Research Article

A STUDY ON PRESCRIBING PRACTICE AND GENERAL TRENDS OF DIABETES AMONG PATIENTS IN A TERTIARY CARE TEACHING HOSPITAL

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ABSTRACT

Diabetes mellitus is a clinical syndrome considered, one of the emerging threats of the 21st century. The aetiology of diabetes are multifactorial which includes the genetic factors that are coupled with environmental factors such as obesity associated with rising living standards, urban migration and lifestyle changes. Various classes of anti diabetic drugs are currently being used in the treatment, which acts by different mechanisms to reduce the blood glucose level and maintain optimal glycemic control. The objective of our study was to analyse the prescription pattern and incidence of Type 2 diabetes mellitus. A prospective, observational study was carried out in 120 diabetes patients attending the inpatient department of a tertiary care teaching hospital. The samples were collected based on inclusion and exclusion criteria. Socio-demographics and clinical data were noted in a pre-designed Performa. According to our study majority of diabetes patients belong to 60-69 age groups. Patients affected were non vegetarians, physically inactive and had a family history of one parent diabetic. Based on prescription pattern of anti diabetic medications, (47%) patients were prescribed with insulin followed by (23%) Biguanides, (19%) Sulfonyl ureas, (9%) Dipeptidyl Peptidase 4 Inhibitors and (2%) Alpha Glucosidase Inhibitors. Oral anti- diabetic drugs were prescribed in the following order: Metformin > Glimepiride > Sitagliptin > Glibenclamide > Vildagliptin > Glucilazide > Glipizide > Voglibose. Based on the number of drugs prescribed for diabetic treatment, monotherapy (57%) was more common followed by dual therapy (33%) and three drug (10%) therapy.

Keywords: Diabetes mellitus, Morbidity, Mortality, Anti-diabetic medications

INTRODUCTION

Diabetes mellitus (DM) is defined as a heterogeneous metabolic disorder characterised by chronic hyperglycemia with disturbances of carbohydrate, fat and protein metabolism¹. The high blood sugar level in the body may produce the symptoms like polyuria, polydipsia and polyphagia². Type 2 diabetes mellitus is the commonest form of diabetes. The level of morbidity and mortality due to diabetes and its potential complications poses a significant healthcare burdens to both family and society. The prevalence of diabetes is rapidly rising all over the globe, due to the population over growth, aging, urbanisation, increased of obesity and physical inactivity³. In India, the steady migration of people from rural to urban areas, the economic boom, and corresponding change in life style are all affect the level of diabetes. Diabetes is a lifelong disorder, which is markedly affected by day to day variations in the diet, exercise, infections and stress⁴. The most disturbing trend is the shift in age of onset of diabetes to a younger age in the recent years. Although improved glycemic control may decrease the risk of developing complications, diabetes remains a significant cause of social, psychological and financial burden to people worldwide^{5,6}. This leads to a long lasting adverse effects on a nation's health and economy, especially for developing countries⁷. Controlling the blood sugar level is essential to feel healthy and avoiding the long term complications of diabetes. Some people are able to control their blood sugar level with diet and exercise alone but other's need to use insulin or other medications in addition to life style changes⁸.

MATERIALS AND METHODS

The study was conducted in the department of Endocrinology, of a tertiary care teaching hospital. It was a prospective study on diabetic

patients attending the inpatient clinic of Endocrinology. A total of 120 diabetic patients were included using inclusion and exclusion criteria.

Inclusion criteria:

- In-patients diagnosed to have Type 2 Diabetes mellitus.
- Both the genders are included
- Type 2 DM patients of all age groups

Exclusion Criteria:

- Pregnant Ladies with diabetes mellitus
- Patient diagnosed with Type 1 DM

The filled patient profile form was analyzed for various parameters like age distribution and gender, area of residence, family history of diabetes, Number of drugs per prescription, categories of drugs used etc.

RESULTS

During the study around 120 patients diagnosed with Type 2 diabetes mellitus were studied. It is evident from the Figure 1, that majority of patients (43%) belongs to 60-69 years followed by age group 50-59 years (24%). Based on the gender distribution pattern of the disease, majority (65) were males and (35) females. Figure 2 shows the areas of residence of the diabetic patients, among them (67%) of patients were from urban area and the remaining (33%) from the rural area. Table 1 shows the Diet pattern of diabetes patients. Majority (71%) of patients were taking mixed diet and the remaining (29%) were pure vegetarians. Figure 3 shows the family history of the diabetes patients. In the study group (40%) of the patients had one parent diabetic, (15%) of patients had two parents

diabetic, (31%) of patients had a negative family history of diabetes and (14%) of patients belong to others. Table 2 represents that (18%) of patients were doing regular exercise and rest (82%) were sedentary. Figure 4 shows the prescription pattern of anti diabetic drug classes in the study sample. According to the study, insulin (39%) was the most prescribed anti diabetic class of drug followed by Biguanides, Dipeptidyl Peptidase 4 Inhibitors, Sulfonyl Ureas, Alpha Glycosidase Inhibitors .Figure 5 shows the prescription

pattern of various anti diabetic drugs in the study sample. According to the study, oral anti-diabetic drugs were prescribed in the following order: metformin > glimepiride > sitagliptin > glibenclamide > vildagliptin > gliclazide > glipizide > voglibose. Figure 4 represents the number of drugs prescribed for the diabetic treatment; monotherapy was more common followed by dual therapy and three drug therapy

Table 1: Diet pattern of patients in the study sample

Diet pattern	Number	%
Vegetarian Diet	35	29.16
Mixed Diet	85	70.83
Total	120	100

Table 2: Physical activity of the patients in the study

Physical activity	Number	%
Exercise	20	18
Sedentary	98	82

Figure 1: Age distribution of type 2 diabetic patients in the study

Figure 2: Area of Residence of type 2 diabetic patients in the study

Figure 3: Family history of type 2 diabetic patients in the study

Figure 4: Prescription pattern of anti diabetic drug classes in sample population

Figure 5: Prescription pattern of oral anti-diabetic drugs in sample population

Figure 6: Number of anti-diabetic drugs prescribed in the sample population

DISCUSSION

In this study, an attempt has been made to describe the risk factors and current prescribing pattern anti-diabetic drug therapy in diabetic patients in a tertiary care hospital in Kerala. A total of 120 patients who were treated with anti diabetic drugs were included in the study. Majority of sample population belongs to an age group of 60-69 years (43%). Males were more frequently affected than Females. More patients had an urban area of residence and were non

vegetarians (70.83%). Family history of one parent diabetic was noted in (39%) patients. Most of the patients (82.5%) were physically inactive. Based on the study; Insulin was the commonly prescribed class of drug accounting for 47.25% of the total prescribed anti diabetic products. In spite of Insulin being the commonest class, we observed that Metformin (biguanide) 44% was the common oral anti-diabetic drug prescribed followed by glimepiride (sulfonylurea) 23%. Based on the number of drugs

prescribed for the diabetic treatment, monotherapy was more common followed by dual therapy and three drug therapy.

CONCLUSION

The study of risk factors and prescribing pattern of anti diabetic medications help us to monitor, evaluate and suggest modifications in prescribing pattern so as to make the medical care rational and effective^{7,9}. Maximum percentage of diabetic patients was found to be in the old age group. The life style and family history contribute to diabetic risk factors. When the prescribing pattern was analyzed it was found that Insulin was the most preferred and prescribed anti-diabetic medication.

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