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CLINICAL PROFILE OF TYPE 2 DIABETIC PATIENTS IN A TERTIARY CARE HOSPITAL IN COASTAL KARNATAKA

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ABSTRACT

In India Diabetes is not an epidemic anymore but has turned into a pandemic. Objective of the study is to study the clinical profile of Diabetes patients attending a tertiary care hospital in coastal Karnataka. This cross sectional study was conducted at Kasturba Medical college Hospital, Manipal from June 2011 to July 2011 over a period of 2 months. A random sample of 106 patients who were admitted in Medicine wards were interviewed which included history (a questionnaire) and lipid profile values, fasting and post prandial blood sugar and GlyHb values were noted down. In our study the majority (51.9 %) of the patients were in the age group of 40-60 years. Majority (78.3%) were males compared to females. Fasting blood sugar was reported high among 74.5% patients. High PPBS was reported among 78.1% patients. 84% of the patients had high cholesterol level. High triglyceride level was noted in 37.7% patients. Considering the burden of Diabetes problem and variations in the lipid profile, the dietary, and exercise interventions should be strengthened and should be counseled at every visit of patient. Regular treatment and frequent health check-up should be emphasized.

Key Words: *Clinical Profile, Diabetes in Tertiary Care, Lipid Profile*

INTRODUCTION

Population growth, aging, urbanization and increasing prevalence of obesity are some of the root causes of increase in Diabetes burden in the world. As WHO rightly predicts that developing countries bear the brunt of this epidemic in the 21st century, we see more than 70% of people with diabetes live in low and middle income countries. India has an estimated 50.8 million people living with diabetes. The largest age group is currently 40-59 years and this is expected to move to 60-79 years age group by the year 2030 with some 196 million cases (World Health Organization).

A study conducted by Maria Costi *et al.*, (2010) on Clinical characteristics of patients with type 2 diabetes mellitus at the time of insulin initiation, in Spain showed that there were 87% of patients who had a diagnosis of at least one significant comorbidity, notably hypertension and hyperlipidemia. There was a higher incidence of macro vascular complications (38.4%) than micro vascular complications (16.1%). A study conducted by Sapna Smith and Alok M Lall (2008) on Lipid Profile Levels of Diabetics and Non-Diabetics among Naini Region of Allahabad, India revealed that serum total cholesterol, LDL cholesterol and triglycerides were significantly raised ($p < 0.0001$) where as the level of HDL cholesterol was significantly lower ($p < 0.0001$) in diabetic subjects as compared to control.

Objectives

1. To study the socio-demographic characteristics of diabetic patients getting admitted to our hospital
2. To know the health seeking behavior of diabetic patients getting admitted to our hospital
3. To know the various complications associated with the hospitalized diabetic patients
4. To know their glycemic control and the lipid profile pertaining to diabetic patients.

MATERIALS AND METHODS

A prospective study was conducted at Kasturba Medical College Hospital, Manipal, India from June 2011 to July 2011 over a period of 2 months. A convenient sample was used and a total of 106 patients who were admitted in the in-patient ward under the department of General Medicine were interviewed.

The selection criteria were:

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1. Established cases of diabetes mellitus.
2. Systemic diseases like CRF, nephrotic syndrome, myxoedema, SLE were excluded from the study on the basis of history, clinical examination and relevant investigations because these conditions can alter the lipid levels.

3. Patients who were diagnosed as having type 1 diabetes mellitus were excluded from the study.

A semi structured questionnaire was prepared to collect the data. The following data was collected:

1. Socio demographic factors: name, age, sex, educational status marital status, religion and occupation.
2. Diabetes detection, duration of the disease, follow up and treatment details. Health seeking behavior was assessed by asking the patients what speciality was the physician whom they first contacted and the speciality of the physicians they subsequently contacted.
3. Complications of diabetes were note down from patient records, clinical examination and interview.
4. Other relevant information like associated hypertension, family history of diabetes in either parents or siblings was obtained
5. Details about physical activity and life style details were collected from the patients through interview and case records.

Lab values like Lipid profile, Sugar levels and Glycated Hemoglobin values at the time of admission were noted down from the case records.

Statistical Analysis

Data was analyzed by SPSS (version 11.5). Data was presented as percentages.

RESULTS AND DISCUSSION

Results

In our study we found out the following results.

Table 1: Shows the socio demographic details about the study subjects

		Number (%)			
Gender	Male	83 (78.3)	Education	Uneducated	12 (11.3)
	Female	23 (21.7)		Primary	41 (38.7)
	Total	106 (100.0)		Secondary	26 (24.5)
Age	20-40yrs	9 (8.5)		PUC	10 (9.4)
	41-60yrs	55 (51.9)		Degree	17 (16)
	60yrs	42 (39.6)		Total	106 (100.0)
	Total	106 (100.0)	Marital status	Married	104 (98.1)
Occupation	Agriculture	29 (27.4)		Unmarried	2 (1.9)
	Business	15 (14.2)		Total	106 (100.0)
	House wife	19 (17.9)	Religion	Hindu	94 (88.7)
	Govt service	10 (9.4)		Muslim	9 (8.5)
	Others	33 (31.1)		Christian	3 (2.8)
	Total	106 (100.0)		Total	106 (100.0)

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When we studied the health seeking behavior of the subjects we got the following details- In our study we found that 36 (34.0%) patients were detected to have diabetes by a general practitioner, 66 (62.3%) patients by specialist and 4 (3.8%) patients by an Ayurvedic doctor.

Out of that about 20 (18.9%) patients were taking treatment currently from general practitioner, 82 (77.4%) patients by specialist, 1 (0.9%) patient by Superspecialist, 3(2.8%) patients by an Ayurvedic doctor 95(89.6%) patients were started on treatment immediately after diagnosis of diabetes mellitus and treatment was delayed by 6 months or more for 11 (10.4%) patients. About 30 (28.3%) patients were only on Oral hypoglycemic Agents (OHA'S), 55 (51.9%) patients were on combination of OHA'S and Insulin and 21 (19.8%) patients were only on Insulin.

Among them 95 (89.6%) patients were taking treatment regularly and 11 (10.4%) were irregular in their treatment.

About 7 (6.6%) patients had duration of diabetes less than 1 yr, 39 (36.8%) patients had duration of 1 to 5 yrs, 14 (13.2%) patients had duration of 6 to 10 yrs, 40 (37.7%) patients had duration of 11 to 20 yrs, 6 (5.7%) patients had duration of diabetes more than 20 yrs.

When we asked for the history of how often the patient used to check blood sugar we found out that 51 (48.1%) patients used to check once in a month or more frequently than once in a month, 18 (16.9%) patients used to check once in 2 to 3 months, 13 (12.2%) patients used to check once in more than 3 months, 17 (16%) patients were very irregular in checking blood sugar and 7 (6.6%) patients had recently detected diabetes. 35 (33%) patients had a family history of diabetes in either parents or siblings and 71 (67%) patients did not have family history of Diabetes.

Table 2: Complications found in the study

Complications	Diabetic nephropathy	24 (22.6%)
	Diabetic neuropathy	7 (6.6%)
	Diabetic retinopathy	13 (12.2%)
	Ischemic Heart Disease	23 (21.6%)
	Cataract	2 (1.8%)
	UTI	4 (3.7%)
	Ketosis	1 (0.9%)
	Other complications not related to Diabetes	35 (33.0%)

When asked for history of physical activity 36 (34%) patients said to have doing walking daily, 16 (15.1%) patients were heavy workers, 3 (2.8%) patients were doing yoga daily and 51 (48.1%) patients were having a sedentary life style. About 61 (51.7%) patients had hypertension and the rest did not have hypertension.

The Lipid profile values at the time of admission were noted down from the case records and were made into 3 categories namely normal, borderline risk and high risk.

Fasting blood sugar, post prandial blood sugar (2 hrs after meals) and GlyHb values were noted down from the case records and were categorized as below normal, normal and high values.

The categorization was based on the standard reference values followed in the biochemistry laboratory of our hospital. The results obtained were as follows given in table 3.

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Table 3: Standard reference values followed in the biochemistry laboratory of our hospital

		Number (%)		Number (%)	
Cholesterol	<200mg/dl	90 (84.9)	Total	<4 NUNR	33 (31.1)
	200-240mg/dl	12 (11.3)	cholesterol/ HDL cholesterol	4-6 NUNR	36 (34.0)
	>240mg/dl	4 (3.8)		> 6 NUNR	35 (34.0)
	Total	106 (100.0)		Total	106 (100.1)
Triglycerides	<150mg/dl	73 (68.9)	Fasting Blood Sugar	<70mg/dl	7 (6.6)
	150-200mg/dl	12 (11.3)		70-110mg/dl	20 (18.9)
	>200mg/dl	21 (19.8)		>110mg/dl	79 (74.5)
	Total	106 (100.0)		Total	106 (100.0)
HDL	>60 mg/dl	6 (5.7)	Post prandial blood sugar	<140mg/dl	8 (7.5)
	35-60 mg/dl	34 (32.1)		140-200mg/dl	24 (22.6)
	<35 mg/dl	66 (62.3)		>200mg/dl	59 (55.7)
	Total	106 (100.0)		Total	91 (81.5)
LDL	<130 mg/dl	92 (86.8)	Glycated Hemoglobin	<4.5 %	1 (0.9)
	130-160 mg/dl	9 (8.5)		4.5-6.5%	13 (12.3)
	> 160 mg/dl	5 (4.7)		>6.5%	88 (83.0)
	Total	106 (100.0)		Total	102 (96.2)

Note: In 15 patients PPBS was not done and in 4 patients GlyHb was not done

Discussion

Majority were males- 83(78.3%) Majority was in age group of 41-60 yrsie55 (51.9%). This is consistent with the current WHO fact statistics that the largest age group of diabetes is currently 40-59 years. Majority of the patients were agriculturists- 29 (27.4%). Majority had studied up to primary class 41 (38.7%). Majority of the patients ie 82 (77.4%) were taking treatment from the specialists.

This shows the fact that people attending our hospital are the ones who have ended up in some or other complications and require treatment. But we also found out that in 11 (10.4%) of patients treatment was delayed by 6 months or more. So we emphasize on the fact that early diagnosis and treatment is very essential to prevent the complications of diabetes.

About 11 (10.4%) patients were very irregular in taking treatment. Therefore it is very essential to ensure regular treatment and educate the patients for the need to take treatment regularly. Majority of patients ie 40 (37.7%) had a long duration of diabetes- (11-20 yrs). About 17 (16%) of patients were very irregular in checking their blood sugar. So it is necessary that diabetic subjects need to be advised to check their blood sugar atleast once a month. Preferably it's better if they have glucometer at home.

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Diabetic foot is the most common complication we found in our study- 28 (26.4%) patients. Hence all diabetic patients should be advised about foot care and avoid trauma. Majority of the patients ie 51 (48.1%), had a sedentary life style. About 35 (33%) patients had a family history of diabetes.

So life style modifications like exercise, yoga, walking for atleast half an hour daily should be emphasized. Patients with a family history of Diabetes should inculcate these practices from a young age. In the lipid profile, HDL was found to be very low ie<35mg/dl in majority of the patients- 66 (62.3%) and the ratio of total cholesterol to HDL was also found to be high in 35 (34%) patients. So regular monitoring of Lipid profile values in diabetic patients is essential to prevent complications like Ischemic heart disease. Early Diagnosis and regular Treatment should be emphasized. Regular monitoring of Lipid profile values in diabetic patients is essential to prevent complications.

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