Original article

Ambiguous pricing of Nepalese medicines

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Background: The National Drug Policy of Nepal aims to make the country self-reliant in drug production. Nepal follows a competitive market system where both domestic and foreign manufacturers compete. Previous studies had shown ambiguities in drug pricing. Recent studies are lacking. Hence the present study was carried out to obtain information on the price variation between Nepalese brands for different drugs.

Methods: The prices of drugs listed in the December 2005 issue of Nepal Drug Review were analysed. The following formula was used for calculation.
Percentage price variation =
Price of most expensive brand – Price of least expensive brand x 100
Price of least expensive brand
The drugs were grouped together into various therapeuticcategories and for each category, the mean number of brands and the mean percentage price variation was calculated.

Results: A total of 79 drugs and 537 brands were analysed. Thirty-five drugs which were being manufactured by a single manufacturer were listed but were not analysed. The maximum price variation was shown by the group of anthelminthics followed by antihistamines and antiemetics. Among the individual drugs, fexofenadine and albendazole showed the maximum variation. Three of the drug groups showed more than 50% variation. However, ten individual drugs showed more than 50% variation.

Conclusion: Variations were observed in the prices of different brands of the same drug being manufactured by different Nepalese companies. Prescribers and patients should be educated about drug prices. Further studies are required.

Key words: National Drug Policy, Nepal Drug Review, Ambiguous pricing

Introduction

The National Drug Policy of Nepal, 1995 aims to maintain, safeguard and promote the health of the people by making the country self-reliant in drug production.[1] It aims to ensure the availability of safe, effective, quality drugs at an affordable price in sufficient quantities.

In Nepal, there is a domestic pharmaceutical industry and the number of manufacturers is steadily increasing. However, they are not yet sufficient to meet the domestic requirements and medicines are imported from other countries, mainly India. The website, Nepal Drug (www.nepaldrug.com, www.ndr.com.np) lists 38 Nepalese manufacturers. However, some of the smaller manufacturers may not have been listed. In Nepal, clause 26 of the Drug act states that if necessary, the government and the department of drug administration (DDA) can regulate the price of any drug.[2] A decade back the price of large volume parenterals and of two dosage forms of paracetamol were regulated.[3]

Nepal follows a competitive market system where both domestic and foreign manufacturers compete. Competition can lead to increased efficiency and lower prices if there are a large number of providers who compete with each other and information on prices, quality and likely benefit of the product are widely available to consumers. In the case of medicines these criteria may not be met. The person who prescribes the medicine does not pay and the one who pays has very little role or say in the selection of the drug. Previous studies have shown ambiguity in the price of various brands of medicine.[4,5] However, one of the study concentrated only on cardiovascular drugs while the other study was carried out in 2003. Recent information on price variation between brands are lacking. The number of domestic manufacturers has steadily increased in the last three years. Hence the

present study was carried out to obtain information on:

a) Number of Nepalese brands available for various drugs

b) Note the percentage variation in price between brands

c) Calculate the mean percentage price variation for different therapeutic categories and

d) Note the correlation between percentage price variation and the mean number of brands, if any.

Method

The prices of medicines manufactured by Nepalese pharmaceutical companies and listed in Volume 1, Issue 1 (December 2005) of Nepal Drug Review (NDR) were reviewed. The price of a particular medicine being manufactured by different companies in the same strength and dosage form were compared. The drugs which were being manufactured by only a single company or by different companies in different strengths were not included.

The price of brands being manufactured by Indian and other companies and available in the Nepalese market was not included in the analysis. The percentage variation in price was calculated using the following formula:

Percentage variation =

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

The number of companies manufacturing a particular medicine was noted. Liquid preparations and injections were not included in the study. For each drug the percentage price variation was calculated for different strengths, if present and the mean percentage variation was calculated. The drugs were grouped together into various therapeutic categories like anthelminthics, antiemetics, antibiotics, antifungals, analgesics, antidiabetics, cardiovascular drugs, antiulcer drugs and sedative-hypnotics. For each group, the mean number of brands and the mean percentage price variation were calculated. The correlation, if any, between the mean number of brands and the mean percentage price variation was investigated.

The top ten individual drugs in terms of price variation were enumerated.

Results

A total of 537 brands were analysed. A total of 79 drugs were taken up for analysis. A total of 35 drugs were being manufactured by a single manufacturer only. These were listed but were not analysed.

Table 1: Mean number of brands and mean percentage variation in the price of different therapeutic categories of drugs

Therapeutic categories	Mean number of brands	Mean percentage price variation
Anthelminthics	12.5	74.5
Antihistamines	8.3	59.9
Antiemetics	4	50
Antiscabies	4	42
Antibiotics	12.5	38.1
Antifungals	7	36.6
Analgesics	9.6	34.7
Antidiabetics	5.25	31.5
Cardiovascular drugs		7.2 28.3
Antiulcer drugs		9.25 20.1
Sedative hypnotics		5.8 14.8

The mean number of brands and the mean percentage price variation for various groups of drugs are shown in Table 1. The maximum price variation was shown by the group of anthelminthics. This was followed by the group of antihistamines and antiemetics. These three drug groups showed a mean percentage price variation greater than 50%.

Table 2: Top ten drugs showing the maximum percentage price variation

Drug	Percentage price variation
Fexofenadine	129.2
Albendazole	74.5
Ofloxacin	77.7
Metoclopramide	75
Glimepiride	74.2
Doxycycline	73.4
Codeine	66.7
Tetracycline	61.3
Tinidazole	58.9
Enalapril	51.5

Table 2 shows the individual drugs and their percentage price variation for the top ten drugs. The maximum price variation was shown by the antihistamine, fexofenadine followed by the anthelminthic, albendazole. The price variation for all the drugs listed in the table was greater than 50%.

Table 3: List of drugs with only a single manufacturer (according to Nepal Drug Review)

Group of drugs	Constituent drugs
Antibiotics	Cefazoline, Cefotaxime, Neomycin, Sisomicin
Antiprotozoal	Chloroquine, Primaquine, Secnidazole
Antifungal	Itraconazole
Psychotropic	Haloperidol, Lithium, Chlorpromazine
Anthelminthic	Diethyl carbamazine citrate, Praziquantel, Niclosamide
NSAIDs	Mefenamic acid, Naproxen, Piroxicam
Antihistamines	Prochlorperazine, Cinnarizine
Others	Isoxsuprine, Ispaghula, Ketotifen, Lactulose, Chlordiazepoxide, Colchicine, Ethambutol, Ephedrine, Flavoxate, Ondansetron, Oxytocin, Propranolol, Silymarin, Simvastatin

The list of drugs with only a single manufacturer is shown in Table 3. No correlation was seen between the mean number of brands and the mean percentage price variation.

Discussion

The prices of drugs listed in the December 2005 issue of Nepal Drug Review (NDR) were compared. NDR lists the drugs produced and marketed by Nepalese pharmaceutical companies. The study found variation in the prices of Nepalese drugs. A previous Indian study had found wide variation (up to 3406%) in the prices of drugs used for the management of cardiovascular diseases[5] This was much more than that observed in the present study. However,the number of formulations available in the Indian market is over one lakh and more and more formulations are being removed from the price control order.[6]

A previous study carried out in 2003 among a random selection of retail outlets in the Kathmandu valley found that of the 34 generics studied, 25 had more than 50 percent price variation.[4] After 2003, a number of Nepalese pharmaceutical companies have started production and many of them have obtained World Health Organization Good Manufacturing Practices (WHO-GMP) certification.

Ambiguous drug pricing has been observed in previous studies in developed countries.[7,8] In the United States, the market structure of the pharmaceutical industry, research and development prices, numerous channels of distribution and government laws were some of the factors cited for ambiguous pricing.[8] Drug companies recover the research and development prices incurred by them through the sale of the marketed drugs. The successful drugs are said to carry the price of research and development of those drugs which failed to make it to the market. However, in the Nepalese market very few drugs are innovator brands. Some companies may adopt a propaganda type of marketing with very attractive margins for distributors and retailers.

Competition is expected to lead to a decline in prices of products. However, a previous study had observed that more the number of companies manufacturing a particular formulation wider were the price variation.[5] This was not observed in the present study. Many physicians and other healthcare providers lack accurate information on the prices of drugs.[9,10] An American study in 1994 had found that no comprehensive source of accurate drug prices was available.[9] Another study found that physicians often made inaccurate assumptions about the price of drugs. The physicians agreed that medical education should address drug prices.[10] At present, various sources of information on drug prices like Current index of medical specialties (CIMS), Drug today, Advance drug review and NDR are available. However, physicians often lack training to make accurate comparisons based on these data. A recent editorial had stressed on the need to sensitise undergraduate medical students about the price of medicines.[11] While discussing different classes of drugs, the teacher can discuss individual drug prices and the total price of therapy for a condition.[11] Practical exercises can also be carried out.

A recent survey found that many generic reproductive health medicines were available to patients at affordable prices in Nepal.[12] However, a significant brand premium between low and high priced medicines was noted. The geography of the country and the insurgency had made access to reproductive health medicines difficult in many mountain and hill districts according to the authors.[12]

Often, not all brands are available in a particular pharmacy. The physician usually prescribes only those brands which are available. The pharmacy may stock the brands which offer the maximum incentives. People often get medicines directly from pharmacies and retailers without consulting a doctor.[13,14] All these factors may ensure that 'perfect competition' does not exist among brands of drugs.

The Nepalese population lacks adequate information

regarding medicines, its quality and price.[3] A major portion of the money spent on marketing by pharmaceutical companies goes to retailers and wholesalers as bonus. Physician's samples are often sold in the market. These expenses on bonus and misused samples are added to the price of medicines.[3] The authors of a previous study had recommended that the government should intervene and control the price of pharmaceutical products.[4] Thapa BB from the Department of Drug administration (DDA) had written that if the market policy is not in favour of the consumers then the provision of clause 26 of the Drug act for controlling prices should be activated.[3]

Our study had many limitations. The price of only Nepalese brands was compared. The price of injectable and liquid preparations was not studied. The price was compared using NDR and the price at the retail level may be different. Further studies are required.

Conclusion

Substantial variations were observed in the price of different formulations of the same drug being manufactured by different Nepalese companies. Prescribers and patients should be educated regarding the prices of medicines. The issue of drug pricing and factors responsible for ambiguous pricing should be studied and debated.

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