

Analysis of Incidence of Skin Lesions in Diabetics: An Institutional Based Study

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ABSTRACT

Background: Skin lesions are frequently observed in diabetic patients. The present study was conducted to analyze incidence of skin lesions in diabetics.

Materials & Methods: The present cross-sectional study was conducted among 200 diabetic patients over a period of 1 year. Diagnosis of diabetes mellitus was based on WHO criteria of fasting plasma glucose. Records of the patients' age, sex, fasting blood sugar, body mass index, and duration of diabetes were documented. An evaluation of the skin disease was made clinically after detailed examination. Data was analyzed using statistical package for social sciences version 21. The level of statistical significance was at $P \leq 0.05$.

Results: In the present study 200 diabetic patients were included, out of which 22% were males and 78% were females. Maximum patients were of age group 41-50 years, and 26% patients had good control on fasting blood sugar levels and 74% had poor control on fasting blood sugar levels. 75% patients had one or more type of skin lesions. Most common skin lesion in diabetic patients was Idiopathic gutate hypomelanosis (62%) followed by Superficial fungal infections (28%), diabetic dermopathy (18%), Palmo plantar hyperpigmentation (14%).

Conclusion: The study concluded that Diabetic patients often experience skin issues, with many developing multiple skin problems, the most prevalent being idiopathic guttate hypomelanosis.

Keywords: Diabetes, Fasting Blood Sugar Levels, Skin Manifestations.

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INTRODUCTION

Diabetes is a chronic condition characterized by abnormalities in insulin secretion or action, or sometimes both.¹ Diabetes is the most common endocrine disorder, affecting 8.3% of the population.² Diabetes was initially classified into two types: juvenile-onset diabetes mellitus (now known as type 1) and adult-onset diabetes mellitus (now known as type 2). This has expanded to include more than 50 subcategories caused by various pathogenic mechanisms or accompanying other diseases and syndromes.³ Skin disorders will be present in 79.2% of people with diabetes.⁴ It has been suggested that skin changes may be due to the effects of advanced glycation end products, oxidative stress and inflammation which leads to early skin aging, development of diabetic dermopathy, and scleroderma diabeticorum.⁵ According to a review [4], cutaneous manifestations of diabetes mellitus can be classified in four categories: skin diseases with strong to weak association with

diabetes (necrobiosis lipoidica, diabetic dermopathy, diabetic bullae, yellow skin, eruptive xanthomas, perforating disorders, acanthosis nigricans, oral leucoplakia, lichen planus), infections (bacterial, fungal), cutaneous manifestations of diabetic complications (microangiopathy, macroangiopathy, neuropathy) and skin reactions to diabetic treatment (sulphonylureas or insulin).⁶ Cutaneous manifestations in DM are classified according to the following: vascular damage, neurological damage, infections, obesity and hyperlipidemia related, treatment related skin manifestations, disease associations and miscellaneous conditions.⁷ The present study was conducted to analyze incidence of skin lesions in diabetics.

MATERIALS & METHODS

The present cross-sectional study was conducted among 200 diabetic patients over a period of 1 year. Ethical approval and

informed consent were obtained from the ethical committee of the institute and respondents respectively before commencement of the study. Diagnosis of diabetes mellitus was based on WHO criteria of fasting plasma glucose of >7 mmol/l (126 mg/dl) and or random plasma glucose >11.1 mmol/l (200 mg/dl) on at least two occasions. Good control was fasting plasma glucose of < 6 mmol/l and poor control was fasting plasma glucose of >6 mmol/l. Records of the patients' age, sex, fasting blood sugar were documented. An evaluation of the skin disease was made clinically after detailed examination. Data was analyzed using statistical package for social sciences version 21.

RESULTS

In the present study 200 diabetic patients were included, out of which 22% were males and 78% were females. The maximum patients were of age group 41-50 years, and 26% patients had good control on fasting blood sugar levels and 74% had poor control on fasting blood sugar levels. 75% of patients had one or more types of skin lesions.

Most common skin lesion in diabetic patients was Idiopathic gutate hypomelanosis (62%) followed by Superficial fungal infections (28%), diabetic dermopathy (18%), Palmo plantar hyperpigmentation (14%).

Table 1: Clinical and Demographic Characteristics of Diabetics patients

Variable	n (%)
Gender	
Male	44(22%)
Female	156(78%)
Age groups(years)	
21-40	46(23%)
41-60	104(52%)
61-80	50(25%)
FBS (mmol/l)	
<6	52(26%)
>6	148(74%)

Table 2: Types of skin lesions and its prevalence among diabetic patients

Type of skin lesion	n (%)
Idiopathic gutate hypomelanosis	124(62%)
Superficial fungal infections	56(28%)
Diabetic dermopathy	36(18%)
Palmo plantar hyperpigmentation	28(14%)
Pruritus	26(13%)
Xerosis	20(10%)
Dermatosis papulosa nigra	15(7.5%)
Ichthyosis	7(3.5%)
Diabetic thick skin	6(3%)
Atopic dermatitis	8(4%)
Pincer nails	6(3%)
Vitiligo	4(2%)
Calluses	2(1%)
Furuncles	4(2%)
Koilonychia	2(1%)
Warts	2(1%)
Acne keloidalis nuchae	2(1%)
Ulcer	2(1%)
Acanthosis nigricans	2(1%)
Melasma	3(6%)
Terrys nails	4(2%)
Skin tag	2(1%)
Eruptive xanthomas	2(1%)
Melanonychia	4(2%)

DISCUSSION

Cutaneous changes in diabetics may precede or appear at the time of diagnosis of diabetes mellitus. Some of these lesions are strongly associated with diabetes mellitus; such lesions include diabetic dermopathy, diabetic bullae, and necrobiosis lipoidica. On the other hand, some other skin changes observed in people living with diabetes are associated with infection.^{5,8-10}

In the present study 200 diabetic patients were included, out of which 22% were males and 78% were females. The maximum patients were of age group 41-50 years, and 26% patients had good control on fasting blood sugar levels and 74% had poor control on fasting blood sugar levels. Most common skin lesion in diabetic patients was Idiopathic guttate hypomelanosis (62%) followed by Superficial fungal infections (28%), diabetic dermopathy (18%), Palmo plantar hyperpigmentation (14%).

In a study on the cutaneous symptoms of diabetes mellitus, Furqan S et al., discovered that skin infections were the most common finding, occurring in 29.7% of patients.

Chatterjee N et al., in their observational study of cutaneous manifestations in diabetes mellitus in a tertiary care hospital in Eastern India found infections to be the largest group (40.9%).

In a study by Abhishek et al.,¹³ he noted that 80% of the 100 diabetics studied had more than one form of skin lesion. Similar studies from Nigeria by Onunu¹⁴ and Ezejiofor et al.¹⁵ both in the tropical rain forest region of Nigeria reported prevalence rates of 63.2% and 73%, respectively.

Romano G et al found that Thirty-five of 64 IDDM patients (54%) had skin alterations mainly consisting of vitiligo (9% of all patients), psoriasis (9%) and eczema (8%). The most frequent skin lesions observed in 240/393 NIDDM subjects (61%) were represented by infections (20% of all patients) and diabetic dermopathy (12.5%), while other lesions were not common.⁵

CONCLUSION

The study concluded that Diabetic patients often experience skin issues, with many developing multiple skin problems, the most prevalent being idiopathic guttate hypomelanosis.

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