

Cutaneous Manifestations in Diabetes Mellitus Patients

“Ignored Issue Dangerous Outcome”

1. Kiran Mehtab 2. Muhammad Yusuf Salat 3. Surraiya Shaikh 4. Shaarmeen Chughtai
5. Sahar Abid 6. Sameea Khalid 7. Hira Hameed

1. Assoc. Prof. of Community Medicine, SMU, JSMU, Karachi 2. Prof. of Pharmacology, Vice Principal Sindh Medical University, JSMU, Karachi 3. Asstt. Prof. of Biochemistry, SMU, JSMU, Karachi
4 to 7. House Officers, Medicine & Surgery, JPMC, Karachi

ABSTRACT

Objective: To assess the Cutaneous manifestations of Diabetes Mellitus patients in tertiary care hospitals.

Study Design: A cross-sectional study

Place and Duration of Study: This study was conducted was outpatient departments of Dermatology, Medicine, Diabetic clinics of Jinnah Postgraduate Medical Centre, Civil Hospital, Baqai Endocrinology Centre from the 15th of May till the 30th of November 2011.

Materials and Methods: A sample size of 145 diabetic patients with skin disorders selected through non-probability purposive sampling in outpatient departments of Dermatology, Medicine, Diabetic clinics of Jinnah Postgraduate Medical Centre, Civil Hospital, Baqai Endocrinology Centre. The Data Analysis was collected, analyzed on statistical packages of social sciences 17

Result: Out of 145 Diabetic patients, 63.4% were Females, 36.6% males. The mean age was 53.14 years. 77.9% had skin diseases, 55.9% experience skin lesions in the past. Female patients had higher frequency of skin disorders (92/145) than male diabetics (53/145). 69.7% had diabetes mellitus for more than 5 years; 11% who had diabetes for 5 years, 8.3% had it for 3 years, 8.3% for a year. Gangrene 46.20%, bacterial infections 30.3%, fungal infection 23.44%.

Conclusion: The study concluded skin involvement occurs commonly in diabetics patients. Patients should be educated about blood glucose control, skin and foot care.

Key Words: Diabetes mellitus, Skin infections, Cutaneous, Gangrene

INTRODUCTION

The epidemiologic statistics of skin diseases provide us with information about prevalence, age, and sex differences in affected groups, and their regional distribution ¹. It also offers the most useful way of evaluating causes of skin disorders in subjects with systemic disease ² the number of individuals with diagnosed diabetes mellitus has increased fivefold between 1958 and 1993. The World Health Organization estimates that the total number of people with diabetes the world over will double to 200 million by the year 2010. The disease can result in complications affecting all systems of the body, including the skin³ 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) ⁴ While skin disorders are often observed in diabetics, there are only a few

epidemiologic studies that have mentioned the prevalence of skin diseases in patients with type-2 diabetes mellitus ^{5,6} (DM) is a clinical syndrome characterized by hyperglycemia due to absolute or Relative insulin deficiency. It is the most common Endocrine disorder and is classified as type 1 or Insulin Dependent Diabetes Mellitus (IDDM) and type 2 or non-Insulin Dependent Diabetes Mellitus (NIDDM) on the basis of age of onset of disease and degree of insulin dependency, The aim of this study was to evaluate the frequency of skin manifestations in patients with diabetes mellitus of this area. The World Health Organization (WHO) estimates the global burden of diabetes to be 366 million cases by the year 2030. (2) WHO ranks Pakistan 7th on the diabetes prevalence list, The prevalence of DM in Pakistan is 8.6%, 11.1% and 13.9% in the provinces of Baluchistan, NWFP and Sindh respectively, Although diabetes is very common in Pakistan, systematic surveys of the cutaneous manifestations in diabetic patients are lacking ²

MATERIALS AND METHODS

A cross-sectional study comprising of One hundred and Forty five diabetic patients with skin disorders selected through non-probability purposive sampling, attending

the outpatient departments of Dermatology, Medicine, Diabetic clinics of Jinnah Postgraduate Medical Centre, Civil Hospital, Baqai Endocrinology Centre was conducted from the 15th of May till the 30th of November 2011. Information regarding age, sex, occupation, presenting disorders was recorded in all patients after taking their verbal consent. The Data was collected, Analysis through statistical package of social sciences (SPSS) 17.

RESULTS

Out of 145 Diabetic cases, 92 (63.4%) were Females, 53 (36.6%) were males. The mean age was 53.14 years. Out of 145 Diabetics, 77.9% currently had skin diseases, 55.9% experienced skin lesions in the past. Female patients had higher frequency of skin disorders (92/145) as compared to male diabetics (53/145). Most patients (69.7%) had diabetes for more than 5 years, followed by 11% who had diabetes for 5 years, 8.3% had it for 3 years, 8.3% for a year. The commonest skin infection was Gangrene, observed in 67 patients (46.20%), bacterial in 44 patients (30.3%) Fungal infection in 34 patients (23.44%)

Table No.1: Frequencies of positive & negative results asked to the Diabetics with Skin Lesions.

S.No.	Questions	Yes%	No %
1	Diabetics with skin lesion in the past	56.3%	43.8%
2	Diabetics who had fever with skin lesions	33.1%	65.4%
3	Diabetics who had pain with skin lesions	66.4%	33.6%
4	Diabetics who had itching with skin lesions	64.8%	35.2%
5	Diabetics who have foul odor with skin lesions	17.3%	82.7%
6	Diabetics who have recurrence of skin lesions	38.5%	60.1%
7	Diabetics who have numbness at the site of skin lesions	39.6%	59%
8	Diabetics who have nails of abnormal shape	38.8%	59%

Most Prevalant Sking Infection in Diabetics

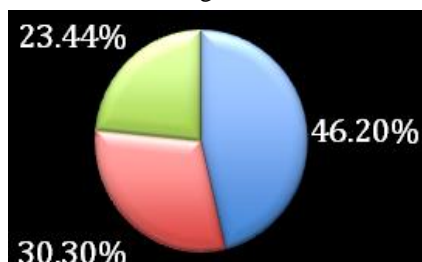


Figure No.1Frequencies of Skin Infections in Diabetics

% Of The Years After Which Diabetic Patients Had Skin Lesions

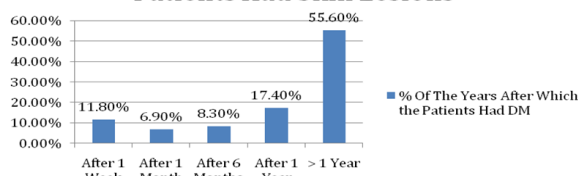
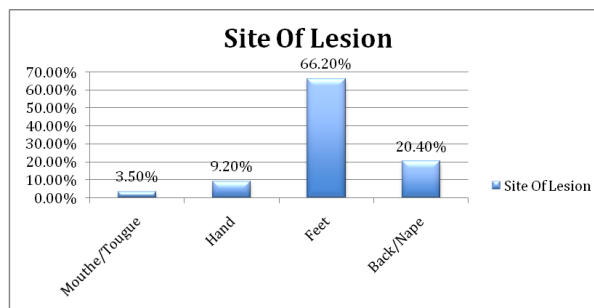


Figure No.2: Frequencies of Years after which Diabetics had Skin Lesions



DISCUSSION

Diabetes is a disease of multiple complications. Various skin disease surveys have concluded that skin diseases are very common in patients with diabetes mellitus, infections being high on the list like our study. People with diabetes are vulnerable for skin infection. In one study from Pakistan which determined 82% overall prevalence of skin disorders, 49% of cases with diabetes had a skin infection⁵. In another study from Italy, the overall prevalence of skin disorders is 61.2% for patients with type-2 diabetes. Infections, diabetic dermopathy, psoriasis and prurigo are reported as the most common skin disorders. Non-Candidal intertrigo and eczemas, which are determined among the top six skin disorders in our study, aren't notified in the study⁶. There are reports of a significant association of diabetes mellitus and psoriasis in a large series of patients with psoriasis^{6,7}. We also found these disorders coexist in 11.2% of our cases. According to Avci et al.'s a novel study⁷, individuation of the various hues of erythema in psoriatics by careful dermatological examination or routine measurements of lesional erythema may alert the physician to possible impaired glucose tolerance in the presenting subject, and this may affect disease severity - From skin diseases with strong to weak association to diabetes, necrobiosis lipoidica and eruptive xanthomas are determined rather uncommon while diabetic dermopathy is determined among the top six skin disorders in our study. As a matter of fact, it is reported that diabetic dermopathy is the most common cutaneous marker of diabetes in literature⁸. Skin manifestations including various infective, non-infective lesions are common. Studies are done by dermatologists, others. Skin diseases surveys had concluded skin diseases are very common in patients on

DM, infections being high on the list. The study in Pakistan determined 82% overall prevalence of skin disorders 49% of cases which DM had skin infections. Study from Italy the prevalence of skin disorder is 61.2% for patients with type 2 DM. Infections, Diabetic Dermopathy, Psoriasis, Prurigo are reported as most common skin disorders. Non-candidal Intertrigo Eczemas, which are determined among top 6 skin disorders¹. This study was done to assess skin lesions in diabetic patients, among the diabetics who had infective lesions. Gangrene was found in highest 46.20% patients, 30.34% patients had bacterial infections including Abscess, Furunculosis, Carbuncle. 23.44% had fungal infections, *Candida albicans*, Onychomycosis². The cause of foot problems were trauma, ill-fitting footwear, improper hygiene, smoking. Risk factors for Bacterial infections included strong family history, previous hospitalizations, and prolonged bleeding time.

CONCLUSION

The study concluded that skin involvement occurs quite often in diabetics of this area. Patients should be educated about blood glucose control as well as skin and foot care.

Acknowledgement:

Hamza Haq, Syeda Zehra Qamber, Deebaj Nadeem, Aysha Javed, Sheema Zafar, Rahila Mustafeez, Saad Hasan, Rufina Ali.

REFERENCES

1. Najdawi F, Fa'ouri M. Source: Jordanian Board of Family Medicine, Frequency and types of skin disorders and associated diabetes mellitus in elderly Jordanians. Royal Medical Services Jordan 2002;8(4-5):574-8.
2. Sasmaz S, Buyukbese MA, Cetinkaya A, Celik A, Arican O. The Prevalence of Skin Disorders in Type-2 Diabetic Patients. The Int J Dermatol 2005; 3(1).
3. Dogra S, Kumar B. Epidemiology of skin diseases in school children: a study from Northern India. Pediatr Dermatol 2003;20:470-473.
4. Gupta AK, Konnikov N, MacDonald P, Rich P, Rodger NW, Edmonds MW, et al. Prevalence and epidemiology of toenail onychomycosis in diabetic subjects: a multicentre survey. Br J Dermatol 1998;139:665-671.
5. Perez MI, Kohn SR: Cutaneous manifestations of diabetes mellitus. J Am Acad Dermatol 1994; 30:519-531.
6. Wahid Z, Kanjee A. Cutaneous manifestations of diabetes mellitus. J Pak Med Assoc 1998;48: 304-305.
7. Romano G, Moretti G, Di Benedetto A, Giofre C, Di Cesare E, Russo G, et al. Skin lesions in diabetes mellitus: prevalence and clinical correlations. Diabetes Res Clin Pract 1998;39: 101-106.
8. Henseler T, Christophers E: Disease concomitance in psoriasis. J Am Acad Dermatol 1995;32: 982-986.
9. Avci O, Caliskan S, Caliskan M. Erythema measurements may allow early diagnosis of diabetes mellitus in adult psoriatics. J Eur Acad Dermatol Venereol 2003;17:280-284.
10. Shemer A, Bergman R, Linn S, Kantor Y, Friedman-Birnbaum R. Diabetic dermopathy and internal complications in diabetes mellitus. Int J Dermatol 1998;37:113-115.
11. Cohen O, Yaniv R, Karasik A, Trau H. Necrobiosis lipoidica and diabetic control.
12. Libecco JF. Finger pebbles and diabetes: a case with broad involvement of the dorsal fingers and hands. Arch Dermatol 2001; 137:510-511.
13. Brik R, Berant M, Vardi P. The scleroderma-like syndrome of insulin-dependent diabetes mellitus. Diabetes Metab Rev 1991; 7:121-128.
14. Jelinek JE. Cutaneous manifestations of diabetes mellitus. Int J Dermatol 1994; 33:605-617.

Address for Corresponding Author:

Dr. Kiran Mehtab,

Associate Professor,

Community Medicine Department.

Sindh Medical University, (JSMU),

Email Address: kiranalisyed@yahoo.com

Cell #: 0333-3188237