

STUDY OF PRESCRIPTION PATTERN AND INSULIN TREATMENT IN TYPE 2 DIABETIC PATIENTS

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ABSTRACT

This project work was an observational prospective study carried out in a tertiary care hospital for studying the prescription pattern and insulin treatment in diabetic patients. The study also includes the analysis of patient information and comorbid conditions. The objectives were to determine the patient information, prescription pattern and treatment of Type 2 DM using insulin.

First select 50 patients those who are willing to participate in the study according to the inclusion and exclusion criteria. The patient information such as MRD no., age, sex, duration of hospital stay, comorbid conditions, patient medication profile and details of insulin treatment are collected according to the disease condition. The data was tabulated and done the statistical procedure.

In a total of 50 patients, 36 (72%) patients are male and the remaining 14(28%) are females. From prescription pattern analysis it is found that 62.2% of the total medications are prescribed in brand name and 37.8% was prescribed in generic name. From the medication profile of the patients it was found that 43 patients (86%) are treated with insulin. It is observed from the study that insulin is commonly used in all the type 2 diabetes mellitus patients. Human mixtard and human atrapid are the two common classes of insulin which is used for the treatment.

- This article may helpful for finding out the importance of insulin in type 2 DM.
- This article also shows the relation between diabetes and other comorbid condition and how the risk increases along with the number of medication.

Keywords: Diabetes mellitus, Insulin, Prescription pattern, Comorbid conditions.

INTRODUCTION

Diabetes mellitus is defined as a heterogeneous metabolic disorder characterised by chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism¹. The high blood sugar level in the body may produce the symptoms of polyuria, polydipsia and polyphagia². It is estimated that approximately 1% of the population are suffered from diabetes¹. People from developed countries are mainly suffered from diabetes because of the obesity, fat deposition and reduced activities.

Diabetes is mainly classified in to three types. Type 1 diabetes (insulin dependent), type 2 diabetes (non-insulin dependent) and gestational diabetes³. In type 1 diabetes the islets beta cells are almost destroyed by an autoimmune process so that the insulin synthesis also reduces considerably and comparatively it is less common. Type 2 DM are mainly because of several reasons such as absolute insulin deficiency (reduced insulin secretion), relative insulin deficiency (deficiency insulin for increased metabolic needs), insulin resistance and hyperinsulinaemia⁴. Gestational diabetes is a type of diabetic condition in pregnant women. During pregnancy the diabetic level in the body of the mother may increases. This condition is known as gestational diabetes. After the delivery it will come to the normal level. This type of diabetes is extremely harmful to the mother and the baby³.

Different type of insulin preparations such as neutral insulin, biphasic insulin, isophane insulin etc. and antidiabetic drugs such as sulphonylureas, biguanides, and thiazolidinediones are the commonly used medication for the treatment of DM⁵. Insulin therapy is mainly used for treating the patients with type 1 diabetes and type 2 diabetic patients are treated with oral hypoglycaemic agents⁶. Oral hypoglycaemic agents used for the treatment of type 2 DM are divided in to seven different classes. Sulphonylureas, Short-acting insulin Secretagogues, Biguanides, alphaGlucosidase inhibitors, and Thiazolidinediones etc are belonging to the older class of oral hypoglycaemic agents and dipeptidylase-4 inhibitor (DPP-4), Exenatide are belonging to the newer class⁷. But some patients with type 2 DM not respond to the oral hypoglycaemic

agents and some patients shows the decreasing response during therapy⁵. These patients require the treatment with the insulin. This study deals with those variations in the treatment of patients with type 2 diabetes mellitus.

AIMS AND OBJECTIVES

The aim of the project was to carry out an observational prospective study of prescription pattern and insulin treatment in diabetic patients admitted in tertiary care hospital.

The objectives were to determine the patient information, prescription pattern and treatment of Type 2 DM.

METHODOLOGY

Research work was done in a tertiary care hospital in Cochin. This is an observational prospective study.

Inclusion criteria: Patients admitted with type 2 DM

Patients willing to participate in the study

Exclusion criteria: Patients with any other diseases

Patients not willing to participate in the study

First select 50 patients those who are willing to participate in the study according to the inclusion and exclusion criteria. The details such as patient information such as MRD no., age, sex, duration of hospital stay, comorbid conditions, patient medication profile and details of insulin treatment are collected according to the disease condition. The data was tabulated and done the statistical procedure.

RESULT

In total of 50 patients 36 (72%) patients are male and the remaining (28%) are females (Table 1) (Fig 1). After analysing the comorbidities it is found that almost 90% of the patients are suffered from other co-morbidities such as hypertension, asthma, COPD, renal failure, liver disorders etc.

Table 1: Frequency and % of gender distribution of study patients

Gender	Frequency	Percentage
Male	36	72
Female	14	28
Total	50	100.0

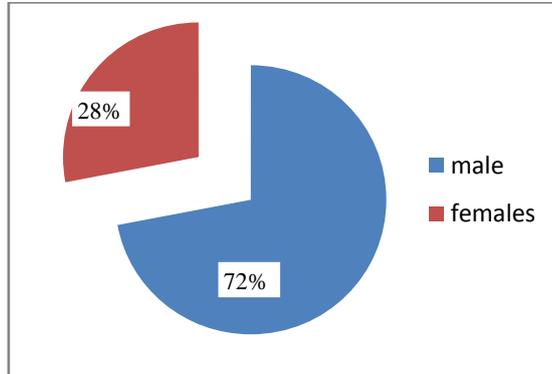


Fig. 1: Frequency and % of gender distribution of study patients

From prescription pattern analysis it is found that 62.2% of the total medications are prescribed in brand name and 37.8% was prescribed in generic name (Table 2) (Fig 2).

Table 2: Frequency and % of generic and brand name of antimicrobials

Drug prescribed	Frequency	Percentage
Generic	118	37.8
Brand	194	62.2
Total	312	100.0

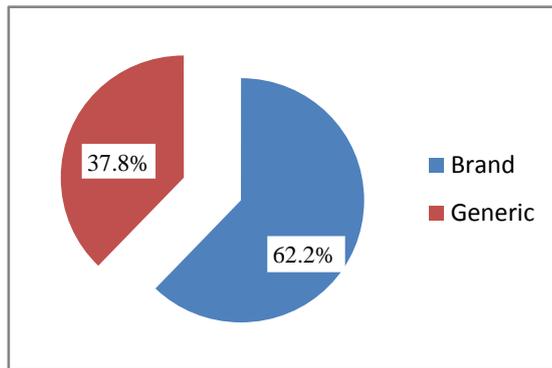


Fig. 2: Frequency and % of generic and brand name of antimicrobials

From the medication profile of the patients it was found that 43 patients (86%) are treated with insulin (Table 3) (Fig 3).

Table 3: Frequency and % of Insulin treatment in diabetic patients

Insulin Treatment	Frequency	Percentage
Treatment with Insulin	43	86
No Insulin Treatment	7	14
Total	50	100.0

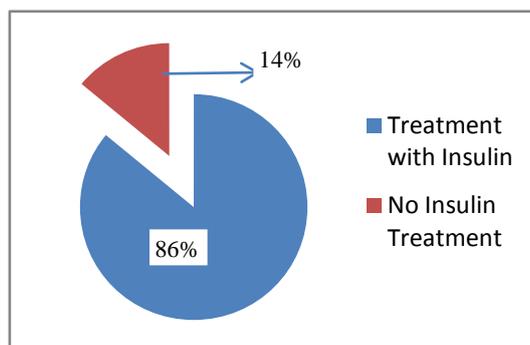


Fig. 3: Frequency and % of Insulin treatment in diabetic patients

DISCUSSION

In total of 50 patients were selected for the study who satisfies the inclusion and exclusion criteria in which 36 patients are male and the remaining are females. From this data it can be assume that male patients are more suffered by diabetes mellitus than that of females. One of the major reasons for this was obesity and fat deposition. From the study we found that both of these two factors are more in males when compare to females. After analysing the co-morbidities it is found that almost all the patients are suffered from other co-morbidities such as hypertension, asthma, COPD, renal failure, liver disorders etc. Due to this reason plenty of medication was prescribed to the patients so that the diabetic disease condition may become worse.

By the prescription pattern analysis it can be easily separate the medication which is prescribed in brand name from those which are prescribed in generic name. From this analysis it is found that 62.3% of the total medications are prescribed in brand name and 37.7% was prescribed in generic name. From the medication profile of the patients it was found that 43 patients are treated with insulin. Many other antidiabetic drugs such as metformin, glibenclamide, glipizide etc. are given to the type 2 diabetic patients. But it is observed from the study that insulin is commonly used in all the type 2 diabetes mellitus patients. It was also found that human mixtard and human atrapid are the two common classes of insulin which is used for the treatment.

CONCLUSION

It should be concluded that insulin is most commonly used by the physician for the treatment of type 2 DM. Other drugs are not as

much as effective when compare to the insulin treatment. Sudden action of insulin in blood sugar level is also another one reason for the preference of insulin diabetes treatment. It can be also concluded that human mixtard and human atrapid are generally used for the treatment of diabetes mellitus.

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