

A Critical Study on Availability and Price Variation Between Different Brands: Impact on Access to Medicines

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The present study aims to present a representative view of the existing situation of availability and price variation, by comparing data about brand availability, and difference in pricing between various brands of 20 drugs under six therapeutic categories. The project involved collecting data from 10 retail outlets from the city area, 10 outlets from town area and 15 retail outlets from the rural area spread over a time span of 6 months. The drug categories studied were analgesics, antibiotics, drugs acting on cardiovascular and central nervous system, drugs acting on gastrointestinal tract and steroids. Data analysis showed that as compared to data on national availability of different brands, the number of brands available in the town, city and rural segments in general, are less. In all sectors, town, city and rural areas, almost equal number of brands is found to be available, with a slightly higher availability in the cities. Price difference between different brands (single drug or drug combinations) varies up to an extent of 881% (in case of amlodipine) on the higher side, and the lowest being 7% (in case of doxycycline). Out of all brands studied, it was observed that the highest priced brand was the most sold brand in cases of 5 products (single drug/ combinations), and the lowest priced brand was the most sold in case of 2 products. It emerged that prices of drug molecules including those under National Essential Drug List, increased during 1996-2004 to a certain extent. It was noted, that % increment of price of drugs under Drug Price Control Order was less than those of drugs not under the purview of Drug Price Control Order. The difference in price between various brands of the same drug is too wide.

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Though the pharmaceutical Industry in India has grown with tremendous pace since independence, not more than 40% of the population of our country can enjoy the benefit of modern medicine¹. Cost of health care is rising rapidly the world over^{2,3}. Experts in our country apprehend that the price of drugs in India too will be high as a consequence of recent changes in global policy, and then it may not be possible to make medicines reach a broad fraction of the population^{1,4}. This may be due to complex socioeconomic reasons, including a number of factors e.g. not following the Essential Drug List, an imperfect drug distribution system, irrational use of medicines, misuse of drugs, multiple prescribing to name a few. Though several investigators worked in this field in different other countries⁵⁻⁷, as well as in India⁸⁻¹¹, there is still a lot of scope for a systematic and well-designed scientific study to identify the reasons and to suggest probable measures to solve the problem.

Health administrators and policy makers need to urgently redesign the existing health infrastructure to extend health care to a greater section of people at an affordable cost. For this purpose it is essential to collect data to assess the Drug Utilization Pattern of different countries and to make necessary interventions and policy changes to eliminate the shortcomings present, if any.

Indian markets are flooded with a huge number of branded formulations, available for every drug molecule, with simultaneous pricing difference between the different brands of the same formulation. This apart from creating confusion among innocent consumers, often, allows them to be misled by unfair traders. The current study aims to project a representative view of the existing situation, by collecting data about brand availability, and difference in pricing between various brands of 20 drugs, under six therapeutic categories.

The project involved collecting data from 10 retail outlets from the city area, 10 outlets from town area, and 15 retail outlets from the rural area of West Bengal, spread over a time span of 6 months (fig. 1). Each retail outlet in a rural area caters to lesser number of patients in comparison to a town or city outlet. Thus to get an approximately equivalent customer base, 15 retail outlets were randomly selected. The study involved 20 commonly used drugs available under different brands, with different pricing. The drug categories studied were analgesics, antibiotics, drugs acting on CVS, CNS, drugs acting on the GIT and steroids. Data collected were analyzed and the following interpretations were made^{12,13}.

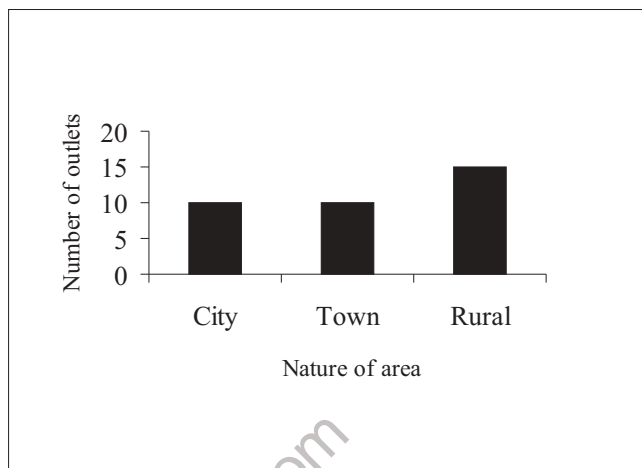


Fig. 1: Expansion of the study

Data analysis showed that as compared to national availability data of different brands (as per CIMS)¹⁴, the number of brands available in the town, city and rural segments in general, in West Bengal are less. It may be due to the fact that all the manufacturers are not marketing each of their products uniformly at all corners throughout the country. Some of them target a specific state or district. Sometimes they may prefer marketing in cities or towns or rural areas. Brands not available are manufactured by less reputed companies. In all sectors, town, city and rural areas, almost equal number of brands

TABLE 1: AVAILABILITY OF BRANDS IN DIFFERENT AREAS

Name of drugs	*At City No.	**At Town No.	***At Rural No.	#CIMS No.
Diazepam	6	4	2	11
Dexamethasone	3	3	1	7
Prednisolone	7	10	3	5
Ibuprofen	13	12	6	10
Ibuprofen + Paracetamol	21	27	28	20
Valdecoxib	14	18	13	20
Amoxicillin	26	8	12	89
Amoxicillin + Clavulanic acid	9	6	6	9
Doxycycline	12	9	5	16
Ciprofloxacin	19	17	21	75
Azithromycin	10	6	4	30
Cefotaxime	13	7	6	26
Ranitidine	18	16	15	29
Omeprazole	12	14	9	42
Metronidazole	12	8	7	13
Albendazole	18	16	17	48
Propranolol	9	6	4	12
Nifedipine	5	5	3	9
Amlodipine	13	12	7	46
Losartan	10	9	6	10

*The total number of branded products available in the city surveyed, **The total number of branded products available in the towns surveyed, ***The total number of branded products available in rural area surveyed, #The total number of branded products mentioned in the CIMS-Apr 2004

are found available, with a slightly higher availability in the cities (Tables 1 and 2). This may be due to the higher demand in cities because of more practicing specialist physicians as compared to rural areas, more affordability, and easy access for the city-based population to different brands, due to higher no. of wholesale and retail sale outlets. In case of prednisolone, ibuprofen and ibuprofen+paracetamol reverse trend was observed. The reason may be that all the products of all manufacturers are not listed in the CIMS. Extra brands available are not popular brands and manufactured by mediocre companies. However, prices of those products were comparable to that of the products of standard companies.

Price difference between different brands of products (single drug or drug combinations) were found to vary up to the extent of 881% (in case of amlodipine) on the higher side, 7% (in case of doxycycline) on the lower side. Out of all the brands studied, it was observed that the highest priced brand was the most sold in case of 5 products (single drug/combinations), and the lowest priced brand was the most sold in case of 2 products. This may be due to brand loyalty of the prescribers. If the consumers were the decision makers the picture could have been different, since the price factor would play a major role then.

Out of the 20 drugs studied, 13 were included in the National Essential Drugs List¹⁵ and 14 were found in

CIMS-1996¹⁶. Out of these 14 products that were listed in CIMS, 11 products were included in the National EDL. Among these 11 products, prices have increased (over a span of 1996-2004) for 8 products, and decreased for 2 products, and has remained unchanged for one product only. The maximum rise in price has been 131%. Out of the 3 drugs not included in the EDL, price of 2 molecules have increased, over the years but price decrease was noted for one drug. Analysis showed that prices of drugs in general, including those within the scope of EDL, have increased (Table 3).

Among the 20 drugs studied, 8 were under DPCO-1995¹⁷. It was noted that % increment of price of these 8 products was less than those of drugs that were not under the purview of DPCO. Prices were reduced for only 2 drugs within DPCO.

Large number of brands available for a drug is a matter of concern, since patients get confused, as well as random brand substitution takes place, with disregard to bioequivalence, therapeutic equivalence and cost of treatment. The difference in price between various brands of the same drug is too wide, leading to unfair burden on the consumer. Due consideration must be placed on pricing of drugs in the EDL, to increase their accessibility to common people. DPCO appears to be an effective tool to keep in rein the drug prices.

TABLE 2: PRICE OF DIFFERENT BRANDS

Name of drugs	Dose	*Highest price Rs.	**Lowest price Rs.	@Most sold brand & unit price Rs.	#Price difference Rs.	##Higher by %
Diazepam	5 mg	1.76	0.29	Valium - 1.76	1.47	506
Dexamethasone	0.5 mg	0.31	0.15	Decdak ST - 0.31	0.16	106
Prednisolone	10 mg	1.47	0.84	Wysolone - 1.34	0.63	75
Ibuprofen	400 mg	0.68	0.51	Brufen - 0.67	0.17	33
Ibuprofen+Paracetamol	400 mg+500 mg	1.33	0.68	Flexon - 0.68	0.65	95
Valdecoxib	20 mg	5.5	0.80	Valto - 3.50	4.7	587
Amoxicillin	500 mg	7.72	3.09	Wymox - 7.72	4.63	149
Amoxicillin+Clavulanic acid	500 mg+125 mg	34.50	19.69	Clavam - 34.50	14.81	75
Doxycycline	100 mg	6.2	1.55	Doxy-1 - 3.96	4.65	7.20
Ciprofloxacin	500 mg	12.58	3.75	Cifran - 8.96	8.83	235
Azithromycin	500 mg	78.29	16.5	Aziok - 25.80	61.79	374
Cefotaxime	250 mg	28.50	14.25	Taxim - 27.69	14.25	100
Ranitidine	150 mg	1.9	0.51	Rantac - 0.53	1.39	272
Omeprazole	20 mg	3.99	0.58	Omez - 3.98	3.41	587
Metronidazole	400 mg	0.83	0.63	Metrogyl - 0.63	0.20	31
Albendazole	400 mg	12.25	7.25	Zentel - 12.25	5	68.96
Propranolol	40 mg	2.00	0.50	Inderal - 1.80	1.50	300
Nifedipine	10 mg	2.35	0.92	Nicardia - 0.89	1.43	493
Amlodipine	5 mg	4.81	0.49	Amtas - 2.05	4.32	881
Losartan	50 mg	7.00	1.7	Losacar - 4.40	5.30	311

*Highest price amongst all branded products of the same drug, **Lowest price amongst all branded products of the same drug, @Most sold brand amongst all available brands of the same drug and its unit price, #Price difference between the highest and lowest priced brand of the same drug, ##The extent of price difference between the highest and the lowest priced brand of the same drug in percentage

TABLE 3: PRICE ESCALATION OF DIFFERENT BRANDS DURING (1996-2004)

Brand name	Generic name	**Status of generic drug as per EDL-1996	#Price in 1996 Rs.	***Price in 2004 Rs.	##Price Escalation %
Valium 5 mg	Diazepam	Essential	0.76	1.76	131.57
Decdak ST 0.5 mg	*Dexamethasone	Essential	-	0.31	-
Wysolone 10 mg	*Prednisolone	Essential	1.02	1.34	31.37
Brufen 400 mg	*Ibuprofen	Essential	0.67	0.67	0.00
Flexon	Ibuprofen 400 mg + Paracetamol 500 mg	Non-essential	-	0.68	-
Valto 20 mg	Valdecocixib	Non-essential	-	3.50	-
Wymox 500 mg	Amoxycillin	Essential	5.63	7.72	37.12
Clavam	Amoxycillin 500 mg + Clavulanic Acid 125 mg	Non-essential	-	34.50	-
Doxy-1 100 mg	*Doxycycline	Essential	3.11	3.96	27.33
Cifran 500 mg	*Ciprofloxacin	Essential	8.46	8.96	5.91
Aziok 500 mg	Azithromycin	Non-essential	44.00	25.80	-41.36
Taxim 250 mg	*Cefotaxime	Non-essential	25.95	27.69	6.70
Rantac 150 mg	*Ranitidine	Essential	1.00	0.53	-0.47
Omez 20 mg	Omeprazole	Non-essential	3.90	3.98	2.05
Metrogyl 400 mg	*Metronidazole	Essential	0.65	0.63	-3.07
Zentel	Albendazole	Essential	9.75	12.25	25.64
Inderal 40 mg	Propranolol	Essential	1.24	1.80	45.16
Nicardia 10 mg	Nifedipine	Essential	0.74	0.89	20.27
Amtas 5 mg	Amlodipine	Essential	-	2.05	-
Losacar 50 mg	Losartan	Non-essential	-	4.40	-

*Drug is included in the First Schedule of DPCO 1995, **Indicates whether the drug is included in the National Essential Drugs List-1996, ***Unit price of the product as recorded in CIMS-Apr 2004, #Unit price of the product as recorded in the CIMS- Sept-Dec 1996, ##The price escalation of a product between Sept-Dec 1996 and Apr 2004 expressed in percent

REFERENCES

- Correa, C.M., In; Health Economics- The Uruguay Round and Drugs, World Health Organization, 1997, 26.
- Hakokongas, L., Eds., In; Drug Patents under the spotlight – Sharing Practical Knowledge about Pharmaceutical Patents, Medicines Sans Frontiers, Geneva, Switzerland, 2003, 2.
- Globalization and Access to Drugs – Perspectives on the WTO/TRIPS Agreement, Health Economics and Drugs, DAP Series No. 7, Revised, 2nd Edn., WHO/DAP/98.9 (revised), 1999, 82.
- Chaudhury, R.R., and Gurbani, N.K., In; Enhancing Access to Quality Medicines for the Underserved, Anamaya Publishers, New Delhi, 2004, 102.
- Action Programme on Essential Drugs-Theme paper for Discussion-Collaboration and coordination in National Drug Policy Development, WHO, Geneva, DAP/MCA (7)/95.7, 1995, 16.
- Anonymous, **Essential Drugs Monitor**, 1994, 18, 10.
- Quick, J.D., Rankin, J.R., Laing, R.O., O'Connor, R.W., Hogerzeil, H.V., Dukes, M.N.G., and Garnett, A., Eds., In: Managing Drug Supply, 2nd Edn., Kumarian Press, Inc., Connecticut, 1997, 5.
- Mandal, S.C., **Indian J. Hosp. Pharm.**, 1998, XXVIII (1), 7.
- Ray, K. and Sarkar, P.K., **Essential Drugs Monitor**, 1998, 25 and 26, 28.
- Hazra, A., Tripathi, S.K. and Alam, M.S., **Natl. Med. J. India**, 2000, 13, 177.
- Burdon, P., In: Comparative analysis of national drug policies, Action Programme on Essential Drugs, WHO/DAP/97.6, 1997, 85.
- Bimo, C.A., Das, A., Diwan, V., Kafle, K.K., Mabadeje, B., Massele, A., Laing, R.O., Ofro-Adjei, D., Ross-Degnan, D., Santoso, B., Anker, M., Brudon-Jakobowicz, P., Fresle, D.A. and Hogerzeil, H.V., In; How to Investigate Drug use in Health Facilities, Department of Essential Drugs and Medicines Policy, WHO/DAP/93.1, 1999, 25.
- McFadyen, J.E., Eds., In; International Drug Price Indicator Guide, Management Sciences for Health, Cambridge, 2004, E-22.
- Venkatraman, K., Eds., In; Current Index of Medical Specialties, Atmedica (India) Private Limited, Bangalore, India, 2004.
- National Essential Drugs List, Govt. of India, Ministry of Health & Family Welfare, 1996, Reprinted by Community Development Medicinal Unit, Kolkata, 1997, 7.
- Krishnan, P.V.V., Eds., In; Current Index of Medical Specialties, BIO-Gard Private Limited, Bangalore, India, Sept-Dec, 1996.
- Deshpande, S.W. and Gandhi, N., In; Drugs & Cosmetics Act, 1940 and Drugs (Price Control) Order, 1995, Susmit Publishers, Mumbai, 1995, 591.

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