ORIGINAL ARTICLE

Examine the Frequency of Diabetes Mellitus and Impaired Glucose Tolerance in Patients Visited Outpatients at Chandka Medical College Hospital, Larkana

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ABSTRACT

Aim: To determine the prevalence of diabetes mellitus and impaired glucose tolerance in patients whom were visited outpatients.
Study Design: Retrospective study.
Place and Duration of Study: Chandka Medical College Hospital, Larkana and DG Khan Medical College Dera Ghazi Khan from 1st January 2018 to 31st December 2018.
Methods: One thousand and eight hundred patients of both genders who fulfill the inclusion criteria were included in this study. Patient's ages were ranging from 18 to 80 years. Patient's detailed medical history including age, sex, residence, socio-economic status, education were recorded after taking informed consent from all the patients. Blood glucose concentration were collected and analyzed for the prevalence.
Results: There were 135 (7.5%) patients found to have type II diabetes mellitus. From 135 diabetes patients, 80 (59.26%) patients were males while rest 55 (40.74%) were females. Prevalence of impaired fasting glucose was 2.67% and impaired glucose tolerance was 3.48%. Overall prevalence of diabetes mellitus, IFG and IGT in males was high than females.
Conclusion: The prevalence of diabetes mellitus and impaired glucose tolerance in this area is high.
Keywords: Diabetes mellitus, Impaired Glucose Tolerance, Prevalence, Impaired Fasting glucose

INTRODUCTION

Type 2 diabetes mellitus is one of the most common chronic metabolic disorders characterized by hyperglycemia. It occurs due to defects in insulin secretion, insulin action or both and accounts for at least 90% of all cases of diabetes.[1] It is highly prevalent in the elderly and associated with various co-morbidities, such as obesity, hypertension, hyperlipidemia, and cardiovascular disease, which ultimately lead to a condition called metabolic syndrome.[2] The prevalence of type 2 diabetes is increasing at alarming rates both in the developing and the newly industrialized countries of the world. On average, two persons develop diabetes and one person dies from diabetes-related causes in the world every ten seconds.[3] The International Diabetes Federation (IDF) estimates the global prevalence of type 2 diabetes at 6.6% (285 million cases) in 2010 and expects to reach to 7.8 % (438 million cases) by 2030.[4] This rapid increase in the global prevalence is attributed to population growth, aging, urbanization and increasing prevalence of obesity and physical inactivity.[5] In addition to frank and symptomatic diabetes, there are two different prediabetes conditions which are known as impaired fasting glucose (IFG) and impaired glucose tolerance (IGT). These are overlapping and essentially asymptomatic conditions characterized by impaired glycemia and are important known risk factors for type 2 diabetes.[6,7] Currently, IGT affects 7.9% (344 million cases) of the global population, with most people between 40-59 years of age.[8-10]

This study was conducted to determine the frequency of type 2 diabetes, IFG and IGT among the patients visiting Chandka Medical College Hospital, Larkana for their medical checkup. It is hoped that this study will be useful in formulating national strategies for diabetes control and conducting nationwide prevalence survey in future.

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MATERIALS AND METHODS

This retrospective study was conducted at Chandka Medical College Hospital, Larkana and DG Khan Medical College Dera Ghazi Khan from 1st January 2018 to 31st December 2018. A total of 1800 patients of both genders with ages 18 to 80 years who visited medical outpatients for general diseases such as high fever, gastric problems, typhoid, hepatitis B outpatients and other not severe diseases in our hospital were included. Patient's detailed medical history including age, sex, residence, socio-economic status, education and family history of diabetes were recorded after taking informed consent from all the patients. Patients having already diabetes and patients with severe other diseases were excluded from the study. Blood glucose levels (fasting, random and postprandial) of study patients were collected from all the included patients and analyzed for the frequency of type 2 diabetes and impaired glycemia. Patients were diagnosed of type 2 diabetes

mellitus and impaired glycemia on the basis of clinical examination and WHO criteria for diabetes mellitus.15 IGT was defined as two-hour postprandial values of 140 to 199 mg/dl whereas IFG was defined as fasting serum glucose values of 100 to 125mg/dl. Only the fasting and postprandial serum glucose concentrations were taken into consideration for the determination of IFG and IGT frequency, respectively. All the data was analyzed by computer statistical software SPSS 19.0.

RESULTS

Out of 1800 patients, 135(7.5%) patients found to have type II diabetes mellitus (Table 1). From 135 diabetes patients, 80(59.26%) patients were males while rest 55(40.74%) were females. Ten patients had ages <30 years, 20 patients were ages between 30 to 40 years, 35 patients had ages 41 to 50 years, 38 patients were ages 51 to 60 years, 19 patients had ages 61 to 70 years and 13 patients were ages above 70 years. 60 patients had urban residency while 75 patients had rural residency. 94 patients had monthly income less than 30000 rupees and 41 patients had monthly income above 30000 rupees. Ninety five patients were illiterate while 40 patients were literate. Forty one patients had family history of diabetes mellitus (Table 2). Impaired fasting glucose was found in 48 (2.67%) patients and impaired glucose tolerance was found in 62(3.44%) patients (Table 3).

Table 1: Prevalence of Type II diabetes mellitus

Type II diabetes mellitus	No.	%
Yes	135	7.5
No	1665	92.5

Table 2: Demographic information of the diabetic patients

Variable	No.	%
Gender		
Male	80	59.26
Female	55	40.74
Age (years)		
<30	10	7.41
30 – 40	20	14.81
41 – 50	35	25.93
51 – 60	38	28.15
61 – 70	19	14.07
> 70	13	9.63
Residence		
Urban	60	44.44
Rural	75	55.56
Income		
<30000	94	69.63
>30000	41	30.37
Education		
Literate	40	29.63
Illiterate	95	70.37
Family history of diabetes		
Yes	41	30.37
No	94	69.63

Table 3: Frequency of IFG and IGT among all patients (n=1800)

Variable	No.	%
IFG	48 (M 30/F 18)	2.67
IGT	62 (M 40/F 22)	3.44

DISCUSSION

Worldwide, type II diabetes mellitus is one of the most common and life threatening disease found in medical health care centers[11]. In Pakistan the rate of diabetes mellitus is increasing day by day. The most important risk factor of this malignant disorder is unawareness and hypertension[12]. In present study we found 135(7.5%) patients had diabetes mellitus out of 1800 patients. Many of other studies shows similarity to our study in which frequency of diabetes mellitus was 6 to 15%[13,14]. In our study male patients had high prevalence of diabetes mellitus 59.26% than the females 40.74%. These results were similar to some other studies in which male patients population was high 55 to 70% as compared to females[15,16]

In present study, we found that patients with ages 40 to 60 years had high frequency than the other age groups 54.08%. Some other studies shows similarity to our study in which the most common age group of diabetes mellitus patients was 40 to 50 and 50 to 60 years.[17,18] We found in our study that mostly patients had rural residency 55.56% and most of the patients were illiterate 70.37%. We observed that these two risk factors were most common and highly involved in increasing the rate of diabetes mellitus. Mostly people were unaware about the severity of this malignant disorder. Multiple studies about diabetes mellitus illustrated that the unawareness and people having rural residency with low income had high prevalence of type II diabetes mellitus[19,20].

In our study, impaired fasting glucose was found in 48 (2.60%) patients in which 30 were males and 18 patients were females and impaired glucose tolerance was found in 62 (3.48%) patients in which 40 patients were male and 22 patients were females. In present study the overall prevalence of diabetes mellitus, IFG and IGT in males was high as compared to females. These results were similar to some other studies in which male patients were most common than females regarding DM, IFG and IGT.[21,22]

CONCLUSION

Diabetes mellitus is one of the most common disease found all over the world. We concluded from this study that the prevalence of diabetes mellitus is high and the male patients had high rate of DM than the females. The most common age group was 40 to 60 years. We also found that the IFG and IGT rate in male patients was high as compared to females. It is also concluded that the unawareness is the most common risk factors.

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