Evaluation of Prevalence of Diabetes Mellitus in Adults Visited in a Tertiary Care Hospital in Bihar

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ABSTRACT

Background: Developing countries face an increasing burden of non-communicable diseases including diabetes mellitus. Diabetes mellitus (DM), which is related to cardiovascular disease, is one of the main global health problems. The aim of the present study was conducted to study to assess the prevalence of Diabetes Mellitus in adults.

Materials and Methods: The present cross sectional study was carried out in 480 adults of age group 30-50 years over the period of 6 months. All the information was recorded in the pre-designed and pre-tested schedule. Study participants were assessed using a standard questionnaire including information for socioeconomic status, physical activity. Diabetes mellitus was assessed by using fasting blood glucose and oral glucose tolerance test. Data was analysed using SPPS software.

Results: In the present study total participants were 480 in which 180 males and 171 females were normal. 72 male participants and 57 female participants were Type 2 DM. Maximum participants were normal in age group 30-40 years and maximum participants were type 2 DM in age group 50-60 years.

Conclusion: Our study concluded that Type 2 DM was prevalent in males and age group 50-60 years.

KEYWORDS: Diabetes Mellitus, Fasting Blood Glucose, Oral Glucose Tolerance Test.

INTRODUCTION

Non-communicable diseases (NCDs) are becoming major health challenges with continually increasing burden.[1] Diabetes mellitus is one main segments of chronic non-communicable diseases.[2] Diabetes mellitus (DM) is a metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. Insulin deficiency in turn leads to chronic hyperglycemia with disturbances of carbohydrate, fat, and protein metabolism.[3] According to the International Diabetes Federation (IDF), the number of people globally with type 2 diabetes mellitus (T2DM) will increase to 552 million by 2030, over twice the number in 2000.[3]India is home to 69.1 million people with DM and is estimated to have the second highest number of cases of DM in the world after China in 2015.[4] India currently has 61.3 million diabetics, a figure that is projected to increase to 103 million by 2030.[5] Obesity is a significant risk factor of diabetes type 2. The association has been repeatedly demonstrated in the different studies.[6,7] Sedentary life style appears to be an important risk factor for the development of type-2 diabetes mellitus. Several prospective cohort study found that type 2 DM mellitus was almost 2.5 times as likely to develop in subjects with hypertension as in subjects with normal blood pressure.[8-10]

Over the past 30 years, the status of diabetes has changed from being considered as a mild disorder of the elderly to one of the major causes of morbidity and mortality affecting the youth and middle-aged people.[11] An upsurge in number of early-onset diabetes cases is also responsible for the development of various diabetic complications due to longer disease duration; however data on the prevalence on diabetic complications across the whole of India is scarce.[12-14] The aim of the present study was conducted to study to assess the prevalence of Diabetes Mellitus in adults.

MATERIALS AND METHODS

The present cross sectional study was carried out in 480 adults of age group 30-50 years visited in a Department of General Medicine, Narayan Medical College & Hospital, Jamuhar, Rohtas, Sasaram, Bihar (India) over the period of 6 months. Before the present study ethical approval was taken from the Ethical Committee of the institute and informed consent was obtained from the participants. All the information was recorded in the pre-designed and pre-tested schedule. Study participants were assessed using a standard questionnaire including information for socioeconomic status, physical activity. A 12 hour fasting blood sample (10 ml, in two aliquots— one aliquot in EDTA and another without anticoagulant) was collected from each individual by venipuncture maintaining aseptic conditions. Diabetes mellitus was assessed by using fasting blood glucose and oral glucose tolerance test (OGTT). OGTT was performed using 75 gms of glucose in the field settings and diagnostic criteria laid by Indian Council of Medical Research (ICMR) were used to diagnose DM. Data was analysed using SPPS software.

RESULTS

In the present study total participants were 480 in which 180 males and 171 females were normal. 72 male participants and 57 female participants were Type 2 DM. Maximum participants were normal in age group 30-40 years and maximum participants were type 2 DM in age group 50-60 years.

Table 1: Distribution according to gender

DM	Gender	
	Male	Female
Normal	180	171
Type 2 DM	72	57

Table 2: Distribution according to age group

DM	Age group		
	30-40	40-50	50-60
Normal	190	143	18
Type 2 DM	20	29	80

DISCUSSION

Diabetes mellitus (DM) is a metabolic disorder resulting from a defect in insulin secretion, insulin action, or both. Insulin deficiency in turn leads to chronic hyperglycemia with disturbances of carbohydrate, fat, and protein metabolism.[3] It is one of the chronic noncommunicable diseases (CNCDs) which have emerged as a leading global health problem. It is also a known risk factor for blindness, vascular brain diseases, renal failure, and limb amputations.[15]

In the present study total participants were 480 in which 180 males and 171 females were normal. 72 male participants and 57 female participants were Type 2 DM. Maximum participants were normal in age group 30-40 years and maximum participants were type 2 DM in age group 50-60 years.

Chen et al[14] and Amar singher et al[16] were the prevalence of IGT was more in male than female. In one study done by Ruhembee et al the prevalence of type 2 diabetes was higher in females.[17]

Ruhembee et al[17], Akinkugbe et al[18], the prevalence of diabetes was more in above 40 years of age group which is similar to present study findings.

Indians have a lower BMI than those of European descent. However, the risk of diabetes increases at very low levels of BMI for Indians.[19]

Hypertension, which is a silent and invisible killer condition, has been known a long time ago. This chronic condition and other risk factors, such as diabetes mellitus, often appear together.[20]

As prevention of diabetes is primarily dependent on altering lifestyle and increasing levels of physical activity, changing societal perceptions of health and improving knowledge about the risk factors of diabetes and steps to promote physical activity must receive urgent attention of policy makers and healthcare planners.[21,22]

The knowledge regarding diabetes is very poor among population. This emphasizes the need for carrying the right messages regarding diabetes right down to the masses and also extending diabetes education activities to rural areas as well where the prevalence rates of diabetes have already begun to rise.[23]

CONCLUSION

Our study concluded that Type 2 DM was prevalent in males and age group 50-60 years.

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