 318.18% and out of 7 combination drug formulations analyzed, maximum percentage variation in prices were seen with the combination of chlorthalidone + amitriptyline (10 + 25 mg) 230.07% followed by combination of trifluoperazine + trihexiphenidyl (5 + 2 mg) 150%.

Conclusions: There is a wide variation in the price of different brands of anxiolytic drugs available in Indian market. Government of India should reduce the pricing of drugs by bringing them under drug pricing control order (DPCO).

Keywords: Anxiolytic drugs, Price variation, Drug formulations, Pharmaceutical companies, DPCO

INTRODUCTION

In India, cost of medicines is a very serious issue for people belonging to lower economic status. Most of the doctors prescribe costly branded drugs despite availability of generic drugs of the same quality and at affordable price. Patients are unaware about the availability of generic drugs because of their lack of awareness about them.¹ A single drug is manufactured by various pharmaceutical companies and sold under different brand names. Competition amongst pharmaceutical companies leads to variation in the price of same drugs. The pharmaceutical companies promote

their branded drugs vigorously. Physicians prescribe these costly drugs to the patients increasing their financial burden.^{2,3} There is need to reduce price variation amongst different formulations of drugs available in Indian Market. Drug pricing control order (DPCO) plays an important role in reducing the price of drugs manufactured by different pharmaceutical companies in India. Government of India (GOI) controls and fixes the prices of certain drugs by bringing these drugs under DPCO and makes it affordable. The National Pharmaceutical Pricing Authority (NPPA) implements this DPCO which first came in 1995. Recently it was revised in May 2013.⁴ Anxiety is a symptom of many

psychiatric disorders and an inevitable component of many medical and surgical conditions. Symptoms of anxiety are commonly associated with depression, panic disorder, agoraphobia, obsessive-compulsive disorder (OCD), eating disorders, and many personality disorders. In such situations, antianxiety medications are frequently and appropriately used. Currently, benzodiazepines and the Selective serotonin reuptake inhibitors (SSRIs) are the most commonly used drugs for common anxiety disorders.^{5,6}

Earlier studies have shown a wide variation in prices of the same drugs manufactured by different pharmaceutical companies.⁷⁻⁹ As there is a paucity of data regarding the assessment of price variation among anxiolytic drugs, this study was planned to assess the price variation amongst different anxiolytic drugs available in Indian market.

METHODS

- Price in Indian rupees (INR) of anxiolytic drugs manufactured by different pharmaceutical companies in India, in the same strength was obtained from “Current Index of Medical Specialties (CIMS)” Jan-April 2016 and “Indian Drug Review (IDR)” Vol. XXII, Issue No.1, 2016

- The drug formulation being manufactured by only one pharmaceutical company or being manufactured by different pharmaceutical companies; however, in different strengths were excluded.
- Price of the anxiolytic drugs was calculated for an average of 10 tablets as the number of tablets available per strip varied.
- Difference in the maximum and minimum price of the same drug formulation manufactured by different pharmaceutical companies and percentage variation in price was calculated.

Percentage price variation was calculated as follows:

% Price variation=

$$\frac{\text{Maximum price of drug} - \text{Minimum price of drug}}{\text{Minimum price of drug}} \times 100$$

RESULTS

The prices of a total of 17 drugs (11 single drug therapy and 6 combination therapy), available in 33 different formulations of anxiolytic drugs were analyzed. These 33 different formulations were manufactured by different pharmaceutical companies.

Table 1: Price variation amongst single drug therapy of anxiolytic drugs.

Drug	Formulation	Dose (mg)	Min price (Rs)	Max price (Rs)	% Price variation
Alprazolam	4	0.25	5	21	320
		0.5	10	29	190
		1	11	36	227.27
		1.5	32	52	62.5
Buspirone	2	5	8	18	125
		10	12	32	166.66
Chlordiazepoxide	2	10	15	35	133.33
		25	21	52	147.61
Clobazam	3	5	23	53	130.43
		10	43	106	146.51
		20	11	46	318.18
Clonazepam	4	0.25	9	16	77.77
		0.5	10	45	350
		1	12	36	200
		2	35	67	91.4
Diazepam	2	5	7	33	371.42
		10	11	41	272.72
Hydroxyzine	2	10	8	15	87.5
		25	14	29	107.14
Lorazepam	2	1	7	30	328.57
		2	11	35	218.18
Trazodone	2	25	13	25	92.3
		50	20	44	120
Trifluoperazine	1	5	4	10	150
Venlafaxine	2	37.5	28	47	67.85
		75	38	86	126.31

Table 2: Price variation amongst combination therapy of anxiolytic drugs.

Drug	Formulation	Dose (mg)	Min price (Rs)	Max price (Rs)	% Price variation
Alprazolam + Sertraline	1	0.5 + 25	38	65	71.05
Alprazolam + Fluoxetine	1	0.25 + 20	42	70	66.66
Chlordiazepoxide + Trifluperazine	1	10 + 1	15	25	66.66
Chlordiazepoxide + Amitriptyline	2	5 + 12.5	9	21	133.33
		10 + 25	13	43	230.07
Diazepam + Imipramine	1	5 + 25	9	15	66.66
Trifluperazine + Trihexyphenidyl	1	5 + 2	6	15	150

Table 1 represents the price variation amongst single drug therapy of anxiolytic drugs. A total of 26 single drug formulations were analyzed. Maximum percentage variation in prices were seen with diazepam (5 mg) 371.42% followed by clonazepam (0.5 mg) 350%, lorazepam (1 mg) 328.57%, alprazolam (0.25 mg) 320% and clobazam (20 mg) 318.18%.

Table 2 represents the price variation amongst combination therapy of anxiolytic drugs. A total of 7 combination drug formulations were analyzed. Maximum percentage variation in prices were seen with the combination of chlordiazepoxide + amitriptyline (10 + 25 mg) 230.07% followed by combination of trifluperazine + trihexyphenidyl (5 + 2 mg) 150%.

DISCUSSION

The size of the pharmaceutical industry in India stands at US\$ 20 billion. The Indian pharmaceutical manufacturing facilities registered with the US Food and Drug Administration (FDA) stood at 523 which was highest for any country outside the US.¹⁰ There is marketing of the same drug under different brand names. In India, a large number of different drug formulations are available at different prices.¹¹ Other factors contributing to these price variations are government regulations and pricing policies, cost of raw materials, distribution and promotion, target return on investment.¹²⁻¹⁵

Doctors play an important role in the prescription of drugs. Some doctors prescribe costly branded drugs instead of availability of less expensive generic drugs. Costly drugs make the poor patients purchase less medicines than they have been prescribed and also reduce the doses to be taken.³

Anxiety is a common symptom seen in various psychiatric disorders such as phobia, OCD and panic disorder for which the anxiolytic drugs are commonly prescribed. This study was planned to assess the price variation amongst different brands of anxiolytic drugs in India. This study revealed that there is wide variation in prices of different anxiolytic drugs available in India. Out

of 26 single drug formulations analyzed, maximum percentage variation in prices were seen with diazepam (5 mg) 371.42% followed by clonazepam (0.5 mg) 350%, lorazepam (1 mg) 328.57%, alprazolam (0.25 mg) 320% and clobazam (20 mg) 318.18% and out of 7 combination drug formulations analyzed, maximum percentage variation in prices were seen with the combination of chlordiazepoxide + amitriptyline (10 + 25 mg) 230.07% followed by trifluperazine + trihexyphenidyl (5 + 2 mg) 150%.

CONCLUSION

The Indian pharmaceuticals market is the third largest in volume and thirteenth largest in value. India is the largest provider of generic drugs globally.¹⁰ Government of India should try to reduce the cost of medicines by bringing them under Drug Pricing Control Order (DPCO) as the drugs in DPCO have minimum variation in prices. This will help to reduce the financial burden of the patients and help in improving the continuity of treatment of various diseases among the poor population.

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