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Original ARTICLE

Evaluation of cutaneous manifestation in diabetes patients in a Tertiary Health Care Centre

Kshama Talwar¹, Ankur Talwar²

^{1,2}Assistant Professor, Department of Dermatology, Hind Institute of Medical Sciences Safedabad Barabanki U.P., India

ABSTRACT

Background: Diabetes is the most common endocrine disorder, affecting 8.3% of the population. The present study was conducted to determine cutaneous manifestation in diabetes patients. **Materials & Methods:** The present study was conducted on 204 cases of diabetes patients of both genders reported to the department. Various types of skin lesions and duration of diabetes mellitus were recorded. **Results:** Out of 204 patients, males were 120 and females were 84. Xerosis was seen in 54, diabetic dermopathy in 24, skin tags in 20, infection in 36, seborrheic keratosis in 8, Acanthosis nigricans in 12, nail changes in 16, diabetic rubeosis in 8, lipodystrophy in 4 and diabetic bullae in 22. The difference was significant ($P < 0.05$). **Conclusion:** Common skin lesions in diabetes patients are xerosis, diabetic dermopathy, skin tags, seborrheic keratosis, Acanthosis nigricans, nail changes, diabetic rubeosis, lipodystrophy and diabetic bullae. Dermatologists play an important role in reducing morbidity and in improving the quality of life of diabetic patients.

Key words: Diabetes, Diabetic dermopathy, Seborrheic keratosis

Corresponding author: Dr. Ankur Talwar, Assistant Professor, Department of Dermatology, Hind Institute of Medical Sciences Safedabad Barabanki U.P., India

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INTRODUCTION

Diabetes is the most common endocrine disorder, affecting 8.3% of the population. Diabetes mellitus affects individuals of all ages and in all socio-economic segments of the population.

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 rise to 101.2 million by the year 2030. WHO suggest that the number of diabetic subjects would increase to 80 million by the year 2030 in India. Skin lesions are frequently observed in diabetic patients and about 30% of diabetics have cutaneous disorders.² Skin disorders will be present in 79.2% of people with diabetes.³ Individuals with type 2 diabetes are more likely than those with type 1 diabetes to develop cutaneous manifestations. Cutaneous disease can appear as the first sign of diabetes or may develop at any time in the course of the disease. The cutaneous signs of diabetes are the manifestations of multiple factors. There are many proposed patho-mechanism for skin involvement in DM, which includes abnormal carbohydrate metabolism, other altered metabolic pathways, atherosclerosis, microangiopathy, neuron degeneration and impaired host immune mechanism.⁴ Although some cutaneous reactions are secondary to

treatment, simple skin manifestation may be the first clue to an underlying deadly disease not less than diabetes. This has stimulated interest to all diabetic care providers, inclusive of dermatologists for development of an early detection system for markers of DM, of which skin is a vital organ and which demands due honor in the work up list in connection with diabetes mellitus.⁵

However, a large-scale study in Indian population aiming at finding out the correlation of the skin manifestations with complication of DM is lacking till date. The present study was conducted to determine cutaneous manifestation in diabetes patients.

MATERIALS & METHODS

The present study was conducted in the department of Dermatology, Hind Institute of Medical Sciences Safedabad Barabanki U.P., India. The study was approved from the institutional ethical committee. All were informed regarding the study and written consent was obtained. It comprised of 204 cases of diabetes patients of both genders reporting to the department. Data such as name, age, gender etc. was recorded. Detailed clinical history followed by general physical examination, systemic examination and mucocutaneous examination was done

in all. Various types of skin lesions and duration of diabetes mellitus were recorded. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I shows that out of 102 patients, males were 60 and females were 42. Table II shows that xerosis was seen in 54, diabetic dermopathy in 24, skin tags in 20, infection in 36, seborrheic keratosis in 8, Acanthosis nigricans in 12, nail changes in 16, diabetic rubeosis in 8, lipodystrophy in 4 and diabetic bullae in 22. The difference was significant (P< 0.05).

Table I Distribution of patients

Total- 204		
Gender	Males	Females
Number	120	84

Table II Type of cutaneous lesions

Lesions	Number	P value
Xerosis	54	0.01
Diabetic dermopathy	24	
Skin tags	20	
Infection	36	
Seborrheic keratosis	8	
Acanthosis nigricans	12	
Nail changes	16	
Diabetic rubeosis	8	
Lipodystrophy	4	
Diabetic bullae	22	

DISCUSSION

Skin manifestations are seen frequently in diabetes mellitus and sometimes may signal the onset of this disorder. Without the control of diabetes mellitus, the mucocutaneous manifestations are often intractable. Diabetes mellitus (DM) wreaks havoc all over the body, and the skin is not exempted from the attack. Cutaneous signs of diabetes mellitus are extremely valuable to the clinician. They generally appear after the primary disease has developed but may signal or appear coincidentally with its onset, or even precede diabetes by many years.⁶ Insulin affects the utilization of glucose in skin and is required for growth and differentiation of keratinocytes and fibroblasts. The condition of skin has long provided clues to the presence of diabetes. This includes frequent infections, dryness, nonspecific pruritus etc. In the last few years

many new associations between diabetes mellitus and the skin have been noted and we have a better understanding now of the pathophysiology of some diabetic complications.⁷

Microcirculatory alteration, glycosylation of different proteins with production of advanced glycosylated end product and their subsequent deposition in the basement membrane and alterations in the lipid profile results in changes of the skin condition of diabetic patients. Diabetes also alters endothelial functions.⁸ The present study was conducted to determine cutaneous manifestation in diabetes patients.

In this study, out of 204 patients, males were 120 and females were 84. In a study among 750 patients with diabetes it had been observed that the most common skin manifestations were cutaneous infections (47.5%), xerosis (26.4%), and inflammatory skin diseases (20.7%).⁹

Present study showed that xerosis was seen in 54, diabetic dermopathy in 24, skin tags in 20, infection in 36, seborrheic keratosis in 8, Acanthosis nigricans in 12, nail changes in 16, diabetic rubeosis in 8, lipodystrophy in 4 and diabetic bullae in 22. Thappa¹⁰ found that sixty consecutive subjects with diabetes mellitus having dermatological manifestations were selected. Bacterial infections were the commonest dermatological disorder (46.7%). Different forms of dermatophyte infections and candidiasis were found in 30% and 23.3% subjects, respectively. Diabetic dermopathy or ‘shin spot’ and diabetic foot with gangrenous changes were found in 20% and 13.3% subjects, respectively. Skin manifestations associated with diabetes were the second most common skin disorders and constituted 43.3%. Pruritus of unknown origin and xerosis (13.3%) were the most common cutaneous abnormalities in the group associated with diabetes. Other cutaneous manifestations, namely pigmented purpuric dermatosis (6.6%), psoriasis (3.3%), vitiligo (6.6%), lichen planus (3.3%), porokeratosis (3.3%), sclerosis, diabetic thick skin and contracture (6.6%), lipodystrophy (3.3%), skin rashes (6.6%) and scar with abscess (1.6%), were very rare.

Baidya et al¹¹ evaluated the prevalence of skin manifestations in patients with diabetes mellitus. One hundred consecutive patients with the diagnosis of diabetes mellitus and having skin lesions, either attending the diabetic clinic or admitted in medical wards were included in this study. The common skin disorders were: Xerosis (44%), diabetic dermopathy (36%), skin tags (32%), cutaneous infections (31%), and seborrheic keratosis (30%). Bossen¹² found that cutaneous infections were seen in 31% of patients. Fungal infections were seen in 16% of the patients (9% had candidal and 7% had dermatophytosis). Bacterial infections were seen in 15% of the patients. It is widely believed that diabetic patients have an increased risk for infectious diseases.

Low percentage of diabetic bullae may be because the condition usually goes under-diagnosed as it may heal spontaneously in diabetics who do not seek medical attention. Yosipovitch et al. and Sawhney et al. also observed that majority of the patients with cutaneous lesions in their respective studies were under poor glycemic control.^{13,14}

However, prospective long term studies with larger number of subjects are needed to explore these issues further.

CONCLUSION

Common skin lesions in diabetes patients are xerosis, diabetic dermopathy, skin tags, seborrheic keratosis, Acanthosis nigricans, nail changes, diabetic rubeosis, lipodystrophy and diabetic bullae. Although in most cases, cutaneous conditions usually develop

following the diagnosis of diabetes, in some these are the first presenting signs and help in the early diagnosis of diabetes. Thus, dermatologists play an important role in reducing morbidity and in improving the quality of life of diabetic patients.

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