

A Study of skin manifestations in type 2 diabetes mellitus

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Abstract

Background: It is estimated that 30% of patients with diabetes mellitus will experience a skin problem at some stage throughout the course of their disease. Several skin disorders are more common in diabetic patients, particularly those due to infection such as candida and impetigo. Patients with type 2 diabetes also have twice the risk of developing the common scaly disease, psoriasis, as non-diabetics. This study is a sincere effort to study the skin lesions in Diabetes Mellitus.

Aims and Objectives: To study the skin lesions in Diabetes Mellitus.

Methods: Three hundred seventy seven patients were included for the study.

Results: A surprising 54.64 percent of the patients complained of some skin manifestations and the fungal infections were seen in majority of the cases.

Conclusion: Skin lesions in diabetics are fairly common and utmost care has to be taken to immediately identify and treat accordingly.

Keywords: Skin manifestation, diabetes, cross sectional

Introduction

It is estimated that 30% of patients with diabetes mellitus will experience a skin problem at some stage throughout the course of their disease. Several skin disorders are more common in diabetic patients, particularly those due to infection such as candida and impetigo. Patients with type 2 diabetes also have twice the risk of developing the common scaly disease, psoriasis, as non-diabetics. Diabetes Mellitus is a dynamic disease. No systems in the body are spared from its tentacles. It's a metabolic disorder which affects all the system in the body. Globally around 170 million cases was the prevalence which may double in the year 2030 according to estimates. The prevalence will rise in the developed countries and it is said that even the developing nations it is going to rise ^[1]. As mentioned before it can involve and cause pathology of any organ, so skin is also quite often affected by this. It can be affected either by metabolic derangements which happens acutely or due to chronic immune derangements There are a few classifications also which are available ^[2, 3]. The skin lesions pave the way for diagnosis of the disease and in others skin lesions occurs after a long time after the disease initiates. The carbohydrate metabolism is more often affected and as a result the blood sugar arises and because of this there are more chances of infections or in later stages of the disease the immune system also gets compromised and this can also lead to several secondary infections. This This study is a sincere effort to study the skin lesions in Diabetes Mellitus and it can be influenced by external environmental factors and thus it becomes very important to know the common varieties of lesions in the different geographical areas.

Aims and Objectives

To study the skin lesions in Diabetes Mellitus.

Materials and Methods

The study was done in the Department of Dermatology in association and permission from the Department of Dermatology, Kanachur Institute of Medical Sciences, Mangalore.

The study was done from September 2018 to October 2018.
One hundred twenty patients were included for the study.

Inclusion criteria

Only confirmed diabetics were considered for the study.

Exclusion criteria

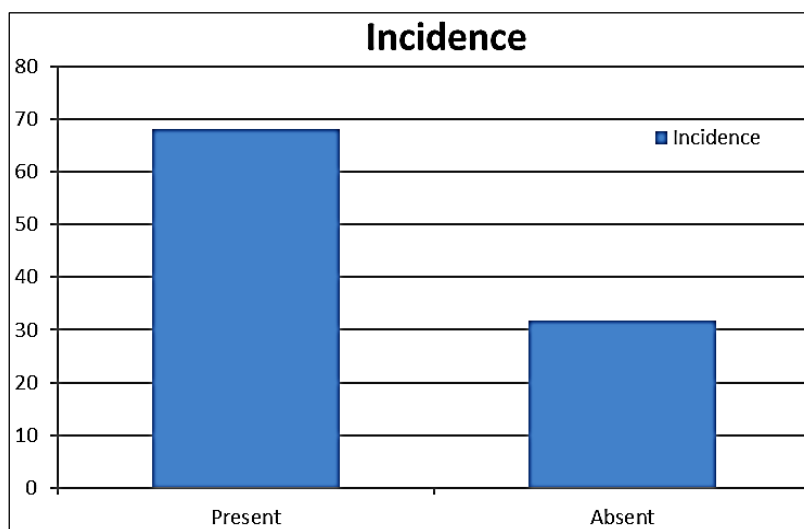
Subjects on steroid therapy and also known hyperglycaemic drugs.

All the subjects who were known diabetics who attended the OPDs in the Department of Medicine and also who came especially for the skin problems in the Department of Pathology were considered for the study. After taking thorough history, the patient was asked for any skin lesions. Family history, past history, personal history, history of medications, duration of the disease, duration of onset of the skin lesion was also asked for. Any complaints would be noted and have been reported. A complete set of physical examination was done to find out any skin lesions if the patients would not know. The eye and also nervous system examination was also done.

Results

Table 1: Incidence

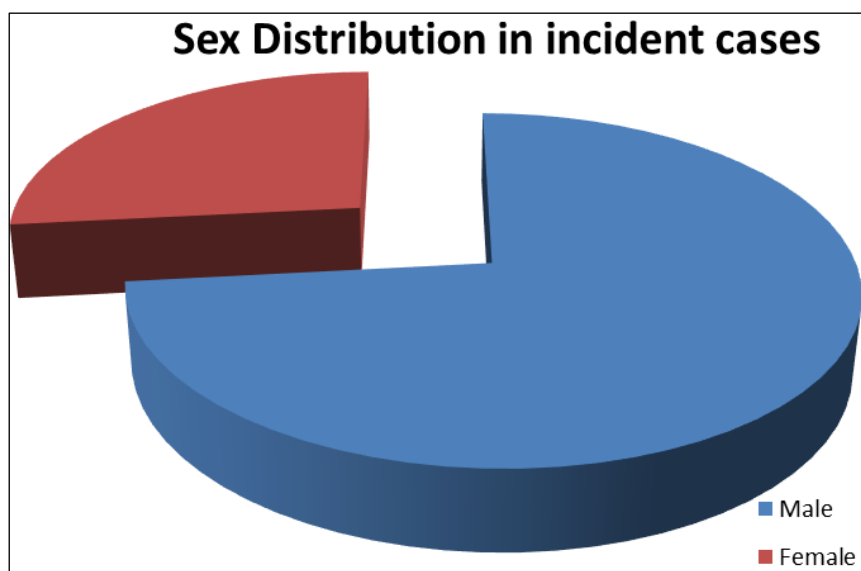
Total	Incidence
120	61.18 percent



Graph 1: Incidence

Table 2: Mean age of the subjects

Mean age	Std Deviation
51.38 years	±6.38 years

**Graph 2:** Sex Distribution**Table 3:** Skin Manifestations

Dry skin-xerosis	41
Fungal	38
Diabetic Dermopathy	61
Cellulitis	18
Furuncles	38
Angular Stomatitis	3
Urticaria	38
Acanthosis nigricans	47
Foot ulcer	09
Skin tag	17
Eczema	47
Seborrheic dermatitis	38
Loss of hair over the legs	21
Bacterial infections	37

Discussion

It is quite difficult to find out at what stage the patient is encounters the skin lesions. They may get it totally early in the disease or it may be seen at a later date. It may be caused as a result of the metabolic disorder in the early stages or as a result of immunological compromise. The skin lesions may be also secondary to defects in lipid metabolism, vasculopathies and also neurological deficits as reported by many other studies ^[4, 5]. It is a known fact that as the disease advances, many more complications get added to the present ones and the skin infections also tend to increase ^[6]. As the age of the patient advances more the chances of skin lesions. These probably are because of further accumulation of metabolic products due to deranged metabolic reactions in the body ^[7]. Skin tags and acanthosis nigricans are also presented in majority of the cases ^[8]. Infact there are studies which indicated these as a diagnostic criteria and markers for diabetes ^[9]. Some skin infections that

are commonly encountered in vasculopathies are microangiopathies, rubeosis etc. In diabetic neuropathies ulcers and bacterial infections are very common. Staph infections and pseudomonal infections are very commonly encountered. Fungal infections like candida are very commonly seen. They may occur very late in the disease and may be due to immunosuppression. Pruritis, skin tags, acanthosis nigricans can be seen especially in obese patients. This study puts in an effort to find the commonly occurring co-infections in diabetics. This would be very useful to practising dermatologists of this particular

geographical location.

Conclusion

This study was intended to shed some light on commonly existing skin co-infections which would be very helpful in practising dermatologists.

References

1. Wild S, Roglic G, Green A, *et al.* Global prevalence of diabetes estimates for the year 2000 and projections for 2030. *Diabetes Care.* 2004;27(5):1047-1053.
2. Bhat YJ, Gupta V, Kudyar RP. Cutaneous manifestations of diabetes mellitus. *Int J Diab Dev Ctries.* 2006;26:152-155.
3. Huntley AC. The cutaneous manifestations of diabetes mellitus. *J Am Acad. Dermatol.* 1982;7(4):427-455.
4. Romano G, Moretti G, Di Benedetto A, *et al.* Skin lesions in diabetes mellitus: prevalence and clinical correlations. *Diabetes Res Clin Pract.* 1998;39(2):101-106.
5. Perez MI, Kohn SR. Cutaneous manifestations of diabetes mellitus. *J Am Acad. Dermatol.* 1994;30(4):519-531.
6. Mahajan S, Koranne RV, Sharma SK. Cutaneous manifestation of diabetes mellitus. *Indian J Dermatol Venereol Leprol.* 2003;69(2):105-108.
7. Sasmaz S, Buyukbese M, Cetinkaya A, *et al.* The prevalence of skin disorders in type-2 diabetic patients. *The Internet Journal of Dermatology.* 2004;3(1):1-4.
8. Kong AS, Williams RL, Rhyne R, *et al.* Acanthosis nigricans: high prevalence and association with diabetes in a practice-based research network consortium-A primary care Multi-Ethnic Network (PRIME Net) study. *Journal of the American Board of Family Medicine.* 2010;23(4):476-485.
9. Kahana M, Grossman E, Feinstein A, *et al.* Skin tags: a cutaneous marker for diabetes mellitus. *Acta Dermatol Venereol.* 1987;67(2):175-177.