

The clinical profile of type 2 diabetes mellitus patients above age of 40 years

¹Dr. Monika MP, ²Dr. Prajwal Kumar US

¹Specialist/Assistant Professor, Department of General Medicine, District Hospital CIMS, Chamarajnagar, Karnataka, India

²Specialist, Taluk General Hospital, Heggadadevanakote, Mysuru, Karnataka, India

Corresponding Author:

Dr. Prajwal Kumar US

Abstract

Diabetes mellitus found to be leading cause of mortality and morbidity in worldwide in the future and it is a predisposing factor for cardiovascular disease. End stage renal disease, adult blindness, lower extremity amputation (non-traumatic) are the leading causes in diabetes mellitus. Diabetes mellitus is one of the most common health problems facing mankind and is a major public health problem. Randomly selected 100 patients, both male and female with type 2 diabetes mellitus above age of 40 years including newly diagnosed diabetics attending hospital were included in this study. Among the study group of 100 patients 46% patients had hypertension and 10% had ischemic heart disease. Among the study group of 100 patients 48% had positive family history and 52% had negative family history. Among the study group 100 patients 5% had HbA1C less than 6, 56% had between 6-7.5 and 39% had HbA1C above 7.

Keywords: Type 2 diabetes mellitus, Hba1c, positive family history

Introduction

Diabetes mellitus a group of metabolic disorder. Phenotype is hyperglycemia. It is complex interaction between environmental and genetic factors. Factors affecting diabetes mellitus are increased glucose production, decreased glucose utilization and reduced insulin secretion. Secondary pathophysiological changes found in multiple organ systems due to metabolic dysfunction associated with diabetes mellitus causing tremendous burden on health in diabetic patients ^[1].

Diabetes mellitus found to be leading cause of mortality and morbidity in worldwide in the future and it is a predisposing factor for cardiovascular disease. End stage renal disease, adult blindness, lower extremity amputation (non-traumatic) are the leading causes in diabetes mellitus.

Diabetes mellitus is one of the most common health problems facing mankind and is a major public health problem. The pathogenesis is complex and involves the interaction of genetic and environmental factors. A number of environmental factors have been shown to play a critical role in the development of the disease, particularly excessive caloric intake leading to obesity and a sedentary lifestyle. The clinical presentation is also heterogeneous, with a wide range in age at onset, severity of associated hyperglycemia and degree of obesity ^[2, 3].

According to International Diabetes Federation Diabetes Atlas 2017-Some 425 million people worldwide, or 8.8% of adults between 20-79 years, are estimated to have diabetes. About 79% populations stay in middle and low income countries. People with diabetes between age of 18 to 99 years increases to 451 million. If this continues it has been estimated that between age of 18 to 99 years it will be 693 million people by 2045 or between age of 20-79 years it will be 629 million people, will have diabetes ^[4].

Methodology

Randomly selected 100 patients, both male and female with type 2 diabetes mellitus above age of 40 years including newly diagnosed diabetics attending hospital were included in this study.

- Informed consent was taken as per attached annexure.
- 100 type 2 diabetic patients, newly diagnosed was selected, as per inclusion and exclusion criteria.
- It is a cross sectional study.
- Detailed history was taken and examination performed as per attached annexure.
- Blood and other appropriate investigations were done as per attached annexure.
- Data compared and analysed as per chi-square test and student t test.

Inclusion criteria

Known type 2 diabetes mellitus and newly detected type 2 diabetes mellitus.

Exclusion criteria

Those who are not willing for the study

- Patient with known thyroid disease.
- Patient with chronic renal failure and diabetic nephropathy.
- Patient with acute illness like sepsis, acute MI, severe heart failure.
- Patient with hepatic dysfunction.
- Pregnancy.
- Patient on drugs like amiodarone, propranolol, corticosteroids and OCP.
- History of thyroidectomy.
- History of radioactive Iodine.

Results

Table 1: Mean Age of the Study Population

S. No.	Variables	Mean Age \pm Standard Deviation
1.	Male	58.07 \pm 9.81
2.	Female	58.23 \pm 8.72
3.	Total Population	58.13 \pm 9.41

Among the study group of 100 patients, mean age of males was 58.07 \pm 9.81 and mean age of females was 58.23 \pm 8.72.

Table 2: Duration of Diabetes in the Study Population

S. No.	Duration of Diabetes	No. of Patients	Percentage
1.	Newly Diagnosed	13	13%
2.	1 Year	6	6%
3.	1-2 Years	12	12%
4.	3-5 Years	19	19%
5.	6-10 Years	39	39%
6.	11-15 Years	7	7%
7.	16-20 Years	4	4%

Among the study group of 100 patients 13% were newly diagnosed diabetics, 37% patients had diabetes for less than 6 years, 39% had between 6-10 years and 11% had above 10 years.

Table 3: Type of Treatment in Patients with Diabetes

S. No.	Type of Treatment	No. of Patients	Percentage
1.	Oral Hypoglycemic Agents (OHA)	72	72 %
2.	Insulin	10	10 %
3.	Both (OHA + Insulin)	5	5 %
4.	Newly Diagnosed Diabetic	13	13 %

Among the study group of 100 patients 72% were on oral hypoglycemic drugs, 10% were on insulin, 5% were on both and 13% were newly diagnosed diabetics.

Table 4: Adherence to Treatment in Patients with Diabetes

S. No.	Adherence to Treatment	No. of Patients	Percentage
1.	Regular on Medications	72	72 %
2.	Irregular on Medications	15	15 %
3.	Newly Diagnosed Cases Not on Medications	13	13 %

Among the study group of 100 patients 72% were on regular medication, 15% were on irregular medications and 13% were newly diabetics.

Table 5: Family History of Diabetes in the Study Population

S. No.	Family History	No. of Patients	Percentage
1.	Positive Family History	48	48 %
2.	Negative Family History	52	52 %

Among the study group of 100 patients 48% had positive family history and 52% had negative family history.

Table 6: Associated Comorbid Conditions in the Study Population

S. No.	Comorbid Conditions	No. of Patients	Percentage
1.	Hypertension	46	46 %
2.	Ischaemic heart disease	10	10 %

Among the study group of 100 patients 46% patients had hypertension and 10% had ischemic heart disease.

Table 7: Distribution of Patients with Respect to Presence of Retinopathy

S. No.	Retinopathy	No. of patients	Percentage
1.	Present	26	26 %
2.	Absent	74	74 %

Among the study group of 100 patients 26% had diabetic retinopathy and rest 74% had no diabetic retinopathy.

Table 8: Distribution of Patients on the Basis of BMI

S. No.	Body Mass Index	No. of Patients	Percentage
1.	< 18.5	0	0%
2.	18.5-24.9	35	35%
3.	25-29.9	53	53%
4.	30-34.9	9	9%
5.	35-39.9	1	1%
6.	≥40	2	2%

Among the study group of 100 patients none had BMI less than 18.49, 35% were between 18.5-24.99, 53% were between 25-29.99, 9% were between 30-34.99, 1% between 35-39.99 and 2% were equal or above 40.

Table 9: HbA1C Levels in the Study Population

S. No.	HbA1C Levels	No. of Patients	Percentage
1	≤ 6	5	5 %
2	6.1-6.5	7	7 %
3	6.6-7	19	19 %
4	7.1-7.5	30	30 %
5	7.6-10	27	27 %
6	> 10	12	12 %

Among the study group 100 patients 5% had HbA1C less than 6, 56% had between 6-7.5 and 39% had HbA1C above 7.6.

Discussion

In this study among 100 patients, mean age of males was 58.07±9.81 and mean age of females was 58.23±8.72.

Study conducted by Pankaj Kumar *et al.* mean age of study population was 54.63±8.85 years.

In this study group of 100 patients 13% were newly diagnosed diabetics, 37% patients had diabetes for less than 6 years, 39% had between 6-10 years and 11% had above 10 years.

Study conducted by Madavaram Sreelatha *et al.* [5] shows that 76% patients were less than 5 years including newly diagnosed diabetics, 20% cases were between 6-10 years of duration, 12% cases were above 10 years.

In this study among 100 patients, 46 patients of studied population had hypertension.

Study conducted by Fuller H *et al.* [6] observed frequency of hypertension is highest in type 2 diabetes patients older than 53 years, 43% male and 52% of females.

Study conducted by L Tanow *et al.* [7] observed 78% of type 1 diabetic patients and 50% of type 2 diabetics had hypertension.

In contrast to this observation, Pasupathi *et al.* [8] found hypertension in 25% of diabetic patients.

Cardiovascular events to prior evidence of diabetes, a twofold to threefold increased risk of clinical atherosclerotic disease was reported. The relative impact of diabetes on CHD, IC or stroke incidence was the same for women as for men; for CVD death and CHF, it was greater for women. Cardiovascular mortality was actually about as great for diabetic women as for diabetic men. Prevalence of CAD in general population in urban areas in India is 6.4%.

In this study among 100 patients 48% patients had family history of diabetes and remaining 52% had no family history.

Study conducted by Geeta *et al.* [9] observed among 215 diabetic patients showed Nearly 68.8% of T2DM patients had family history of Diabetes, among them 25.1% of them had diabetic mother and 15.3% had diabetic father.

In this study among 100 patients 72 % were on regular treatment, 15% were on irregular treatment, newly diagnosed were 13%.

Study conducted by Shuvankar Mukherjee *et al.* [10] shows compliance rate to anti diabetic drug was found to be 57.7%.

In this study among 100 patients 61% patient were overweight and obese, 39% patient had normal BMI.

Study conducted by Michael I ganz *et al.* [11] shows that positive association between BMI and the risk of type 2 DM.

Study conducted by Mc Larty *et al.* [12] reported prevalence of IGT in subjects of all age

group increasing with BMI.

In this study among 100 patients 26% patients had diabetic retinopathy and rest 74% had no retinopathy.

Study conducted by Karma Loday Bhutia *et al.* ^[13] observed prevalence of diabetic retinopathy was 17.4%.

Study conducted by A Southwell *et al.* ^[14] found prevalence of diabetic retinopathy was 15%.

In this study among 100 patients 5% patients had HbA1C less than 6, 56% patients had HbA1C between 6-7.5 and 39% patients had HbA1C above 7.6.

Study conducted by Craig J Currie *et al.* ^[15] observed that majority of patients among 27965 HbA1C was found to be above 7.5%.

Study conducted by Paolo Fumelli *et al.* ^[16] shows that among 562 patients HbA1C was found to be above 8%.

Conclusion

In this study among 100 patients 5% patients had HbA1C less than 6, 56% patients had HbA1C between 6-7.5 and 39% patients had HbA1C above 7.6.

In this study among 100 patients 26% patients had diabetic retinopathy and rest 74% had no retinopathy.

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