RESEARCH ARTICLE

CLINICAL PROFILE OF PATIENTS WITH DIABETES IN DHAULADHAR REGION

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ARTICLE INFO

ABSTRACT

Background: There is an increasing prevalence of type 2 diabetes mellitus (T2DM) due to change in lifestyle. India is predicted to be a global capital of diabetes. In India, the disease is now also prevalent in rural areas. **Aim:** To assess clinical profile of T2DM in a rural tertiary care centre. **Methods:** 120 T2DM patients were included in this study at Department of Medicine, Dr Rajendra Prasad Govt. Medical College, Kangra at Tanda. The patients' data were recorded on a predesigned proforma. Results: 38% aged >60 years. 57% were females, 39% of the patients had hypertension. 14% of the patients had ischemic heart disease while half of albuminuria patients had microalbuminuria. **Conclusion:** The T2DM patients had a higher prevalence of hypertension, ischemic heart disease, and albuminuria.

INTRODUCTION

Diabetes mellitus (DM) refers to a group of common metabolic disorders that share the phenotype of hyperglycaemia with disturbance of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both. Several distinct types of DM are caused by a complex interaction of genetic and environmental factors. Depending on the aetiology of the DM, factors contributing to hyperglycaemia include reduced insulin secretion, decreased glucose utilisation and increased glucose production (Alberti, 1997). DM is accepted as a worldwide epidemic with an estimated increase in prevalence from 2.8% in 2000 to 4.4% by 2030 (Wild, 2004). It has been estimated that the global burden of DM for 2015 was 415 million people, which is projected to increase to 642 million in 2040. In 2015 one in 11 adults had diabetes and by 2040 one in 10 adults will have diabetes (International Diabetes Federation, 2015). Unfortunately, most of the population (70%) in India live in rural areas. Screening for diabetes is seldom done in rural areas, resulting in a much greater burden of undiagnosed diabetics in rural areas. Most of these cases are type 2 diabetics. The earlier ,the person is diagnosed and management initiated, the better the chances of preventing harmful complications. Hypertension has been implicated in the pathogenesis of diabetic macrovascular and microvascular disease. Hypertension is about twice as frequent in individuals with diabetes as in those without (Venugopal, 2014).

The prevalence of coexisting hypertension and diabetes appears to be increasing in industrialized nations because populations are aging and both hypertension and non-insulin dependent diabetes mellitus incidence increases with age. Microalbuminuria is an early marker of chronic kidney disease and vascular dysfunction, and is associated with end-stage renal disease, and cardiovascular mortality and morbidity in both the high-risk and general population. In a study, total prevalence of albuminuria was 19.5% (16.4% in men, 21.7% in women) among T2DM (Chen, 2015). Dr RPGMC Kangra is a rural tertiary care centre in Dhauladhar region and caters most of the population in Himachal Pradesh. The present study was aimed to determine clinical profile of T2DM patients.

METHODS

Study Setting: This hospital-based observational study was conducted in the Department of Medicine, and Biochemistry at Dr. Rajendra Prasad Government Medical College and Hospital, Kangra at Tanda. It is the largest tertiary care Government hospital in the physiographic region of Shivalik and lesser Himalayas and caters to the health needs of lower hills of Kangra, Hamirpur, Una, Bilaspur, lower parts of Mandi and Chamba districts of Himachal Pradesh.

Study Duration: The study was conducted for one year after approval from Institutional Ethics Committee (IEC).

Sample Size: One hundred and twenty cases of type 2 diabetes fulfilling the selection criteria were included.

Inclusion Criteria

- Type 2 DM patients
- Age between 40 to 80 years

Exclusion Criteria

- Conditions leading to albuminuria like pregnancy, urinary tract infections, congestive cardiac failure, acute stressful illness like fever due to any cause.
- Very sick/critically ill
- Patients with type 1 DM
- Patients not willing to give consent

Albuminuria: Albuminuria refers to increased protein excretion (spot urinary albumin-to-creatinine ratio >30mg/g Cr) and this should be persistent and a continuous variable.

Normoalbuminuric: Albumin excretion rate of <30mg/d is known as normal to mildly increased albuminuria (ACR <30 mg/g).

Moderately Increased Albuminuria (Microalbuminuria): Moderately increased albuminuria formerly known as microalbuminuria refers to persistent albumin excretion between 30 and 300 mg/day (ACR 30-300 mg/g).

Severely Increased Albuminuria (Macroalbuminuria or Overt Nephropathy): Severely increased albuminuria, formerly known as Macroalbuminuria refers to albumin excretion above 300 mg/day (ACR >300 mg/g).

STATISTICAL ANALYSIS

Data was entered in the Microsoft office excel sheet. Quantitative variables were expressed as mean with standard deviation and categorical variables as frequencies and percentages.

RESULTS

General characteristics: A total of 120 patients were included in this study. Table 1 shows general characteristics of the study subjects. Out of 120 patients, 43% were males and 57% were females. 31% were in the age group ≤50 years, 31% were in 51-60 years age group and 38% were above 60 years.

Table 1. General characteristics of the study subjects

	Frequency	Percentage
Age-group (years)		
≤50	37	31%
51-60	37	31%
>60	46	38%
Gender		
Male	52	43%
Female	68	57%

Edema: In this study, only 3.3% of the patients were found to have edema (Figure 1).
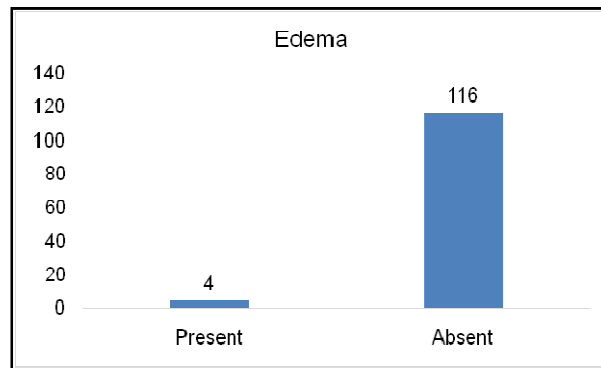

Figure 1. Edema

Hypertension: In our study, 39% (47/120) of the patients had hypertension.
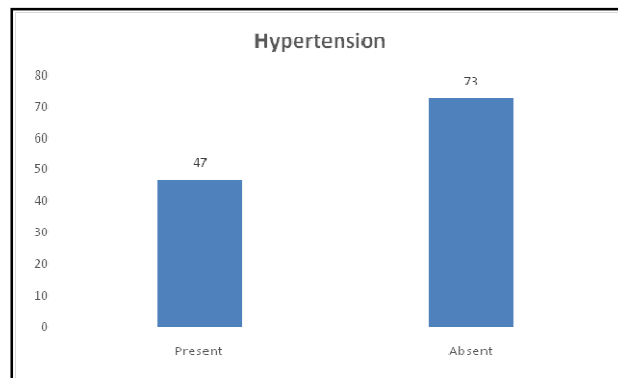

Figure 2. Hypertension

Ischemic Heart Disease: In our study, 14% (17/120) of the patients had Ischemic Heart Disease.
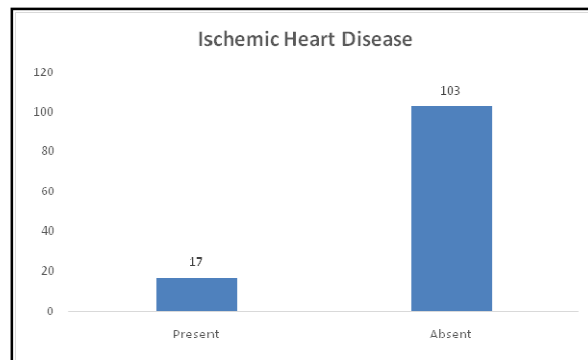

Figure 3. Ischemic heart disease

Type of Albuminuria: Out of 60 patients with albuminuria, 31 had moderately increased albuminuria.
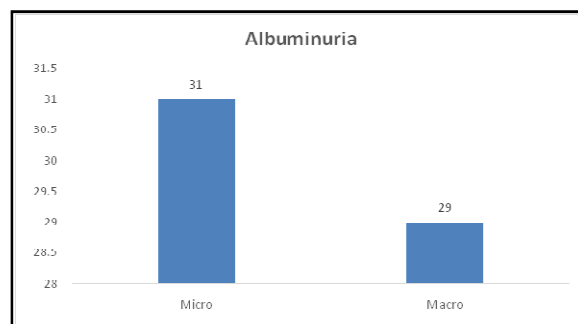

Figure 4. Type of albuminuria

DISCUSSION

In our study, 57% were females. Our findings are in concordance with Thakkar *et al*[6] who reported prevalence of DM was 58% in males and 42% in females. Santosh *et al*. (2011) reported prevalence in males of 58.23% and that in females of 41.76%. In our study, 38% patients aged >60 years with mean age of 56.3 years. Shah *et al*. (2013) found that prevalence of DM was highest in the age group of 40 – 60 (56.12%) years followed by 60 - 80 (32.31%) years' age group. Srishat M[9] reported mean age of 56 years. In our study, 39% patients were hypertensives. Nanda *et al*. (1992) observed that 21.7% patients had hypertension. Harzallah *et al*. (2006) reported prevalence of hypertension to be 22% among T2DM.

CONCLUSION

Our study was an attempt to insight the profile of the T2DM patients. There is a higher prevalence of hypertension as well as albuminuria among diabetics.

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