

Cutaneous manifestations of diabetes mellitus in Iraqi patients

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الخلاصة

يعتبر مرض السكري من امراض العصور والتدثر على عدد من الاجهزة العضوية بالجسم ويعتبر الجلد احد هذه الانسجة التي تتأثر بمدى السكر المرتفع بالدم. والي 30 من مرضى السكري يعانون من مشاكل جلدية مختلفة. الدراسة في مستشفى في الصدر التعليمي في محافظة النجف للارف ومستشفى السماوة العام في محافظة المثنى في الفترة الواقعة ما بين كانون الثاني 2005 الى اذار 2010 وذلك باخذ 100 مريض بداء السكر 60 مريض من الذكور و40 اناث. 62% المرضى يعانون من داء السكري ذي النوع الاول الذي يعتمد على الانسولين في العلاج و38% يعانون من النوع الثاني الذي يعتمد على الاقراص لتتنشيط افراز الانسولين في هذه الدراسة ان الاعراض الجلدية العصبية الجلدية كانت بنسبة 32,43% من المرضى، اشد يوعاه وجفاف الجلد وتساقط الشعر والتغيرات الوعائية الدموية كانت بنسبة 14,86% من اكثرها اشد يوعاه واء تلال الجلد والسكري كوليبيلى الفزيول وجي الشحم الالتهابات الفيروسية والبكتيرية والفطريات بنسبة 20,7%. اعفات الجلدية للعلاج كانت بنسبة 10,36% اهمها المضاعفات المصاحبة لحقن الانسولين مثل الضمور الشحمي. هذا كما ان مرضى جلدية متفرقة بنسبة 21,62% اهمها الحكة الجلدية. من هؤلاء نسبة تنتج ان مرضى السكري يمكن ان يؤثر على سلامة وصحة الجلد وان الاعراض الجلدية تكون شائعة لدى مرضى السكري من كلا النوعين.

Abstract

Objective:- To evaluate the incidence and types of cutaneous manifestations in diabetic patients in Iraq.

Patients and methods:- One hundred diabetic patients attended the department of dermatology and venereology was evaluated. Sixty of them were male and 40 female. Sixty two percent of them had type I and 38% had type I diabetes mellitus I.

Result: - Neuropathic cutaneous lesions were found in 32.43% of patients. Dryness of the skin and hair loss being the commonest. Vascular skin lesions were 14.86 %, diabetic dermopathy and necropiosis lipodica constitutes the highest percent.

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Cutaneous infections occurred in 20.7% weather bacterial or monilial infection. Drug eruptions were 10.36%, commonly complicate insulin therapy. Other miscellaneous skin lesions appeared in 21.62%. Purities were the commonest.

Conclusion: - Diabetic skin manifestations are not uncommon in both types of diabetes mellitus.

Introduction

Diabetes mellitus is a heterogeneous group of metabolic disorders with elevated blood sugar and shared variety of multisystemic complications mainly angiopathy, retinopathy, neuropathy and skin complications^(1, 2). Two distinguished types of diabetes mellitus are recognized:

- 1- Type I- insulin dependent diabetes mellitus (IDDM) with abrupt onset of symptoms, tendency for ketoacidosis and lack of C-peptide production⁽³⁾.
- 2- Type II- non insulin dependent diabetes mellitus (NIDDM) lack of ketoacidosis, C-peptide production and tendency for obesity with improvement following weight reduction⁽³⁾.

Dermatological problems are common in diabetes, with approximately 30% of patients experiencing some cutaneous involvement during the course of their illness. Skin manifestations generally appear during the course of disease in patients known to have diabetes, but they may also be the first sign of diabetes or even precede the diagnosis by many years^(4, 5).

Cutaneous manifestations in diabetics can be grouped as angiopathy, neuropathy, infectious, drug eruptions and others⁽¹⁻³⁾. Diabetic angiopathy is characterized by proliferation of endothelial cells and deposition of PAS positive material in the basement membrane of arterioles, capillaries and venules with decreased luminal area⁽⁶⁾. Diabetic angiopathy includes diabetic dermopathy, necrobiosis lipodica diabetorum, wet gangrene, bullous diabetorum and diabetic rubiosis. Neuropathic cutaneous lesions include perforating ulcer, dependent edema, hair loss and dryness of skin. The most common cutaneous infection is Staphylococcal, monilial and foot infection⁽⁷⁾.

Drug eruptions include diabetic lipoatrophy, diabetic lipohypertrophy, maculopapular rash and disulfiram like reaction⁽⁸⁾. Pruritis, scleredema and joint contracture, vitiligo, Haemochromatosis, xanthelasma, Dupuytren contractures, alopecia areata and psoriasis can also occur in diabetes mellitus^(9, 10).

Patients and methods

A total of one hundred diabetic patients (both type I and type II diabetes) attended the department of Dermatology and Venereology at Al-Sader teaching Hospital in Al-Najaf Al-Ashraf government and Al-Samawa General hospital in Al-Muthana government in the period between January 2005 to March 2010. Forty seven patient from Al-Sader teaching Hospital in Al-Najaf and fifty three patients from Al-Samawa General hospital. Sixty male and forty female patients ranging in age between 16-73 years with a mean of 42.6 years were studied. All patients were already proved to have diabetes by frequent investigations and follow-up from their physicians'. Data was abstracted from the patients by questionnaire and examination. The age and sex of the patients, type and duration of diabetes, type of cutaneous lesions and type of therapy were recorded. One patient might have more than one type of cutaneous lesions.

Obtained data were analyzed by chi-square and $P < 0.05$ was considered significant.

Results

This study compromised one hundred diabetic patients. Sixty male and forty female, their age ranged from 16-73 years with a mean of 42.6 years. The distribution of different types of skin lesions in the patients showed in table 1. Neuropathic cutaneous lesions were the most common type and included in 72 lesions (32.43%), of which dryness of skin and hair loss were the commonest type (64.12%). Vascular skin lesions occurred in 33 lesions (14.86%), of which diabetic dermapathy, wet gangrene and necrobiosis lipodica diabeticorum were the commonest type (78.8%).

Five cases of wet gangrene were from inpatients and three cases from outpatient clinic. Cutaneous infection occurs in 46 lesions (20.72%), bacterial cutaneous infection in form of carbuncle, folliculitis, cellulitis and sty occurred in (53.2 %), while fungal and monilial infection in (46.6%).

Drug eruptions occurred in 23 lesions (10.36%) of cases, 56.5% of these lesions were in form of lipid hypertrophy and lipid atrophy.

Pruritis, vitiligo, alopecia, psoriasis, localized scleredema, xanthelasma, and haemochromatosis were other miscellaneous cutaneous manifestations noticed in our study in 21.62% of cases.

The relationship between cutaneous lesions and type of diabetes had been showed in table 2. Sixty two patients had IDDM and 38 patients had NIDDM, all types of skin lesions were seen more commonly in IDDM rather than NIDDM. The difference was statistically significant. $P < 0.05$.

Table 3 shows sex distribution of cutaneous lesions of diabetes mellitus, although male patients have more incidences of cutaneous problems than female patients, the difference was statistically not significant.

Table 4 shows the relation between disease duration and types of cutaneous lesions. The longer the duration of diabetes the higher the incidence of variable skin lesions, however; this was statistically not significant.

Table 1:- Different types of skin lesions in diabetic patients.

Types of Skin lesions	No. of cases	%	Cutaneous lesions	No. of cases	%
Vascular	33	14.86	Wet foot gangrene	8	3.60
			Diabetic rubiosis	4	1.80
			Diabetic dermopathy	11	4.95
			Necrobiosis lipodica	7	3.15
			Idiopathic bullae	3	1.35
Neuropathic	72	32.43	Perforating ulcer	10	4.50
			Dependent edema	15	6.75
			Hair loss	22	9.90
			Dryness of skin	25	11.26
Infections	46	20.7	Folliculitis	8	3.60
			Cellulitis	5	2.25
			Style	4	1.80
			Interdigital moniliasis	14	6.30
			Oral thrush	7	3.15
			carbuncle	8	3.60
Drug eruptions	23	10.36	Phototoxic reaction	2	0.90
			Maculopapular rash	3	1.35
			Lipid atrophy	6	7.70
			Lipid hypertrophy	7	3.15
			urticaria	5	2.25
Others	48	21.62	Vitiligo	5	2.25
			Alopecia	1	0.45
			Pruritus	25	11.26
			Scleredema	4	1.80
			Psoriasis	2	0.90
			Xanthelasma	9	4.05
			haemochromatosis	2	0.90

Table 2:- Relationship between cutaneous lesions and type of diabetes.

Types of cutaneous lesion	IDDM (62%)	NIDDM (38%)
Vascular	29 (46.7%)	4 (10.5%)
Neuropathic	43 (69.3%)	29 (76.3%)
Skin infection	24 (38.7%)	22 (57.8%)
Drug eruptions	15 (24.2%)	8 (21.1%)
Others	28 (45.2%)	20 (52.6%)

P value < 0.05

Table 3:- Relationship between cutaneous lesions and sex of patients.

Type of cutaneous lesion	Male N=60	Female=40
Vascular	24 (40%)	9 (22.5%)
Neuropathic	46 (76.6%)	26 (65%)
Skin infection	25 (41.6%)	21 (52.5%)
Drug eruptions	17 (28.3%)	6 (15%)
Others	26 (43.3%)	22 (55%)

P value >0.05

Table 4:- Relationship between disease duration and cutaneous lesions.

Duration of illness	Vascular lesions	Neuropathic lesions	Skin infection	Drug eruption	Others
1-4 years	1(3.1%)	15 (20.8%)	9(19.5%)	3 (13.1%)	9(18.7%)
5-9 years	6(18.2%)	13 (18.1%)	11(23.9%)	6 (26.1%)	18(37.5%)
10-14 years	11(33.3%)	21 (29.2%)	14(30.4%)	9 (39.1%)	10(20.8%)
> 15 years	15(45.4%)	23 (31.9%)	12(26.1%)	5 (12.7%)	11(22.9%)
Total	33(100%)	72 (100%)	46(100%)	23 (100%)	48(100%)

P value >0.05

Discussion

Diabetes mellitus can be complicated by a variety of cutaneous manifestations. Good metabolic control may prevent some of these manifestations and may support cure ⁽¹⁰⁾. Unfortunately, most glucose lowering drugs also have cutaneous side effect ⁽¹¹⁾.

The commonest skin lesion in diabetic patients in our study was neuropathic while drug eruptions were the least common. Dryness of skin and hair loss was the commonest neuropathic lesions. Neuropathic foot ulceration although rarely encountered in our

series yet is a very important complication necessitating hospital admission and special therapy ⁽¹²⁾. The objective data on foot examination of 195 patients with type II diabetes mellitus were analyzed considering the grade of severity of diabetic peripheral neuropathy (DPN) ⁽¹²⁾. It was revealed that the skin humidity is depending on DPN. Particularly, the DPN 2-4 time raises the dryness of the skin on the foot; the risk of callus development is significantly high in case of painless and complicated DPN, accordingly, the possibility of neuropathy ulcer is also high in this group ⁽¹²⁾. Almahdi reported similar result to this study; he found neuropathic skin lesions in 17.4% of patients with IDDM and 4.6% of those with NIDDM ⁽¹³⁾. Nabarro found both type I and type II diabetics to have increasing prevalence of having neuropathic skin lesions as the age and disease duration increase ⁽¹⁴⁾, these result were consistent with this study but in both studies this result was statistically not significant.

Diabetic dermopathy was the commonest vascular skin lesion in this study. Male patients were affected more than female and those with type I diabetes were affected more than those with type II diabetes. The skin lesions increase with increasing disease duration. Lee who studied 188 diabetic patients found that peripheral vascular disease occurred in 95% with a raising rate significantly with age but insignificantly with duration of illness or sex ⁽¹⁵⁾. His results were not consistent with ours.

Intertriginous moniliasis was the commonest infection. Skin infections occurred more frequently with longer duration of the disease. These results were similar to a study done by Romano who studies 457 diabetic patients ⁽¹⁶⁾. Allergic reactions to both oral hypoglycemic agents and parentally administered insulin occurred but were fortunately uncommon ⁽¹⁷⁾. The commonest eruption was due to insulin; lipid atrophy and lipid hypertrophy at injection sites are well known side effects of insulin treatment. Conditions favoring these local complications are created when repeated or continuous injections are given in the same area ⁽¹⁸⁾. Urticaria, whether localized to the area of insulin injection or generalized, was the next common eruption. Drug eruptions affected male more than

female with no significant difference. Type I diabetics developed this manifestation more than type II patients with a statistical significance. There was an increase in prevalence with increase in disease duration. These results were similar to a study done by Fitzpatrick⁽¹⁹⁾. Purities were the commonest miscellaneous skin lesion. Vitiligo occurred in type II rather than type I which is inconsistent with Dawbers results⁽²⁰⁾. Scleredema and haemochromatosis, although rare, were recognized in this study. In conclusion, diabetic cutaneous manifestations are common especially in IDDM having longer disease duration.

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