



ORIGINAL RESEARCH PAPER

Dermatology

A RETROSPECTIVE STUDY OF CUTANEOUS MANIFESTATIONS IN DIABETES MELLITUS IN A TERTIARY CARE CENTRE IN COASTAL AREAS IN SOUTH INDIA

KEY WORDS: Diabetes , cutaneous manifestations

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ABSTRACT

Background: Diabetes mellitus (DM) is an interdisciplinary disorder that needs many different specialties attention; however, the importance of dermatologists knowledge has not been highlighted regarding this issue. As a result, we aim to assess the prevalence and variety of DM skin manifestations in an effort to further acquaint dermatologists and other clinicians with diabetic dermatologic manifestations.

Methodology: This was a retrospective study; 300 subjects who had a diagnosis of DM, who attended the Department of Dermatology at Vinayaka Missions Medical College , Karaikal from January 2017 to January 2020 were evaluated for diabetic dermopathy from clinical notes. The results were recorded in prepared data sheets, and general descriptions of DM duration, DM type, DM control, and drug history as well as the demographic data were gathered.

Results: Among a total of 300 subjects, there were (64.8%) male and (35.1%) were female, of them 280(93.3%) were Type 2 diabetics while 20(6.6%) were Type 1. 245 patients out of 300 i.e. 81.6% were found to have skin lesions. 7 (35%) Type1 diabetics demonstrated skin lesions commonest being diabetic xerosis, infections and diabetic foot. Among Type2 diabetics 215(76.7%) showed skin lesions. Here infections, xerosis, hair loss beneath the knees, diabetic dermopathy were the most frequent. Majority of patients (63%) had combination of more than one type of skin lesion. There was statistically significant correlation of skin lesions with duration of diabetes, however similar correlation could not be demonstrated regarding metabolic control.

Conclusion: Involvement of skin is inevitable and multifarious in diabetes mellitus. Higher prevalence is seen in Type 2 diabetic population. The duration of diabetes is positively correlated with lesions and infective dermatologic manifestations were associated with higher HbA1C values.

INTRODUCTION:

Diabetes mellitus (DM) is the most common endocrine disorder characterized by hyperglycemia. [1] Global estimate of type 2 diabetics in the year 2030 is likely to be 552 million. The International Diabetes Federation (IDF) documents the total number of diabetic subjects to be around 61.3 million in India and this is further set to raise to 101.2 million by the year 2030. [2]

While all other complications of diabetes have been extensively studied, the aspect of dermatological complications is relatively unexplored. There no epidemiologic data related to skin disorders in diabetics reported from south India. This study was designed to analyze the prevalence and pattern of skin disorders among diabetic patients.

AIM

To evaluate the prevalence of skin manifestations in patients with diabetes mellitus.

To analyse pattern of skin disorders among diabetic patients from this region of South India.

MATERIALS AND METHODS

This study includes 300 subjects with history of Diabetes Mellitus who attended the Department of Dermatology at Vinayaka Missions Medical College , Karaikal from January 2017 to January 2020 were evaluated for diabetic dermopathy from clinical notes. All patients satisfying the diagnostic criteria for diabetes as laid down by the International Expert Committee on Diabetes [3] were taken as cases both from outpatient and inpatient settings. The data was collected retrospectively from the clinical notes . History, including age, sex, type of diabetes, duration, complications and treatment modalities were noted. The patients were divided into groups according to type of diabetes mellitus, its duration and degree of metabolic control. Descriptive statistical analysis

was done using the SPSS software version 15, The Pearson's Correlation test was used to assess the relationship of duration of DM with duration. $P < 0.05$ was considered significant.

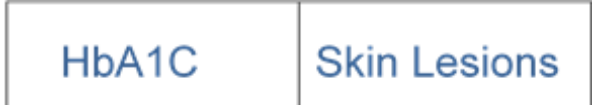
RESULTS

Among a total of 300 subjects, there were 203(67.66%) male and 97(32.33%) were female, age varied from 20 to 74 years, mean age being 46.3+/-5.2 years, of them 280(93.3%) were Type 2 diabetics while 20(6.6%) were Type 1.

The duration of diabetes was 1-5 years in 60(20%) patients, 100(33.3%) had 5-10 years of diabetes and 116(38.6%) had >10 years of diabetes. 24(8%) patients were newly diagnosed as diabetics. HbA1C was >7 in 208(69.33%) patients of whom 189 had skin lesions. However of the 92 patients who had good diabetic control 56(60.8%) had skin lesions.

245 patients out of 300 i.e. 81.6% were found to have skin lesions. The commonest lesion detected overall, were infections (133 i.e., 54.2%). However, the pattern of lesions was different in Type 1 and Type 2 diabetics.

7 (35%) Type1 diabetics demonstrated skin lesions commonest being diabetic xerosis, infections and diabetic foot. Among Type 2 diabetics 238(85%) showed skin lesions. Here infections, xerosis, hair loss beneath the knees, diabetic dermopathy were the most frequent. Majority of patients (63%) had combination of more than one type of skin lesion. There was statistically significant correlation of skin lesions with duration of diabetes, however similar correlation could not be demonstrated regarding metabolic control.



>7 (n=208)	189(90.8%)
<7 (n=92)	56(60.8%)

Fig:1 Correlation Between HbA1C Levels And Incidence Of Skin Lesions



Fig:7 Tinea Corporis

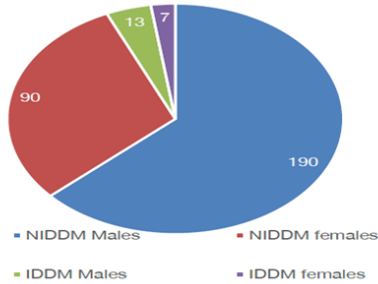


Fig:2 Sex Prevalence Of NIDDM & IDDM Cases (n=300)



Fig:8 Xeroderma

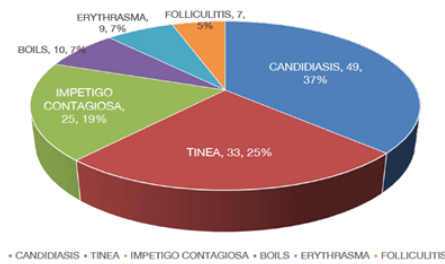


Fig:3 Infectious Skin Lesions (N=133)

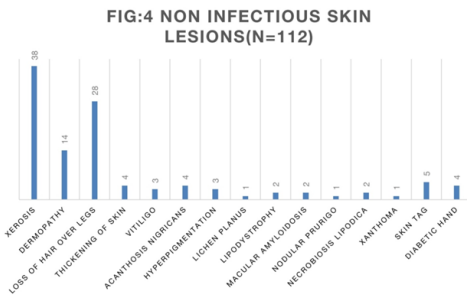


FIG:4 NON INFECTIOUS SKIN LESIONS(N=112)

DISCUSSION:

Cutaneous signs of diabetes mellitus generally appear after the primary disease has developed but may appear coincidentally with its onset, or even precede diabetes by many years. Although the mechanism for many diabetes-associated skin conditions remains unknown, the pathogenesis of others is linked to abnormal carbohydrate metabolism, other altered metabolic pathways, atherosclerosis, microangiopathy, neuron degeneration, and impaired host mechanisms. [4] Association of at least 30% of patients with diabetes mellitus with some type of cutaneous involvement was observed during the course of their chronic disease. [5],[6]

Most documented studies have shown the incidence of cutaneous disorders associated with diabetes to be between 30% and 71%. [6],[6],[7],[8] In this present study 81.6% of diabetic patients had one or more cutaneous manifestations. Mahajan *et al.*, reported cutaneous infections in 54.69% of diabetics in their study group. [8] In the present study, infections formed the largest group (54.2%). Among non infectious skin lesions, Xerosis was the most common manifestation(33.9%). Most surprisingly loss of hair over the shin was observed in 25% of cases, the underlying pathogenesis have been attributed to macroangiopathy and peripheral vascular disease. [9]

20 patients with type 1 diabetes mellitus were observed in the present work. Skin lesions were noted in 35% cases which are lesser than that documented by Pavlovic *et al.*, (68%). Fallacies are possible due to the lower number of type 1 subject in the present study. [13] The overall prevalence of lesions were found to be higher in type 2 diabetics (85% vs 35%) which corroborates with other studies where prevalence ranges from 61.2% to 85.4%. [9],[14],[15]

Our study revealed positive correlation of skin lesions with disease duration. According to a study from Saudi Arabia, for those patients having diabetes of less than 5 years' duration, the incidence of skin manifestations was 80.6%; for those having diabetes for more than 5 years, the incidence was 98%. [16]

The present study failed to show correlation between good metabolic control and skin lesions. However the mean HbA1C level was higher in patients with infective lesions (8.7 ± 1.4 in contrast to 7.2 ± 1.3).

CONCLUSION:

Dermatologic manifestation is a highly prevalent complication of diabetes mellitus which affects quality of life

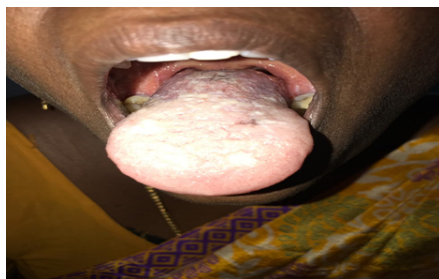


Fig:5 Oral Candidiasis



Fig:6 Seborrheic Keratosis

and adds to the heavy burden of therapeutic costs. It is found more frequently among Type 2 diabetics and increasing duration of diabetes increases the possibility of skin involvement. Impaired diabetic control as evidenced by higher HbA1C levels was found among patients with infections. However, prospective long term studies with larger number of subjects are needed to explore these issues further.

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