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CLINICAL PROFILE OF TYPE 2 DIABETES

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ABSTRACT

Diabetes mellitus (DM) is emerging as an epidemic worldwide and is a global public health problem. India is the capital of diabetes. It is a major health issue in south-East Asia. By 2030 it is estimated that around 101.2 million peoples will suffer from DM. The present cross sectional observational study was conducted on Clinical profile of Type 2 diabetes mellitus (T2DM). 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.
The present study concludes the profile of T2DM from a tertiary care hospital with special emphasis on risk factors and complications associated with T2DM.

KEYWORDS: Type 2 diabetes mellitus, Obesity, Hypertension, Neuropathy, Nephropathy, Retinopathy.

INTRODUCTION

Diabetes mellitus (DM) is emerging as an epidemic worldwide and is a global public health problem. 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.[1] 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 (IDF, 2012).The prevalence of type 2 DM is rising much more rapidly because of increasing obesity and reduced activity levels as countries become more industrialized. Early detection of warning signs and related complications will help in decreasing the severity of the disease.[2]

MATERIALS AND METHODS

The present study was conducted from June 2015 to June 2016. It was a cross sectional observational study on 84 patients of Type 2 diabetes mellitus (T2DM) from outpatient department (OPD) and In-patient department (IPD)in Tertiary Care Hospital at Aurangabad (Government Medical College and Hospital,

Aurangabad, Maharashtra, India).The patients were included in the study after written and informed consent.Descriptive data like age, name,gender, religion, personal history,medical and medication history were taken after interviewing the patients. Patient history and details were recorded on predesigned proforma.They underwent a thorough physical examination which includes weight, height,waist circumference, hip circumference, BMI, and waist to hip ratio was calculated. Waist circumference was measured using a non-stretchable tape in horizontal position just above iliac creast. Hip circumference was measured with the maximum circumference over the buttocks using non-stretchable tape. Data were completed by consulting medical reports of patients.Data was concerned with socio-demographic characteristics of patients and long term complications. Complications investigated were:

1. Peripheral neuropathy, based on the presence of subjective manifestations as paresthesia, burning feet, and the abolition of ankle tendon reflexes on the clinical examination.
2. Nephropathy, based on the presence of proteinuria in the absence of other causes of proteinuria.
3. Retinopathy, based on the presence of specific lesions on fundoscopy.

Limitations of the present study were
1. Less number of patients enrolled.

2. HbA1c could not be estimated as the facility is not available in the hospital.

RESULT AND DISCUSSION

Out of 84 Patients, 50% patients were in 45-64 years age group, 33% patients were more than 65 and 17% were below 45 yrs of age. Overall, 69% females and 31% were males.
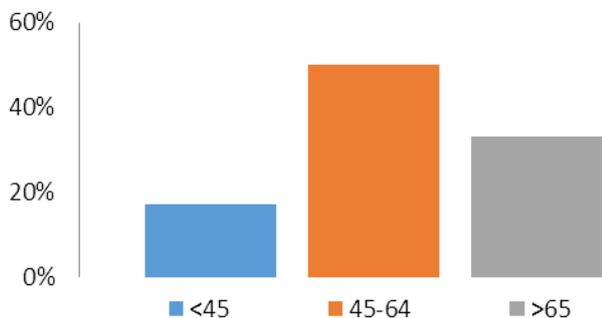

Fig 1: Age wise distribution of patients.
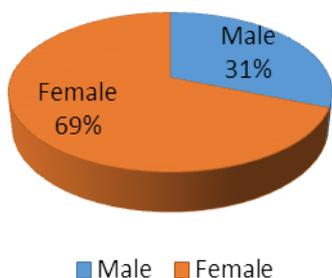
Out of 84% patients 69% were females and 31% were males.

Fig 2: Gender distribution.

Out of 84 patients who were included in the study, 28% patients had addictions. 17% of these patients were tobacco chewers, 6% were smokers¸ 5% were alcoholics 72% were non-addicted.
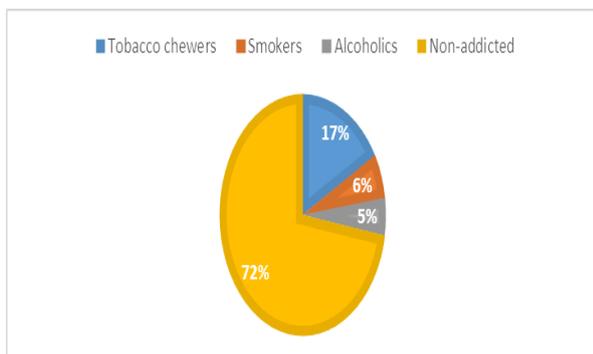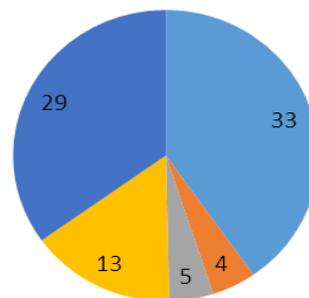

Fig 3: Addiction wise distribution of patients.

Fig 4: Risk factor distribution.

On the basis of risk factors 40% patients had age as a risk factor, obesity was seen in 5% patients, hypertension (HTN) in 35% patients, addiction in 15% patients and 5% patients were found to have family history of T2DM. More than one risk factor was seen in 69patients.
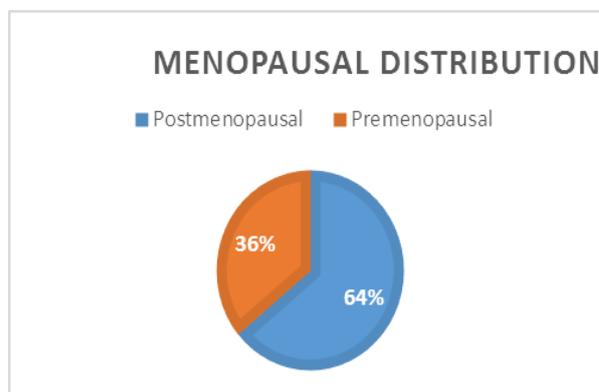

Fig 5: Menopausal Distribution.

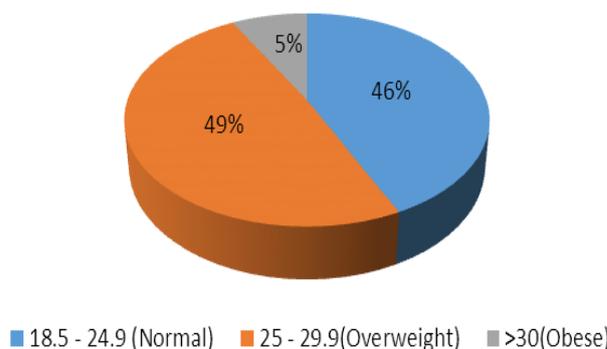Among 58 female patients, 64% were postmenopausal and 36% were premenopausal.

Fig 6: Body mass index (BMI) distribution.

On basis of BMI 5% were obese, 49% were overweight and 46% patients were within normal range.
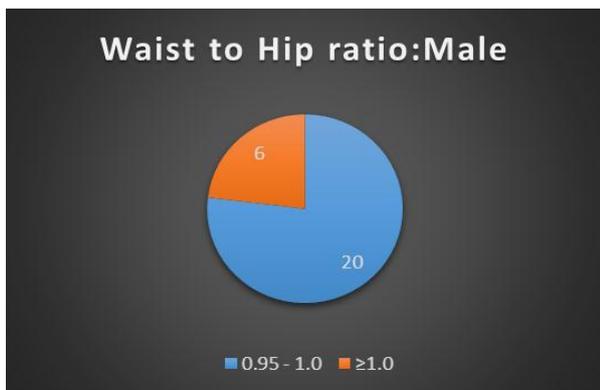
Fig 7: Waist to Hip Ratio Distribution: Male.

Among 26 male patients 20 patients had Waist to Hip ratio between 0.95 to 1.0 and 6 had waist to hip ratio ≥1.0.
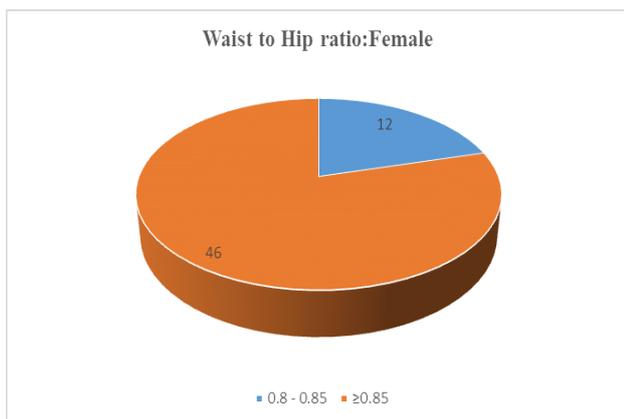

Fig 8: Waist to Hip Ratio Distribution: Female.

Out of 58 female patients 46 had Waist to Hip ratio between 0.8 to 0.85 and 12 patients had Waist to Hip ratio≥0.85.
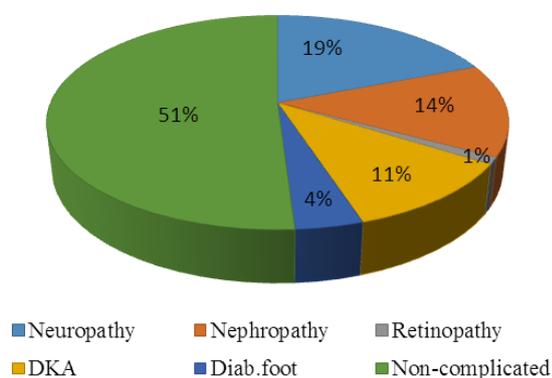

Fig 9: Distribution on the basis of complications.

Neuropathy was found in 19% patients, Nephropathy in 14%, Diabetic ketoacidosis (DKA)in 11%, Diabetic foot in 4% of patients. 1 patient was found to have with Retinopathy while 51% patients did not have any complications.
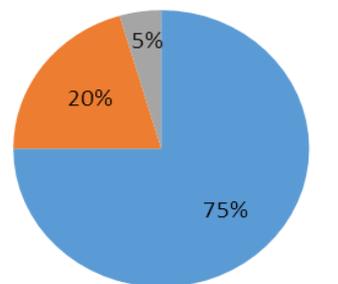

Fig 10: Treatment distribution.

Out of 84 patients of T2DM, 75% patients were on oral hypoglycemic agents (OHA), 20% were on Insulin and 5% patients were treated with combination of oral hypoglycemic agentsand Insulin.
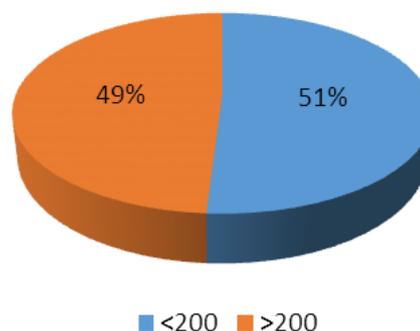

Fig 11: Random blood sugar Distribution.

Out of the observed patients (total 84) 51% patients were compliant and 49% patients were non-compliant to the given therapy.

DISCUSSION

According to Sarah Wild et.al, although Type 2 Diabetes Mellitus (T2DM) mainly occurred in patients aged between 45 to 64 years, young men or women could also suffer T2DM.[3] In present study 50% patients were found to be in the 45 to 64 of age group. According to Mayur Patel et.al,astudy on gender basis, Type 2 Diabetes mellitus (T2DM) was seen in 65% females and 35% in males.[4] In present study 69% female and 31% male patients were present.According to a previous study done by Sanjay D Bhalerao et.al (2014) smoking was seen in 30.2% and alcohol consumption was found in 26.4% cases of T2DM.[5] In our present study 17% patients were tobacco chewers, 6% were smokers and 5% were alcoholics.

According to Daniel Amoussou-Guenouet.al A study on Risk factors, the prevalence of Hypertension in type 2 diabetic patients was 70%.[6] Another study performed by Marinho RB et.al concluded that occurrence of Type 2 Diabetes mellitus (T2DM)was seen in 32% patients

having age >45 years.[7] In present study 40% patients had age >45, Hypertension was observed in 35% patients.According to Mayur Patel et.al higher BMI ($\geq$25 kg/m^2) was in relation with hypertension among the Type 2 Diabetes mellitus(T2DM) subjects.[4] Also another study by Baijayanti Baur et.al.[8] concluded that Diabetes was more (63.6%) among patients who had BMI (Body Mass Index) 25kg/m^2 or more. In present study 49% patients were having BMI 25 or more.

According to François Djroloet.al a study carried out on complications of Type 2 Diabetes mellitus(T2DM), neuropathy was seen in 57% of patients, nephropathy in 20% and retinopathy in 36% of patients.[9] In present study, neuropathy was seen in 19% patients, nephropathy in 14%, and diabetic ketoacidosis in 11% of patients, 75% patients were on OHA, 20% patients on Insulin while 5% patients wereon combination of Insulin and OHA.

Table 1: Comparative discussion on risk factors in diabetes.

Factor	% patients at the risk		Authors
	Our study	Reference study	
Age (45 to 64)	50	Prevalence age	Sarah Wild et.al
Gender	69female 31male	65females 35in males	Mayur Patel et.al
Addiction	17tobacco chewers, 6smokers 5alcoholics	30.2smoking 26.4 alcoholics	Sanjay D Bhalerao et.al
prevalence of Hypertension	35	70	Daniel Amoussou-Guenouet.al
	40 (age>45)	32 (age > 45)	Marinho RB et.al
BMI(25 or more)	49	63.6	Mayur Patel et.al Baijayanti Baur et.al
Neuropathy	19	57	François Djrolo et.al
Nephropathy	14	20	
Retinopathy	1	36	
DKA	11		
OHA	75		
Insulin	20		
OHA + Insulin	5		

CONCLUSION

The present study is directed at providing the profile of the T2DM subjects from a government tertiary care Hospital in Aurangabad Maharashtra. In present study, 50% patients were more than 45 years of age. Females were found maximum (69%) affected with T2DM in this study. Tobacco chewing (17%) was majorly seen as an addiction in present study. Hypertension was observed as a risk factor in 35% patients which shows association of T2DM with it. Obesity was seen in 49% of patients in present study which shows association of T2DM with high BMI.19% patients were observed with neuropathy in present study while nephropathy and Diabetic ketoacidosiswas seen in 14% and 11% of patients respectively.The present study revealedthat obesity, family history of diabetes, uncontrolled glycemic status, sedentary lifestyles andhypertension were highly prevalent in T2DM subjects. Hence, the overall risk profile was very poor. The findings of this study also provide an early indication for development of complications of T2DM. The present study concludes the profile of T2DM from a tertiary care hospital with special emphasis on risk factors and complications associated with it.

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