PROSPECTIVE OBSERVATIONAL STUDY ON MEDICATIONADHERENCE AMONG PATIENT WITH DIABETES MELLITUS

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ABSTRACT

To evaluate medication adherence to therapy and factor associated with adherence, partial adherence, non - adherence in a patient with type 2 and gestational diabetes mellitus. Enrolling the patients with Type 2 Diabetes mellitus in the study after obtaining informed consent form. Adminnistration of questionnaires and data collections. Analyse the data and questionnaire using Microsoft excel, mean and SD. The collected data were analysed using Microsoft excel. Mean and SD were calculated for demographic characters. The medication adherence was found using the scale and chi square test. In conclusion it is evident from our study that 14% of the population was adherent and 55% of the population was non-adherent, so overall medication adherence was low in type 2 diabetic patients. The study shows that to improve medication adherence, better counseling and health education of patients are required. This study was taken in rural areas so most of the patients were female candidates and they also unemployed. So the greater efforts are needed to facilitate diabetes self-management behaviors to improve patient outcomes.

Keywords: Medication Adherence, Diabetes, Patient outcomes

INTRODUCTION

Diabetes mellitus is a chronic disorder of carbohydrates, fats and protein metabolism. A defective or deficient insulin secretary response, which translates into impaired carbohydrates (glucose) use, is a characteristic feature of diabetes mellitus, as is the resulting hyperglycemias Diabetes mellitus (DM) is commonly referred to as a “sugar” and it is the most common endocrine disorder and usually occurs when there is deficiency or absence of insulin or rarely, impairment of insulin activity (insulin resistance) [(1)]. The International Diabetes Federation (IDF) estimates the total number of diabetic subjects to be around 40.9 million in India

and this is further set to rise to 69.9 million by the year 2025 [2]. Insulin and glucagon hormones both are secreted by the pancreas. Insulin is secreted by the beta (ß) cells and glucagon is secreted by the alpha (α) cells both are located in the islets of Langerhan's. Insulin decreases the blood glucose level by the glycogenesis and transport glucose into the muscles, liver and adipose tissue [3,4]. Neural tissue and erythrocytes do not required insulin for glucose utilization whereas alpha (α) cells plays an important role in controlling blood glucose by producing the glucagon and it increases the blood glucose level by accelerating the glycogenolysis . In addition to increased risk of obesity, metabolic and cardiovascular disorders, and malignancy in future life of fetus after delivery [5,6]. Type II diabetes mellitus comprises 80% to 90% of all cases of diabetes mellitus. Geographical variation can contribute in the magnitude of the problems and to overall morbidity and mortality. Moreover, people with diabetes who undertake moderate amounts of physical activity are at inappreciably lower risk of death than inactive persons It is now well established that a specific genetic constitution is required for such an event to cause [7,8].The growing burden of diabetes and other noncommunicable diseases is one of the major health challenges to economic developments bedeviling WHO African Region states. In diabetes, there is an aberration either in the synthesis or secretion of insulin as seen in Type 1 diabetes mellitus (T1DM) and stenosis in the pancreatic duct, or the development of resistance to insulin or its subnormal production as in the case of Type 2 diabetes (T2DM) and certain secondary diabetes. The prevalence of diabetes for all age groups worldwide was estimated to be 2.8% in 2000 and 4.4 % in 2030.2 The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030, and is becoming a major public health problem. The World Health Organization (WHO)

has shown that lack of adherence to medication is widespread in chronic diseases (Including diabetes mellitus) and is a major cause of concern within the medical profession. Diabetes mellitus affects all aspects of the person's life.4 Management of diabetes requires a complex treatment regimen and lifestyle changes to improve adhere to treatment.5,6 Behavioral changes are the basis of treatment for chronic diseases, and failure to adhere to treatment is a common

problem in patients with type-2 diabetes.7 Similar to patients other with chronic conditions, patients with diabetes have poor adherence to treatment. Evidence abound that the most important predictor of reduction of morbidity and mortality due to diabetes complications is the level of glycemic control achieved. This has encouraged aggressive treatment of patients with the goal of achieving blood glucose level as close to normal as possible. Indeed, there has been a shift from monotherapy with OHAs to combination therapy with at least two agents often from different classes, with or without insulin; in an attempt to achieve better glycemic control, reduce incidences of acute/long term complications and improve patient survival .However, achievement of optimal glycemic control, which reduces the likelihood of diabetic complications and risk of death, is predicated on rational use of available anti-diabetic regimen, good adherence to prescribed treatments and successful self-management by patients [9,10].

MATERIALS AND METHODS

Approval of study procedure by the Institutional ethical committee. Enrolling the patients with Type 2 Diabetes mellitus in the study after obtaining informed consent form. Adminnistration of questionnaires and data collections. Analyse the data and questionnaire using Microsoft excel, mean and SD. The collected data were analysed using Microsoft excel. Mean and SD were calculated for demographic characters. The medication adherence was found using the scale and chi square test.

RESULTS

Table 1

Distribution of patients according to age group

Age	Total patients=76	Percentage
25-35	18	23 %
35-45	25	32 %
45-55	14	18 %
55-65	19	25 %

Table 2

Distribution of patients according to gender

gender	Total patient=76	Percentage
male	34	45 %
female	42	55 %

Table 3

Distribution of patients based on types of diabetes

Types of DM	Total patients	Percentage
Gestational	16	21 %
Type 2 DM	60	79 %

Table 4

Distribution based on medication adherence

Types	Total patient	percentage
Adherent	11	14 %
moderate adherent	23	30 %
nonadherent	42	55 %

Table 5

Distribution based on adherence to medication and age,Gender and Employment status

Medication & age group	Moderately Adherent	Non Adherent	total	percentage
25-35	13	3	16	21 %
35-45	4	17	21	28 %
45-55	2	10	12	16 %
55-65	15	12	27	36 %

Table 6

Distribution based on Employment Status

medication & Employed status	Adherent	Moderately Adherent	Non Adherent	Total	Percentage
Employed	2	19	31	52	68 %
Unemployed	9	4	11	24	32 %

Table 7

Distribution based on Gender

Medication & Gender	Moderately Adherent	Non Adherent	Total	Percentage
Male	12	22	34	45 %
Female	22	20	42	55 %

Table 8

Distribution based on medication adherence and types of Diabetes

Medication& Types of DM	Moderately Adherence	Non Adherent	Total	Percentage

Gestational DM	13	3	16	21 %
Type 2 DM	21	39	60	79 %

Discussion

The study showed that only 34 (45%) were moderate adherent with their medication regimens respectively. While 42 (55%) patients were non-adherents our study showed more number of male patients were non-compliant to their medication whereas study done by Mohammed Imran et al showed marginal difference between 72 (36%) male and 50 (25%) female patients with respects to their medication non-adherence. In our study most non-adherents were in age group of 35-45 years and in study of Mohammed Imran et al showed majority of non-adherents were in age group of 51 to 65 years. The results of our study showed that non-adherence was more among employed 68% patients compared to unemployed patients (32%).

CONCLUSION

In conclusion it is evident from our study that 14% of the population was adherent and 55% of the population was non-adherent, so overall medication adherence was low in type 2 diabetic patients. The study shows that to improve medication adherence, better counseling and health education of patients are required. This study was taken in rural areas so most of the patients were female candidates and they also unemployed. So the greater efforts are needed to facilitate diabetes self-management behaviors to improve patient outcomes.

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