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## The Pattern of Skin Lesion in a Sample of Iraqi Diabetic Patients

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### Abstract:

Five hundred thirty two diabetic patients were studied during a period of 3 years their ages ranged between 11-74 years with a mean age of 37.8 years. The male: female ratio was 1.5:1. The diabetes in 186 patients (34.9%) was of insulin dependant type while in the remaining 346 patients (65.1%) the disease was of non-insulin dependant variety. The duration of the disease among our patients varied from six months to 19 years.

The skin lesions were detected in 294 (55.3%) of the patients. The dry scaly skin with exaggeration of normal markings and variable degree of hair loss particularly affecting the skin of the lower Limbs, in addition to shin spots and increased susceptibility to various infections were the commonest skin lesions reported in the patients.

The occurrence of skin lesions in diabetic patients was found to be proportional to the duration, type and the state of the control of the disease.

In conclusion, skin should not be forgotten as a common site for long term diabetic complication.

**Key Words:** skin lesion, diabetes mellitus

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### Introduction

Diabetes is the most common endocrinal disease that is characterized by metabolic abnormalities and long-term complication involving the eyes, kidneys, nerves, blood vessels and skin<sup>[1]</sup>.

Wide varieties of skin lesions have been described to be induced by or associated with diabetes mellitus. These lesions are broadly classified into the following groups<sup>[2]</sup>.

1-Those due to vascular abnormalities as diabetic dermopathy "shin spots", erysipelas like erythema and diabetic rubeosis.

2-Those due to peripheral neuropathy as diabetic neuropathic ulcer.

3- Increased susceptibility to various cutaneous infections.

4-Various skin disorders associated with diabetes mellitus as necrobiosis lipodica, idiopathic bullae, vitiligo and pruritis.

5-Drugs induced skin lesions.

In this study we try to find out the pattern of skin lesions among a sample of Iraqi diabetic patients.

**Patients & Methods:**

A total of 532 diabetic who were admitted or consulted the out patient medical and dermatology departments of the Teaching Hospital during a period of 3 years "1999-2001" was studied.

All patients were interviewed and inquired about the onset and the duration of their diabetes, the type of their treatment, history of previous hospitalization and causes of that admission. In addition, they were asked about any possible complications. The patients were fully examined and the state of the diabetes was evaluated by estimation their fasting blood sugar, urine sugar and ketone bodies and for any evidence of long term diabetic complication. Furthermore, their skin was examined for any evidence of skin lesions that were biopsied in suspicious cases to confirm the diagnosis by histopathological examination.

Those patients who attended the hospital for regular periodic examination were followed up for any evidence of new lesions and reassessment.

### Results:

A total of 352 diabetes patients were studied during period of three years, their ages ranged between 11-74 years with a mean age of 37.8 years. They were 324 males and 208 females with an M/F ratio 1.5: 1.

The diabetes in 186 (43%) was of insulin dependant type while in the remaining 346(65.1%) patients, the disease was of non-insulin dependant variety (Table-1- ). The duration of the disease of all types among the patients varied from six months to 19 years.

**Table-1. The distribution of cases according to the type of diabetes.**

Type of diabetes.	IDDM No.	%	NIDDM No.	%
	186	34.9	346	65.1

The skin lesions were detected in 294 (55.3%) of the patients. As shown in table-2-, the dry scaly skin

with exaggeration of normal skin markings and variable degree of hair loss particularly affecting

the lower limbs was the commonest skin changes in young and elderly diabetic patients as it was reported in 187 of the cases (63.6%) followed in order of frequency by "shin spots" (48.6%), various skin infection (38.4%) and prurities in 20.7% of the cases.

On assessing the factors that affect the occurrence of skin lesions in diabetic patients, the duration of the disease was found to be the most important factor as skin lesions were detected in 69.7% of patients who

were known to be diabetics for more than 3 years. In addition, 157 patients (53.4%) who have skin lesions were insulin dependent ones. (Table-3) shows that insulin dependent diabetics were showing skin lesions (53.4%) significantly more than the non- insulin dependent patients (46%). Furthermore, 69(23.5%) of patients whose diabetes was poorly controlled were presented with skin lesions.

**Table-2 the distribution of skin lesions according to type and number of patients affected.**

skin lesions	No. of patients	%
Dry asteotic scaly skin	187	63.6
Shin spots	142	48.6
Bacterial infections of all type	113	38.4
Pruritis (generalized & localized)	61	20.7
Diabetic bullae	20	6.8
Drug induced (hypertrophy, trophy & nonspecific)	17	5.8
Diabetic ulcer	11	3.7
Necrobiosis lipodica	9	2.4
Associated lesions (vitiligo, G.A. & E. xanthoma)	12	4.1
Erysipelas like lesion	2	0.6
Diabetic rubosis	1	0.3

**N.B. More than one lesion may be seen in the same patients.**

**Table-3. The distribution of skin lesions according to type of diabetes.**

skin lesions	IDD	N.IDD	Total
Present	157(102.8)	137(191.2)	294
Free	29(83.2)	209(154.8)	238
Total	186	346	532

$\chi^2 = 98.2$   $P < 0.001$

Skin infections, among all other skin lesions detected in diabetics patients included in this study, were found to be strongly related to the control of the disease. The infections in the majority of the poorly controlled diabetic patients were more severe, recurrent, long standing and required doses of antimicrobial agents for longer period of time.

**Discussion:**

In this study the skin was shown to be a common site for long term diabetic complications as skin lesions were detected in 55.3% of the diabetic patients, which is equal or probably

higher than the incidence of more serious complications as diabetic nephropathy which was reported to range between 35-60% of the cases<sup>[1]</sup>. Unfortunately we could not find similar studies the incidence of diabetic skin lesions to compare our results with.

The dry scaly asteotic skin changes that were detected in 63.6% of the patients as the commonest skin lesions in diabetics is not clearly mentioned in other studies [3]. It possibly caused by peripheral neuropathy with resulting decreased sweating and/or associated atherosclerotic changes, so that limbs, in particular, are the commonest sites where

these changes are remarkably evident. The possibility that these changes are a feature of senility is excluded by the fact that the mean age of our patients was 37.5 years, in addition, the changes were seen among young and elderly diabetics.

The frequency of shin spot<sup>2</sup> active or healed "in this study was (48.6%) which is compatible with that reported in other studies (42%-50) [3,7,8].

Various skin infections were detected in 38.4% of the patients which is compatible with the results of the other studies [5,8]. The increased susceptibility to various skin infections is multifactorial. It is probably due to increased glucose tissue level [1], and altered leucocytes functions in addition to other immunological deficit [1,9,10,11,12]. The later possibilities explain why skin infections, apart from other skin lesions, are strongly related to the control of the disease where the glucose tissue level and immunological deficit are supposed to be highly disturbed.

Pruritis, localized and generalized, was a feature in 20.7% of the patients which is consistent with that of other studies [1,3,8,13].

The well known skin lesions, necrobiosis lipodica, were reported in 2.4% of the patients only which is higher than that reported in other studies ranging between 0.3-1 percent [2,8,13].

Lastly, the study showed that the duration of the disease, insulin dependence and poor control were the major factors determining the frequency occurrence of skin lesions in diabetics, but as type 1-insulin dependant diabetics, usually starts early, so stay longer, in addition to its increased liability for more complications and poor control, one may think that skin lesions are possibly more common among this group, although this is not always true, as the lesions were seen in 46.4% of non-insulin dependant diabetics.

In conclusion, skin should not be forgotten as a common site for long term diabetic complications that may threaten the patient's life.

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