Research Article

Clinical profile of young adult diabetic patients attending hospital OPD of a tertiary care centre in central India

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Abstract

Background: Most diabetes prevention efforts in Indian communities have been secondary or tertiary prevention programs targeting adults with type 2 diabetes. The approaches often combine a number of strategies, including health education, health fairs, fitness programs, nutrition education, etc., and are delivered in a shotgun method with the expectation that one or two of the strategies will be effective. **Material and methods:** A Hospital-based cross-sectional study was carried out in the Department of Medicine of Chirayu Medical College and Hospital, Bhopal located in central India. All the young adult patients aged between 20-40 years were included in the study and questionnaire was used to record the clinical profile of the patients. **Results:** Diabetes Mellitus was found more in the age group of 35-40 years followed by 30-35 years age group. 08% of the cases had positive family history of diabetes mellitus and mean BMI of the cases was 23.2 kg/m^2. Out of total 76 symptomatic patients, complications of diabetes mellitus were found in 32(42.1%) of the cases. Most common complication found was genital infections seen in 18(13.2%). **Conclusion:** Early sign and symptoms of diabetes should be explained in the community through educational activities, so that the community level of understanding and knowledge about the disease increased and at the same time patients should be reinforced to use the health care services for proper control of sign and symptoms and complications of diabetes and to modify the lifestyle of the population diagnosed with diabetes mellitus.

Keywords: Diabetes Mellitus, Type II DM, Clinical Profile, Young Adult.

Introduction

Type II Diabetes Mellitus spans a continuum from impaired glucose tolerance (IGT) and impaired fasting glucose (IFG) to frank diabetes that results from progressive deterioration of both insulin secretion and action. Type II Diabetes Mellitus starting during adolescence puts the individual at risk for major morbidity and even mortality, right during the productive years of life [1].

According to recent estimates, approximately 285 million people worldwide (6.6%) in the 20–79 year age group will have diabetes in 2010 and by 2030, 438 million people (7.8%) of the adult population, is expected to have diabetes. The global increase in the prevalence of diabetes is due to population growth, aging, urbanization and an increase of obesity and physical inactivity. The primary determinants of the epidemic are the rapid epidemiological transition associated with changes in dietary patterns and decreased physical activity. Unlike in the West, where older populations are most affected, the burden of diabetes in Asian countries is disproportionately high in young to middle-aged adults [2]. Studies from India and the USA have shown increased prevalence of diabetes in younger population [3, 4]. In India, 10 per cent of diagnosed patients with diabetes were less than 30 yr of age in 2002 [5].

Education is one of the key components in ensuring better treatment and control of diabetes. There is also evidence to show that increasing knowledge regarding diabetes and its complications has significant benefits including increase in compliance to treatment, thereby decreasing the complications associated with diabetes [6]. Most diabetes prevention efforts in Indian communities have been secondary or tertiary prevention programs targeting adults with type 2 diabetes. The approaches often combine a number of strategies, including health education, health fairs, fitness programs, nutrition education, etc., and are delivered in a shotgun method with the expectation that one or two of the strategies will be effective. Prevention programmes are often implemented with little or no pilot testing, assuring poor outcomes [7].

Manuscript received: 26th Feb 2015
Reviewed: 10th Mar 2015
Author Corrected: 24th Mar 2015
Accepted for Publication: 13st Apr 2015

Research Article

Material and Methods

A Hospital based cross-sectional study carried out in the Department of Medicine of Chirayu Medical College and Hospital, Bhopal located in central India. All the young adult patients aged between 20-40 years, who visited hospital out-patient department during the period January 2012 to December 2014, and diagnosed with Type II diabetes mellitus were included in the study. Patients who did not give consent or denied to participate in the study were excluded.

A pretested and pre-structured questionnaire was used to interview the subjects and to collect data on demographic characteristics and clinical profile of the patients.

Procedure

The glucose tolerance test (GTT) is performed after 3 days of unrestricted carbohydrate diet, after an 8 hour fast and unlimited physical activity. The subject should remain seated and should not smoke throughout the test. The Glucose dose is 1.75 g per kg of anhydrous glucose (to a maximum of 75gm). It should be dissolved in about 200 ml of water and sipped over about 10 minutes to prevent nausea. The 2 hour value is from the start of ingestion of the glucose. The criterion for classification of diabetes mellitus was taken from American Diabetes Association [8].

Statistical Analysis: Data were entered in excel sheet and then analyzed using Microsoft Excel 2007.

Results

In our study out of total 136 subjects 79(58.08%) were males and 57(41.9%) were females. Age range was 20-40 years with mean age 32±4.3 years. Diabetes Mellitus was found more in the age group of 35-40 years followed by 30-35 years age group. 08% of the cases had positive family history of diabetes mellitus and mean BMI of the cases was 23.2 kg/m^2. Distribution of subjects according to the age and sex was shown in **table no.1.**

Table No. 1: Distribution of Patient by Age and Sex

Age in years	Males	Females	Total
20-25	04	02	06(04.4%)
25-30	07	05	12(08.8%)
30-35	26	18	44(32.3%)
35-40	42	32	74(54.4%)
Total	**79**	**57**	**136**

In our study out of total 136 subjects 60(44.1%) were asymptomatic and 76(55.8%) were asymptomatic. Out of total 136 patients most common symptom found was polyuria in 64(47%) cases followed by tiredness in 54(39.7%) cases. Clinical symptoms of the patients were shown in **table no.2.**

Table No. 2: Clinical Symptoms of the Patients

Symptoms	No. of cases	Percentage (%)
Polyuria	64	47
Polydipsia	37	27.2
Polyphagia	17	12.5
Weight loss	19	13.9
Tiredness	54	39.7
Blurring of vision	13	07.3
Delayed Wound Healing	13	09.5
Leg pain	08	05.8
Paraesthesia	09	06.6
DKA	05	03.6

Out of total 76 symptomatic patients, systemic symptoms were found in 46(60.5%) of the patients. Most common symptom found was cough/cold and sputum in 24(31.5%) of the cases followed by chest pain in 11(14.4%) and dysuria in 9(11.7%) of the cases. Hypertension was found in 18(23.6%) of the cases. Distribution of subjects according to the systemic symptoms was shown in **table no. 3.**

Table No. 3: Systemic Symptoms in Patients with DM

System	Symptoms	n=76 (%)
CVS	Chest pain	11(14.4)
RS	Cough/ cold/ sputum	24(31.5)
GI	Abdominal pain	13(17.1%)
	Nausea	04(5.2)
	Vomiting	06(7.8)
	Diarrhoea	01(1.3)
Genital	Balanoposthitis	03(3.9)
	Vulvovaginitis	02(2.6)
	White discharge	07(9.2)
	Dysuria	09(11.7)
Skin	Acanthosis	08(10.5)
	Pyoderma	01(1.3)
	Vitiligo	01(1.3)
	Psoriasis	01(1.3)

Out of total 76 symptomatic patients, complications of diabetes mellitus were found in 32(42.1%) of the cases. Most common complication found was genital infections seen in 18(13.2%) of the cases followed by skin infections seen in 14(10.2%) of the cases. Distribution of the cases according to the complications of diabetes mellitus was shown in **table no. 4.**

Table No. 4: Complications of Diabetes Mellitus

Complication	No. of Cases	Percentage (%)
Neuropathy	08	05.8
Nephropathy	03	02.2
Retinopathy	02	01.4
CAD	05	03.6
DKA	05	03.6
Hypoglycemia	01	00.7
Foot ulcer	02	01.4
TB	02	01.4
Skin infection	14	10.2
Genital infection	18	13.2

Discussion

In our study out of total 136 subjects 79(58.08%) were males and 57(41.9%) were females. Age range was 20-40 years with mean age 32±4.3 years. Diabetes Mellitus was found more in the age group of 35-40 years followed by 30-35 years age group, which is similar to the study conducted by Zargar A H et al in 2001[9]. In a similar type of study conducted by Sosale A, Prasanna Kumar K M in 2014, out of 4600 patients of type II diabetes mellitus, they found 35% of the diabetics in the age range of 31-40 years [10].

In our study 8% of the cases had positive family history of diabetes mellitus and mean BMI of the cases was 23.2 kg/m^2, whereas in a study conducted by Zargar A H et al, they found the positive family history in 4.6% of the cases and mean BMI of the cases was >25 kg/m^2 [9].

Out of total 136 patients most common symptom found was polyuria in 64(47%) cases followed by tiredness in 54(39.7%) cases. Abdominal pain was found in 13(17.1%) of the cases, polydypsia was found in 37(27.2%) of the cases, Diabetic Keto Acidosis (DKA) was found in 05(3.6%) of the cases, whereas in a study conducted by Banerjee S, Uday S and Biswas D in 2007, polydypsia, polyuria and polyphagia was found in 43(64.2%) of the cases, DKA was found in 13(19.4%)and abdominal pain was found in nine(13.4%) of the cases[11].

In our study most common complication of diabetes mellitus found was genital infections seen in 18(13.2%) of the cases followed by skin infections seen in 14(10.2%) of the cases which is similar to the study conducted by Suresh K, Maliyappa Vijay Kumar et al. in 2014 [12].

In our study, other complications of Type II DM like neuropathy, nephropathy, retinopathy and foot ulcers were found in 5.8%, 2.2%, 1.4% and 1.4% respectively. Whereas Suresh K, Maliyappa Vijay Kumar et al. found neuropathy in 10 patients, nephropathy in 6 patients, retinopathy in 7 patients and foot ulcers in 3 patients out of total 130 patients in their study [12].

Conclusion

Timely diagnosis of diabetes mellitus makes its management effective and care can be start very early. There should be proper health facilities available at all the levels of healthcare for early diagnosis of diabetes mellitus for providing adequate guidance and support to the patients from the very beginning.

Early sign and symptoms of diabetes should be explained in the community through educational activities, so that the community level of understanding and knowledge about the disease increased and at the same time patients should be reinforced to use the health care services for proper control of sign and symptoms and complications of diabetes and to modify the lifestyle of the population diagnosed with diabetes mellitus.

Funding: Nil, **Conflict of interes**t: None initiated.
Permission from IRB: Yes

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How to cite this article?

Soni P, Zoheb A. Clinical profile of young adult diabetic patients attending hospital OPD of a tertiary care centre in central India. *Int J Med Res Rev* 2015;3(3):317-320. doi: 10.17511/ijmrr.2015.i3.060.