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## Clinical profile of patients with diabetes type II at a tertiary care hospital

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### Abstract

In type 2 diabetic patients CAD constitutes major determining factor of morbidity and mortality. It is two times more common in diabetic patients than general population. Surprisingly two third of patients who develop acute myocardial infarction or any other cardiovascular complications after 40 years of age have either diabetes mellitus or impaired glucose tolerance. The previously formulated proforma used to collect the clinical and demographic details of the samples. Detailed history related to the present as well as a thorough history pertaining to other diseases were taken. Each patient was enquired about previous drug history, coronary artery disease, hypertension, diabetes and any other comorbid conditions. Smoking and Hypertension were associated with diabetes.

**Keywords:** Diabetes, smoking, hypertension

### Introduction

In type 2 diabetic patients CAD constitutes major determining factor of morbidity and mortality. It is two times more common in diabetic patients than general population. Surprisingly two third of patients who develop acute myocardial infarction or any other cardiovascular complications after 40 years of age have either diabetes mellitus or impaired glucose tolerance.

CAD in diabetes is basically asymptomatic and silent during initial phase of disease and unmasking the risk of CAD has got paramount importance in modern day world since it prevents death and disability <sup>[1]</sup>.

Dyslipidemia plays the important role in both type 2 diabetes and CAD.

Even though CAD commonly associated with systemic hypertension, type 2 diabetes, stroke, obesity, smoking and lipid abnormalities are still the most common associations <sup>[2]</sup>.

Prevalence of CAD has been reported as 8% in general population. CAD prevalence and incidence varies in different continents. Its prevalence increasing in India. Compared with non-diabetic patients, people with diabetes have an increased incidence of CAD.

Recent studies showed that CAD is independently associated with an increased HbA1c levels and mortality rates are higher in type 2 diabetic patients with CAD than with general population. Patients with type 2 diabetes with CAD have got poor prognosis <sup>[3]</sup>.

The screening of CAD should be done early in course of type 2 diabetic patients, since diabetes itself is a cad equivalent. The patients with age more than 40 years should be subjected to screening tests for early diagnosis and timely intervention.

The risk of CAD is highly dependent on associated cardiovascular risk factors in patients with diabetes such as hypertension, dyslipidemia, microvascular complications, smoking, advanced age and family history of CAD <sup>[4]</sup>.

Silent myocardial ischemia occurs in greater than one in five asymptomatic patients with type 2 diabetes.

### Methodology

This study was conducted on 100 patients with Type 2 Diabetes patients visiting Diabetology clinic during the study period.

### Inclusion criteria

- All Type 2 Diabetes patients as defined by ADA.

- Age >40 yrs.
- Duration of Diabetes >5yrs.
- Family history of CAD.
- Hypertenstion
- Dyslipidemia
- Current Tobacco smoking.
- BMI >23 kg/m2

**Exclusion criteria**

- Previous history of CAD/undergone coronary intervention.
- Patients with abnormal ECG and Echocardiogram suggestive of ischemia.
- Patient Refusal to give consent.
- Age <40 yrs.
- Recently discovered Diabetes and type 1 diabetes
- Severe valvular heart disease.
- Patients with chronic inflammatory condition.

As per the previously designed, profoma was used to collect clinical information of the samples and thorough clinical examination was conducted. Electrocardiogram, Echocardiogram, Exercise tread mill test will be done.

The levels of high sensitivity c reactive protein will be measured and correlate the data.

The previously formulated proforma used to collect the clinical and demographic details of the samples. Detailed history related to the present as well as a thorough history pertaining to other diseases were taken. Each patient was enquired about previous drug history, coronary artery disease, hypertension, diabetes and any other comorbid conditions.

**Results**

**Table 1:** Duration of diabetes

Duration of DM	Number	Percentage
<5 years	24	24%
5-10 years	57	57%
>10 years	19	19%
Total	100	100%

**Table 2:** Diabetes associated with hypertension

Hypertension	Yes	No
Male	45	27
Female	20	08
Total	65	35

**Table 3:** Smoking associated with diabetes

Smoking	Yes	No
Male	40	32
Female	0	28
Total	40	60

**Discussion**

Its group of metabolic disorders that share the phenotype of hyperglycemia due to decreased production of insulin or developing resistance to its action. Absolute or relative deficiency of insulin results from interaction between both genetic and environmental factors.

Approximately diabetes is present in 3 to 5% of rural population in India. In urban constitutes about 10 to 15%. NIDDM constitutes nearly 95-97% of total diabetic

population. The maximum macrovascular and microvascular complications are associated with NIDDM. 75% diabetic deaths mainly due to macrovascular complications.

Coronary artery disease, stroke and peripheral vascular disease are approximately 2 times more common in men with diabetes mellitus than non-diabetics. Compared with men women having 3 to 4 fold risk of cardiac complications associated with type 2 diabetes [5].

Age plays a major role for the occurrence of vascular complications of diabetes mellitus and prevalence of CAD is increases as age advances.

Primary pathogenesis is formation of atheromatous plaque due to dyslipidemia. The incidence of atherosclerosis increases as the age advances and finally leads to occlusion of blood vessels producing macrovascular complications [6]. Type 2 diabetes has strong genetic component. The incidence of type2 diabetes in identical twins is 70 to 90% and it proves the single most causative factor.

Individuals with a parent with diabetes have an increased risk and if both parents have type 2 diabetes, the risk reaches 40%.

The genotype is altered by various factors, and the predominant factor will be central obesity. Obesity per se will not produce diabetes but it accelerates the disease in vulnerable group [7].

Obesity particularly central obesity present in older people contributes to the development of diabetes.

Studies showed that significant contribution from other life style events like smoking, lack of physical activity, dietary habits, consumption of highly refined carbohydrates, reduced intake of fibre diet and urbanization with stressful life in the development of type 2 diabetes [8].

Type 2 diabetes mellitus patients die mainly because of Cardiovascular disease and its complications. Aging and obesity are the reason for epidemic of type 2 diabetes mellitus. "The dyslipidemia which is associated with insulin resistance called as Diabetic Dyslipidemia, accounts for the increased Cardiovascular risk in patients with type 2 diabetes".

Generally diabetic patients having normal LDL cholesterol levels but those are small and dense atherogenic LDL particles. Diabetic dyslipidemia have lipid profile of reduced HDL cholesterol and increased triglyceride levels.

**Conclusion**

Type 2 diabetes has strong genetic component. The incidence of type2 diabetes in identical twins is 70 to 90% and it proves the single most causative factor.

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