Original Research

Evaluation of clinical profile of patients with type II diabetes mellitus

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ABSTRACT:
Background: The present study was conducted to evaluate clinical profile of patients with type II diabetes mellitus.
Materials & Methods: 86 patients of type II diabetes mellitus were subjected to fasting, random blood glucose level. Blood urea, serum creatinine, urine analysis and electrocardiogram.
Results: The mean FBS was 192.4 mg/dl, RBS was 290.6 mg/dl, HbA1C was 11.2%, HDL was 42.3 mg/dl, TG was 135.6 mg/dl and LDL was 86.2 mg/dl. Complications seen in DM patients were peripheral neuropathy in 14, retinopathy in 5, nephropathy in 3, CVD in 10 and CAN in 7 patients. The difference was significant (P< 0.05).
Conclusion: Common complications were peripheral neuropathy, retinopathy and nephropathy. Routine follow up is mandatory in patients with type II diabetes mellitus.
Key words: Diabetes, peripheral neuropathy, retinopathy

INTRODUCTION

Diabetes mellitus (DM) is emerging as an epidemic worldwide and is a global public health problem. Diabetes mellitus (DM) is currently taking its place of the most threat to human health within the 21st century.[1] Diabetes has become a major health issue in South-East Asia. India has the largest diabetic population and one of the highest diabetes prevalence rates in the world. Hence India is called as capital of diabetes. According to International Diabetes Federation (IDF) 366 million people had diabetes in 2011, by 2030 this will have risen to 552 million. This represents a real threat to economic productivity of developing countries like India. The number of people suffering from DM was around 61.3 million in 2011 expected to rise to 101.2 million by 2030 in India.[2]

The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart and blood vessels. Several pathogenic processes are involved in the development of diabetes.[3]

Long term complications of diabetes include retinopathy with potential loss of vision; nephropathy leading to renal failure; autonomic neuropathy causing gastrointestinal, genitourinary and cardiovascular symptoms and sexual dysfunction. Patients with diabetes have an increased incidence of atherosclerotic cardiovascular, peripheral arterial and cerebrovascular disease.[4]

The chronic complications of diabetes are broadly divided into microvascular and macrovascular, with the former having much higher prevalence than latter. Microvascular complications include neuropathy, nephropathy and retinopathy. Whereas macrovascular complications consist of cardiovascular disease, stroke, peripheral artery disease. Long-term poor glycemic control can only increase the risk of developing advanced diabetic neuropathy, although long-term follow-up studies are lacking.[5] The present study was conducted to evaluate clinical profile of patients with type II diabetes mellitus.

MATERIALS & METHODS

The present study was conducted in the department of internal medicine. It comprised of 86 patients of type II diabetes mellitus of both genders. All were informed regarding the study and their consent was obtained. Ethical clearance was obtained before starting the study.

Data pertaining to patients such as name, age, gender etc. was recorded. A thorough clinical examination was done. Patients were subjected to fasting, random blood glucose level. Blood urea, serum creatinine, urine analysis and electrocardiogram were done for the study group. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

| Total- 86		
Gender	Males	Females
Number	52	34

Table I shows that out of 86 patients, males were 52 and females were 34.

Table II Assessment of parameters

Parameters	Mean	SD
FBS	192.4	89.3
RBS	290.6	114.2
HbA1C	11.2	2.5
HDL	42.3	2.3
TG	135.6	46.8
LDL	86.2	14.2

Table II, graph I shows that mean FBS was 192.4 mg/dl, RBS was 290.6 mg/dl, HbA1C was 11.2%, HDL was 42.3 mg/dl, TG was 135.6 mg/dl and LDL was 86.2 mg/dl.

Graph I Assessment of parameters
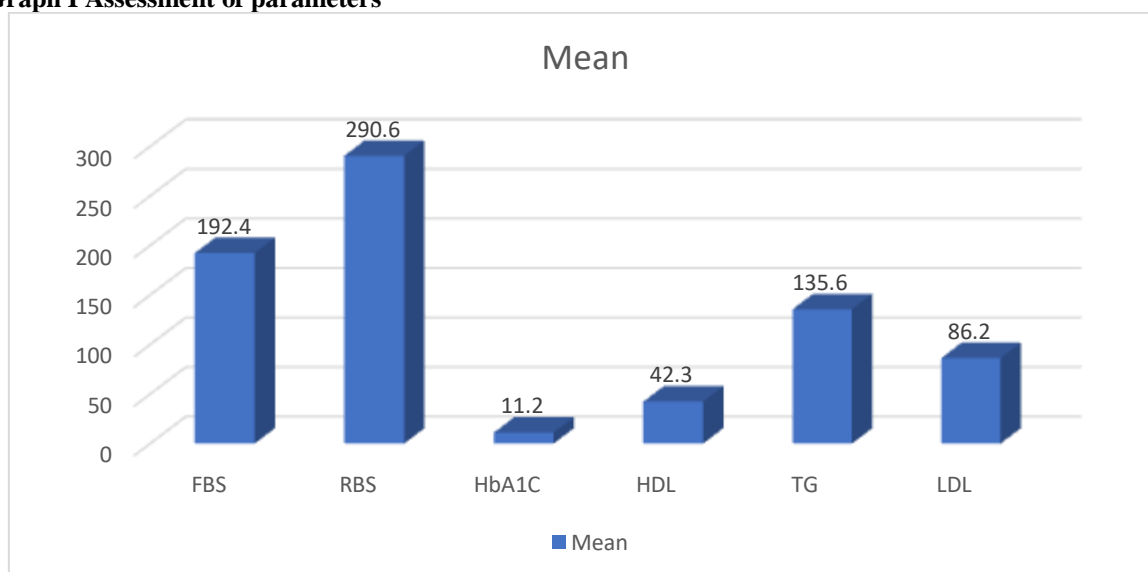
Table III Assessment of complications

Complications	Number	P value
Peripheral neuropathy	14	0.01
Retinopathy	5	
Nephropathy	3	
CVD	10	
CAN	7	

Table III, graph I shows that complications seen in DM patients were peripheral neuropathy in 14, retinopathy in 5, nephropathy in 3, CVD in 10 and CAN in 7 patients. The difference was significant (P< 0.05).

Graph II Assessment of complications
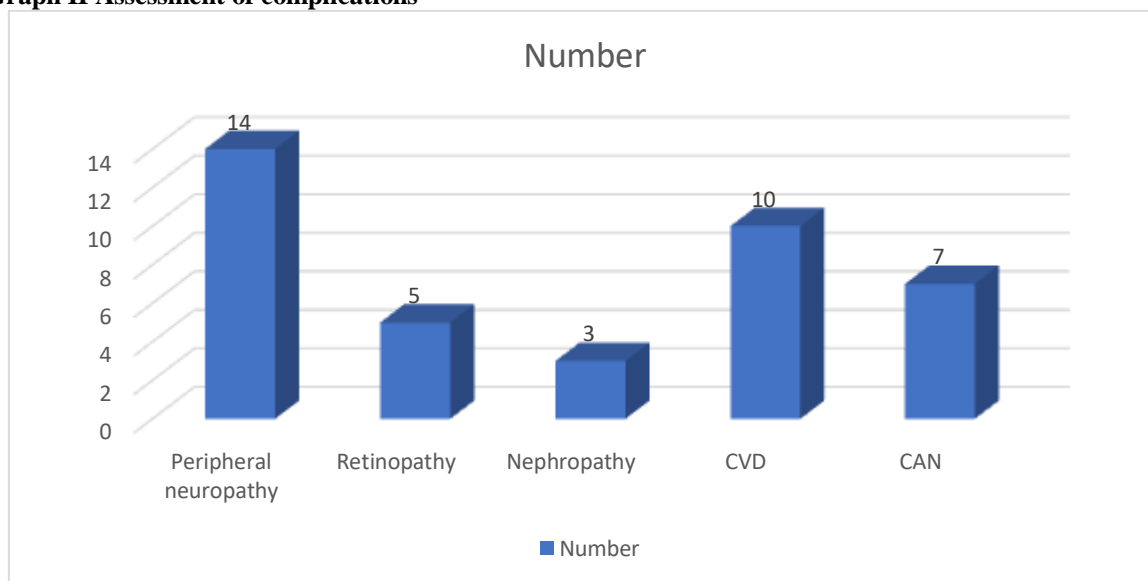
DISCUSSION

Diabetes Mellitus (DM) is a group of metabolic diseases characterized by hyperglycemia resulting from defects in insulin secretion, insulin action, or both.[6] The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction, and failure of various organs, especially the eyes, kidneys, nerves, heart and blood vessels.[7] Several pathogenic processes are involved in the development of diabetes.[8] The present study was conducted to evaluate clinical profile of patients with type II diabetes mellitus.

In present study, out of 86 patients, males were 52 and females were 34. The mean FBS was 192.4 mg/dl, RBS was 290.6 mg/dl, HbA1C was 11.2%, HDL was 42.3 mg/dl, TG was 135.6 mg/dl and LDL was 86.2 mg/dl. Penno et al[9] in their study a total 84 patients (31% males and other females) participated in the study, aging from 45 to 65 years. In the present study 17% patients were addicted to chewing tobacco, 6% were smokers and 5% to alcohol. Obesity was seen in 49% patients and 8% had a family history of T2DM. The present study concluded that obesity, family history, lifestyle and hypertension are prevalent in T2DM.

We observed that complications seen in DM patients were peripheral neuropathy in 14, retinopathy in 5, nephropathy in 3, CVD in 10 and CAN in 7 patients. Amoussou et al[10] found that out of 66 patients, 23(34.8%) were males whereas 43 (65.2%) were females. Mean age in this study population was 55.36 years with a standard deviation of 11.362. In present study, the mean fasting blood sugar level was 196.12±77.180, mean postprandial blood sugar level was 303.26±115.385 and the mean HbA1C levels was 10.95±2.369. 77.3% were on oral hypoglycaemic agents, 13.6% on insulin and 9.1% on combined therapy with oral hypoglycemic agents and insulin. The complications associated with diabetes found in present study were microvascular complications which include peripheral neuropathy 41(62.1%), retinopathy 31(46.96%), nephropathy 28 (42.42%). Peripheral neuropathy was found to be most commonly associated. Macrovascular complications include cardiovascular disease in 12.12% (n=8) and cerebrovascular disease in 4.54% (n=3). Autonomic neuropathy was found in 69.69% (n=46). The complications of DM are commonly seen in patients with poor glycaemic control. Among microvascular complications, peripheral neuropathy was most commonly seen. Autonomic neuropathy usually goes unnoticed and asymptomatic in most of the individuals. Increasing levels of HbA1c was found to be significantly correlated with neuropathy.

Alfadda et al[11] retrospective review of charts of 103 eligible patients recorded complications, treatment, the provider screening practices (measurements of HbA1c, BP, Lipid profile, number of eye and foot examination). The mean age of 99 type 2 diabetic patients was 57 years, with a mean BMI of 30.8 kg/m2 and with a mean duration of diabetes of 11.8 years. Many had comorbidites or complications: 25% had retinopathy, 17.2% had nephropathy, and 12.1% had neuropathy. The HbA1c level of ≤ 7.0 was maintained by only 24.7% of patients. About 85% of patients had ≥ 1 lipid profile, during their follow-up period. During 2nd and 3rd year follow up only 30% had ≥ 1 HbA1c measurement and 26.5% (at 2nd year), 22% (at 3rd year) had ≥ 1foot examination. The proportion of patients, who had ≥ 1 eye examination was also reduced during their follow up. The provider practice screening results per patient-year was well below the specified guidelines of ADA.

People with diabetes should receive medical care from a physician-coordinated team. These teams may include physicians, nurse practitioners, physician's assistants, nurses, dietitians, pharmacists, and mental health professionals with the expertise and a special

61

interest in diabetes. It is essential in this collaborative and integrated team approach that individuals with diabetes assume an active role in their care. There is strong evidence to suggest that a close correlation exists between good glucose control and improved clinical outcomes in hospitalized diabetic patients and in the outpatient setting.[12]

CONCLUSION

Authors suggested that routine follow up is mandatory in patients with type II diabetes mellitus. Common complications were peripheral neuropathy, retinopathy and nephropathy.

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