

**DRUG PRESCRIBING PATTERN AND COST ANALYSIS ON ANTIDIABETICS
(GENERIC VS. BRANDED) IN A COMMUNITY CARE SETTING**

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ABSTRACT

Diabetes is the most common disorder in all over world which causes co morbid complications and it leads to increase in mortality rate. Community pharmacy is very much close to the public and they easily mingle with patients when compare to other health care professionals. This article emphasis that the cost analysis plays an important role in disease management for chronic patients, Owing to their low price and comparable quality, generic medicines are used to enhance drug prescription efficiency and thus decrease expenditure. To study the drug selling pattern among antidiabetics involved in community care setting. To study the cost analysis & most selling rate of antidiabetics (generic vs. branded) in a community sector. Among that we found for antidiabetics Metformin (91%) is selling more than any other antidiabetics followed by Glimepiride(88%), Glibenclamide (85%), Voglibose (80%), sitagliptin (75) were said to be more sales on branded drugs when compared with generic drugs. The cost of branded medicines may be so differ from generics. For combination drugs also branded plays an important role in sales and usage than generics. The intervention of community pharmacists serves as an important role in disease management and care the society. Based on this study we conclude peoples are not getting awareness about generic medicines, even they are not willing to change their brands. Generic drugs are almost similar as branded medicines by cost, efficacy, benefits etc. And finally we suggest Community pharmacists should promote the generic medicines and create the awareness about generic drugs to the society.

KEYWORDS: Cost, Generic, Branded, Antidiabetics, Community pharmacists.

INTRODUCTION

In recent years, pharmaceutical expenditure among worldwide has rapidly increased and attracted significant attention. The WHO published a recent report showing that pharmaceutical expenditure has grown by more than 50% in real terms during the last decade. This increases driven by a number of factors including strict clinical targets, raising patient expectations, aging populations, and the continued launch of new premium-priced drugs. Owing to their low price and comparable quality, generic medicines are used to enhance drug prescription efficiency and thus decrease expenditure. In general, generic medicines tend to be 20% to 80% cheaper than branded medicines, especially now with a greater number imported from India (where lower production and labour costs apply) into other countries. Increasing pressure on maximizing the output from limited resources has forced health-care policy makers to use health economic evaluation tools to evaluate the efficacy and efficiency of pharmacy services. Increasingly to evaluate these services, pharmacoeconomic evaluation is being used in Community care setting. The pharmacists who worked in community pharmacy are called

community pharmacists. The community pharmacists are the health professionals most helpful to the public. Community pharmacists have an important role in diabetes, cardiovascular and other medicines their involvement shows beneficial effects in patient education and disease management. Community pharmacy is a place where the most of the peoples are coming to buy medicines. Pharmacological treatment is very much successful and cost effective if the medicines are rationally prescribed and appropriately used. Community pharmacists should explain about the disease symptoms, diagnostic methods and check outcomes of the results involved in disease management. The variety of health professionals includes doctors, pharmacists, nurses and dieticians attain more benefits from the arrival of community pharmacists to diabetic and hypertensive patients. The community pharmacists are able to clear the doubts and queries about their condition made by the patients. The community pharmacists help in educating about the importance of monitoring blood glucose, blood pressure and cholesterol level checking periodically to the patients while coming to the community pharmacies.

Generic medicines

Generic drugs marketed without brand names are generally less expensive than brand-name drugs, even though they are chemically identical to brand-name drugs and meet the same standards of the FDA (US Food and Drug Administration) for safety, purity and effectiveness. The FDA requires that all drugs be safe and effective. Since generics use the same active ingredients and are shown to work the same way in the body, they have the same risks and benefits as their brand-name counterparts. Most people will never notice a difference. "According to the FDA, generic drugs do not need to contain the same inactive ingredients as the brand name product. Inactive ingredients are those that have nothing to do with the therapeutic action of the drug; binding materials, dyes, preservatives, and flavoring agents

Branded medicines

According to the FDA, generic medications can cost, on average, 80 to 85 percent less than the brand-name equivalents. Brand-name drugs are typically more expensive because of the higher initial costs to develop, market, and sell a brand-new drug. A branded generic is the brand name given to a drug that is bioequivalent to the original. Brand-name drugs are typically more expensive because of the higher initial costs to develop, market, and sell a brand-new drug.

Pharmacoeconomics

Pharmacoeconomics is a new word; but economic interest in drug and other treatments of health problems is much older. Decisions about what treatments should be available within a health-care system have always been influenced by the resources available to pay for them. Pharmacoeconomics can be defined as the branch of economics that uses cost-benefit, cost-effectiveness, cost-minimization, cost-of-illness and cost-utility analyses to compare pharmaceutical products and treatment strategies. Pharmacoeconomics is a part of the tool bag for pharmacist can be used to improve the efficiency of his profession.

Price

Drug prices are determined by three administration authorities according to elementary indications and cost information. For state-priced products, the National Development and Reform Commission (NDRC) sets maximum retail prices (price cap); for province- or Municipality-priced products, the price management department determines the retail prices; and for other products the ex-factory and retail prices are determined by the manufacturers themselves.

Diabetes

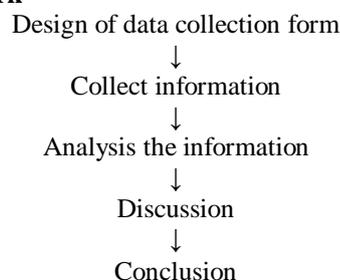
In modern lifestyle, western diet culture, laziness due to the advancement of technology, the pervasiveness of obesity due to over consumption of junk foods leads to the prevalence of diabetes in the 21st century. Due to these factors, the prevalence rate among the worldwide

should be (27%) increasing in developing nations by the year 2025. Diabetes is the prevailing health problem worldwide affecting middle-aged people to older people and it is a metabolic disorder resulting from the beta cell destruction due to an autoimmune process usually leading to insulin deficiency or insulin resistance. Type1 and Type2 diabetes are leading major health problem in developing nations and developed nations. People with Type 1 diabetes need insulin and affects only (5 to 10%) among the worldwide. In Type 1 the pancreas stops the insulin production which leads to insulin deficiency. In type 2 about (90-95%) do not need insulin and in a few cases adults with diabetes (14%) use insulin, 57% use oral medications. Meanwhile 16% control diabetes by physical activities and dietary management. Most of the people with diabetes are affected in rural areas, and hence drug prescribing pattern study may help to improve the non-compliance, not only cost reduction but also reduces other complications. Another major health problem next to diabetes was hypertension. Globally 7.6% million deaths accounts for hypertension and its complications. Prevalence among the hypertension was very high in India due to various factors such as stress due to heavy work load, excessive use of canned foods and because of some life style habits like smoking, excessive alcohol intake, lack in physical activity and obesity. Based on WHO report about 45-50% death is mainly due to cardiovascular complications such as stroke, coronary artery disease associated with chronic kidney disease and diabetes. The prevalence of diabetes, in the developed countries is well established^[11] but less so in developing ones. The World Health Organization stated in 1998 that a 122% rise in the number of adults with diabetes is projected by 2005, to reach 300 million adults worldwide 76% of this in developing countries.

OBJECTIVES

- To study the drug prescribing pattern among antidiabetics involved in community care setting.
- To study the cost analysis among antidiabetics in community care setting.
- To find out most selling rate of antidiabetics (generic vs. branded) among community sector.

Plan of Work



METHODOLOGY

Study site

The study was carried out in various community pharmacies in Chidambaram, Tamilnadu.

Study design

This is a randomized prospective study which was conducted over a period of six months.

Sample

The sample was collected from the various Community pharmacies.

Study criteria**Inclusion criteria**

- Pharmacists in Community pharmacies.
- Chain pharmacies.

- Specialized clinics like diabetic clinic.

Exclusion criteria

- Hospital attached pharmacies.
- Pharmacists who are not willing to cooperate

RESULTS**Table 1: (Single drug therapy).**

S.no	Drug	Dose	Drug usage %		Drug cost(Rs)		Cost difference (Rupees)
			Brand	Generic	Brand	Generic	
1.	Metformin	500mg	88%	12%	39.00	22.00	17.00
2.	Glimepiride	1mg	91%	9%	33.44	16.54	16.90
		2mg	86%	14%	56.42	28.02	28.40
3.	Glibenclamide	2.5mg	88%	12%	29.00	23.30	5.70
		5mg	84%	16%	49.90	37.30	12.60
4.	Gliclazide	40mg	60%	-	21.00	15.00	6.00
		80mg	40%	-	32.90	29.50	3.40
5.	Nateglinide	60mg	-	-	45.00	31.00	14.00
		120mg	-	-	80.00	50.00	30.00
6.	Repaglinide	1mg	10%	-	148.00	138.00	10.00
		2mg	-	-	249.50	165.35	84.15
7.	Voglibose	0.3mg	90%	10%	80.50	39.40	41.10
		0.2mg	90%	10%	59.10	29.20	29.90
8.	Sitagliptin	25mg	85%	15%	260.00	128.00	132.00
		50mg	85%	15%	270.00	168.00	102.00
		100mg	85%	15%	300.00	225.00	75.00
9.	Vildagliptin	-	-	-	-	-	
10.	Saxagliptin	-	-	-	-	-	
13.	Pioglitazone	30mg	76%	24%	44.00	32.00	12.00
		15mg	71%	26%	23.00	19.15	3.85

Table 2: (Multiple Drug Combinations).

S.no	Drug	Dose	Drug usage %		Drug cost (Rs.)		Cost difference (Rupees)
			Brand	Generic	Brand	Generic	
1.	Metformin+ Glimepiride	1mg/500mg	78%	22%	36.20	33.50	2.70
		2mg/500mg	52%	48%	57.25	41.50	15.75
2.	Metformin+ Glibenclamide	2.5mg/500mg	88%	12%	13.20	11.15	2.05
		5mg/500mg	83%	17%	17.25	14.85	2.40
3.	Metformin+ Gliclazide	40mg/500mg	56%	44%	27.00	20.00	7.00
		80mg/500mg	64%	-	40.60	33.00	7.60
5.	Metformin+ Sitagliptin	50mg/500mg	78%	22%	348.00	149.00	199.00
6.	Metformin+ Vildagliptin	50mg/500mg	81%	12%	270.00	198.00	72.00
7.	Metformin+ Pioglitazone	15mg/500mg	84%	16%	65.00	34.00	31.00

RESULTS

Based on survey of 60 community pharmacies about single drug and multiple drug combinations on antidiabetics we found three factors. They are as follows
1. To measure the drug usage (%) on antidiabetics, 2. To

determine the cost analysis on antidiabetics between generic and branded drugs, 3. To find out the most selling antidiabetics (branded or generic). we conducted this survey for past three months. Among that we found Metformin (88%), Glimepiride (91%), Glibenclamide

(85%), Voglibose (90%), sitagliptin (85%), were said to be more sales on branded drugs when compared with generic drugs. The cost of branded medicines may be for metformin (39.00 rs/ 10 tabs), glibenclamide 2.5mg (29.00/ 10 tab) and 5mg (49.90/10tabs) glimepiride 1mg (33.44/10tabs) and 2mg(56.42/10tabs), sitagliptin 25mg (260/7tabs) 50mg (270/7tabs) and 100mg (300/7tabs), pioglitazone 30mg (44/10tabs) and 15mg (23/10tabs). And for multiple drug combinations the most usage drug combinations were said to be metformin + glibenclamide (83%) followed by metformin +glimepiride (78%). For combined drug also branded plays an important role in sales and usage than generics.

DISCUSSION

Generic medicines are cheaper than the branded, but many patients are not getting awareness about generic medicines. Although people are still concern about why these medicines are less expensive, wondering if the quality and effectiveness are compromised when using generics. These medicines are less expensive due to the fact that manufacturers have no expenses in the development, research and marketing. The development of brand-name drugs was found to be significantly more expensive relative to generic drug development. Arrival of newly drugs and new brands made generic products low in health care sector. Most of the branded companies promote their medicines to the physicians by the way of implementing marketing strategies and by giving compliments, trips, offers, discounts etc. In this study generic drug existence were found to be very low in most of the community pharmacies. It leads to the major cause for promoting branded medicines. But since most of the community pharmacies selling generic medicines because of low price, good margin, easy affordability, convenient for customers to buy. In our study most of the community pharmacies depends upon the clinics and private hospitals. Those physicians' prescribed almost branded medicines but recently few of them were changed to generic medicines and our study conclude diabetes patients mostly received branded medicines in community care sector. This study compared outcomes of Brand-name and generic AEDs in a way that simultaneously considered both the effect of switching (i.e., patients were allowed to switch among Brand-name and generic versions from multiple different manufacturers) and the effect of non-adherence as manifested in typical care Settings.

CONCLUSION

Diabetic drugs are mostly given as free medicines in Govt. hospitals but most of the diabetic patients prefer private hospitals and diabetic clinics because of their convenience and satisfaction. So that diabetic medicines are getting more sales than any other medicines in community care sector. The diabetic patients should take medicines regularly until the blood glucose level become normal. Based on this study we conclude peoples are not getting awareness about generic medicines, even they are not willing to change their brands. Generic drugs are

almost similar as branded medicines by cost, efficacy, benefits etc. And finally we suggest Community pharmacists should promote the generic medicines and create the awareness about generic drugs to the society.

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