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Increasing expenditure on diabetic drugs can be reduced by using generic drugs

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Abstract

Background: As the number of people with diabetes grows worldwide, the disease takes an ever-increasing proportion of national health care budgets. Without primary prevention. The diabetes epidemic will continue to grow. Even worse, diabetes is projected to become one of the world's main disablers and killers within the next twenty-five years. Immediate action is needed to stem the tide of diabetes and to introduce cost-effective treatment strategies to reverse this trend.

Objective: This study aimed to assess the direct cost incurred by diabetic subjects who were in different income groups in India. as well as to examine the reducing of costs by using generic drugs instead of branded drugs.

Methods: A prospective study on "diabetic drugs "was carried out for a period of 6 months. This study was undertaken to know the variation between Diabetic Branded drugs and Diabetic generic drugs including other complications of Type 2 diabetes. It was done in the diabetology ward. All the patient records of patients prescribed Diabetic drugs during the study period were noted down using a standard data entry format. Data regarding the duration of the study, the reason for admission, various clinical conditions for which drugs were prescribed, drugs prescribed, Cost of prescribed drugs. Generic ingredients of the drugs, and its generic drugs, etc., were analyzed.

Results: There is a significant cost savings between branded and generic drugs for the same formulation for diabetics with other complications. The Percentage cost savings ranges from 40% to 76% on the generic drugs in comparison with the branded drugs.

Conclusion: The economic burden on diabetic drugs can be reduced in middle class families by using generic drugs and it also help poor families to purchase the diabetes drugs in low cost.

Keywords: Metformin, insulin, glimepiride, voglibose, vildagliptin

Introduction

The term diabetes is the shortened version of the full name diabetes mellitus. Diabetes mellitus is derived from: the Greek word diabetes meaning siphon - to pass through. The Latin word mellitus meaning honeyed or sweet It was known in the 17th century as the "pissing evil". This is because in diabetes excess sugar is found in blood as well as the urine. Diabetes is a disorder of metabolism-the way the body uses digested food for growth and energy. Most of the food people eat is broken down into glucose, the form of sugar in the blood. Glucose is the main source of fuel for the body.

After digestion. glucose passes into the bloodstream. where it is used by cells for growth and energy. For glucose to get into cells, insulin must be present. Insulin is a hormone produced by the pancreas, a large gland behind the stomach.

When people eat. the pancreas automatically produces the right amount of insulin to move glucose from blood into the cells. In people with diabetes, however, the pancreas either produces little or no insulin, or the cells do not respond appropriately to the insulin that is produced. Glucose builds up in the blood, overflows into the urine, and passes out of the body in the urine.

Thus, the body loses its main source of fuel even though the blood contains large amounts of glucose. Diabetes is a condition where the body fails to utilize the ingested glucose properly. This could be due to lack of the hormone insulin or the insulin that is available is not working effectively.

Diabetes is the fastest growing long term disease that affects millions of people worldwide. India continues to be the "diabetes capital" of the world, and by 2030.

Nearly 9 per cent of the country's population is likely to be affected from the disease, warns the World Diabetes Atlas launched by the IDF at the World Diabetes Congress. It is more than 61 million people in India have diabetes at present - 12 per cent higher than last year's figure of 50.8 million India is followed by China and the United States, reveal new figures released by the International Diabetes Federation (IDF).

Materials and Methods

The present study was conducted at Dr. Netaji's Sugar care Clinic, Vanasthalipuram, Hyderabad. The study was conducted by considering from Adolescence to Geriatrics. The Reason for the selection of these patient groups is that the prevalence of type-2 diabetic prescription is more. The health care professionals and retail pharmacists of the hospital provided their huge contribution while prescribing antidiabetic agents to the patients by means of explaining the cost of various Branded and generic anti-diabetics along with their merits and demerits. It helps a lot while selecting

the appropriate antidiabetic agents to ensure rational therapy.

A prospective study on "diabetic drugs "was carried out for a period of 6 months. This study was undertaken to know the variation between Diabetic Branded drugs and Diabetic generic drugs including other complications of Type 2 diabetes. It was done in the diabetology ward. This is the first study conducted by the department of pharmacy practice. All the patient records of patients prescribed Diabetic drugs during the study period were noted down using a standard data entry format. Data regarding the duration of the study, the reason for admission, various clinical conditions for which drugs were prescribed, drugs prescribed, Cost of prescribed drugs. Generic ingredients of the drugs, and its generic drugs, etc., were analyzed. During the study period, a total of 1800 diabetic subjects are taken from a private hospital. A brief uniform coded questionnaire on direct cost was used.

Results and Discussion

Table 1: Distribution based on gender

Gender	Number of Patients	Percentage
Male	864	48%
Female	936	52%
Total	1800	100%

Out of 1800 diabetic subjects, 864(48%) were male and 930 (52%) were female patients.

Table 2: Distribution based on age group of diabetic patients on diabetic drugs

Age group (In years)	Number of Patients	Percentage
0-20	12	0.66%
21 - 30	9	0.5%
31 - 40	172	9.55%
41 - 50	559	31.05%
51 - 60	448	24.88%
61 - 70	463	25.72%
71 - 80	90	5%
81 - 90	36	2%
91 - 100	11	0.61%

12(0.6%)of the study patients all between the age group of years 0- 20 years. 9 (0.5%) patients between the age group of years 20-30years, 172(9.5%) patients between the age group of years 30-40 Years. 559 (31.05%) patients between the age group of years 40-50 years. 448 (24.9%) patients between the age group of years 50-60 years. 463(25.73%)

patients between age group of years 60-70years. 90(5%) patients between the age group of years 70-80 Years, 36 (2%) patients between the age group of years 80-90 years and the patients between the age group of 90-100 years is 11(0.61%).

Table 3: Percentage of patients with other complications

Complication with diabetes	Percentage
Peripheral neuropathy	5%
Hypothyroidism	2%
Diabetic Retinopathy	1%
Lower limb Cellulitis	1%
Hypertension	45%

Hypertension was prevalent in around 45% of the cases. Peripheral neuropathy was seen in 5% and hypothyroidism in 2%. Diabetic retinopathy and lower limb cellulitis was seen in 1% cases each.

Table 4: List of antidiabetics most commonly prescribed along with their brand name and cost in market

Drug Name	Brand Name	Cost of the brand drug (10 tabs/ 1 injection)
Glimepride (1mg)+metformin Hcl (500mg)	Amaryl 1	120
Metformin 50mg SR	Glyciphage 500 SR	33.40
Glimpride 2mg	Gemer 2 mg	121
Gliclazide (80mg)+Metformin Hcl 500 mg	Glizid M	153
Glimperide (2mg) + Metformin Hcl 500 mg	Amaryl 2	191
Vildagliptin 50 mg + Metformin Hcl 500mg	Zomelius Met	135
Glimepiride (2mg) + Metformin (500mg) + Voglibose (0.2mg)	Glycomet trio 2	186.50
Voglibose 0.3 mg	Volibo 0.3 mg	137
Glipizide 5mg	Glez 5 mg	7.10
Voglibose 0.2 mg	PPG 0.2	179.38
Glimepiride (1mg) + Metformin (500mg) + Pioglitazone (15mg)	Glyciphage-PG 1	148.35
Glimepiride (2mg) + Metformin (1000mg)	Amaryl M 2 forte	251.19
Metformin (500mg) + Voglibose (0.2mg)	Vogli M 0.2	116
Insulin Glargine (100IU)	Inj. Lantus	722.4
Glimepiride (1mg) + Metformin (500mg) + Pioglitazone (15mg)	Gemper P1	120

Table 5: List of generic alternatives to branded drugs and their cost in market

Generic Drug Name	Cost of the drug (10 tabs/ 1 injection)
Isryl-M 1	36
Glumet-XR	20
Glimicon 2	49.40
Glymin	37
Isryl-M 2	54
Vilgript-M	68
Vogs-GM	88.50
Voglitus 0.3mg	16.66
Glide 5mg	7.25
Vogs 0.2	19
Triopil	90
Glimi DM forte	67
Vozuca	57.5
Inj. Basalogrefil	555
Glimestar PM-1	89.90

Table 6: Cost variation between branded and generic drugs

Drug Name and dose	Cost of the brand drug	Cost of the brand drug	Cost of the generic drug	% savings
Metformin 50mg SR	Glyciphage 500 SR	33.40	20	40%
Glimpride 2mg	Gemer 2 mg	121	49.40	59.50%
Gliclazide (80mg)+Metformin Hcl 500 mg	Glizid M	153	37	75.80%
Glimperide (1mg)/ (2mg) + Metformin Hcl 500 mg	Amaryl 2	120 / 191	36/54	70%/71.70%
Vildagliptin 50 mg + Metformin Hcl 500mg	Zomelis Met	135	68	49.60%

There is a significant cost savings between branded and generic drugs for the same formulation for diabetics with other complications. The Percentage cost savings ranges from 40% to 76% on the generic drugs in comparison with the branded drugs.

Discussion

In India, diabetes is spreading rapidly. According to the International Federation of Diabetes' Diabetes Atlas 2020, 72.9 million people in the country have diabetes. By 2045, this number is expected to rise to 134.3 million. Furthermore, 42.2 million Indians have undiagnosed diabetes, accounting for 57.9% of the total diabetes population. Because of ongoing large-scale urbanization and rising life expectancy, the number of diabetic patients is expected to rise in the near future.

It goes without saying that the impact of diabetes on total health-care spending will likely increase in the future. This situation will have a significant impact on the long-term viability of health-care financing. To make matters worse, in India, 80% of healthcare spending is paid for out of pocket (OOP). A family's financial situation can be exacerbated by a major health event in the family. Medicines account for a large portion of the direct cost of diabetes due to its chronic nature and the presence of comorbidities. Because India's health-care financing and delivery are largely in the hands of the private sector, the government has little control over the cost of medicine prescribed.

Prescription of generic drugs is one strategy for lowering medicine costs in chronic care, such as diabetes. Generic drugs are brand-name drugs that are bioequivalent to the original drug in terms of dosage, intended use, effects, side effects, route of administration, risks, safety, and strength. The pharmacological effects of branded drugs are identical to those of generic drugs, but they are sold at a significantly higher price than generic drugs.

The biggest barrier to generic drug adoption is patient and physician skepticism about their efficacy and quality. Furthermore, prescribing generic drugs reduces the profitability of both healthcare providers and pharmaceutical companies. Private hospitals dominate Indian healthcare, accounting for more than 75% of all care provided. The use of generics as a percentage of brand-name drugs may be beneficial to all parties. Policymakers must devise a strategy to incentivize the prescription of generic drugs.

Comorbidity increases as diabetes progresses. As a result of this situation, more advanced drugs are included in the prescription. In the majority of cases, the drugs prescribed at this stage are brand new to the market, and their generic equivalent is not readily available or popular. Furthermore, medical intervention has increased the average life expectancy of diabetics. This means that the cost of diabetes medications has risen significantly and will continue to rise in the future. In the case of chronic diseases like diabetes, the increased use of generic medicines in prescriptions can significantly reduce the cost of care.

The government must act quickly to address the rising cost of diabetes medications by encouraging the use of generic drugs in India.

Conclusion

Diabetic subjects spend a large percentage of income on diabetes management. people with diabetes II those treated with insulin show 30% more cost than oral drugs.(I)Drug usage cost is increased along with other complications like cardiac problems. Diabetic retinopathy, Peripheral neuropathy, Hypothyroidism etc., The diabetic individuals along with complications should take medication regularly. It becomes burden to low income families, which can be managed by using generic drugs. The economic burden on diabetic drugs can be reduced in

middle class families by using generic drugs and it also help poor families to purchase the diabetes drug's in low cost.

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