



ORIGINAL RESEARCH PAPER

DERMATOLOGY

A CLINICAL STUDY OF DIABETES MELLITUS IN PSORIATIC PATIENTS

KEY WORDS: Adult onset coats disease, exudative retinal detachment, telangiectatic, methyl prednisolone,

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MATERIALS AND METHODS:

TYPE OF STUDY: Descriptive Study

INCLUSION CRITERIA:

- Patients who are willing to do investigations as per the study.
- Cases of Psoriasis proven by clinical examination or biopsy
- All types of Psoriatic patients (Plaque, Pustular, Palmoplantar , Erythrodermic, Guttate type)

EXCLUSION CRITERIA

- Patients on long term immunosuppressive drugs
- Patients who are not willing to undergo investigations as per the study protocol
- Females who are pregnant or breast feeding

DATA COLLECTION: It was done per the preforma.

After obtaining the informed consent all patients were subjected to detailed history and clinical examination. A detailed history included duration of the disease, joint pains, smoking, alcohol consumption, diet, presence of other systemic illness, past intake of systemic agents for psoriasis & concomitant intake of medicines for other illnesses.

Clinical examination included measurement of height, weight, waist circumference and blood pressure. The body mass index (BMI) was determined by weight and height calculations using the following equation. BMI= weight in Kg/ Square height in meters.

A BMI from 23-24.9 is overweight; a BMI greater than or equal to 25 is moderate obesity; a BMI greater than or equal to 30 is severe obesity.

Each participant was thoroughly examined by two dermatologists who classified psoriasis according to the International classification of Diseases, Tenth revision. Extent of involvement was assessed using Psoriasis Area and Severity Index (PASI), a composite score from 0 to 72 that evaluates the erythema, induration, and scaling of the lesions in four body areas (head, trunk, arms and legs).

$PASI = 0.1(Eh + Ih + Sh) Ah + 0.2(Eu + Iu + Su)Au + 0.3(Et + It + St)At + 0.4(El + Il + Sl)A$ E-erythema, I- infiltration, S- scaling, A- area Mild psoriasis was classified as a PASI < 8, moderate 8 - 10 and severe psoriasis > 10.

Psoriatic arthritis was diagnosed according to standard criteria. Serum glucose levels was measured by the hexokinase method, lipid profile which included total cholesterol, low density lipoprotein, high density lipoprotein and triglyceride levels was assessed by enzymatic methods.

CRITERIA FOR DIABETES MELLITUS:

Patients were considered to have diabetes if their fasting glucose was more than equal to 126 mg/dl

OBSERVATIONS AND RESULTS:

Table: 1 Duration Of Psoriasis

Duration of psoriatic patients with comorbidities varies from 6 months to 18 years. In the study it was seen that the duration of psoriasis with comorbidities was seen predominantly upto 5 years

with 77.5%. and was noticeably reduced above 5 years duration with 62%. The p value was insignificant.

Duration Of Psoriasis	Number of patients		Percentage	p-value
	Total	Comorbidities		
Up to 5 years	71	55	77.5%	
Above 5 years	29	18	62.1%	0.2698

Distribution of Comorbidities, among duration of Psoriasis

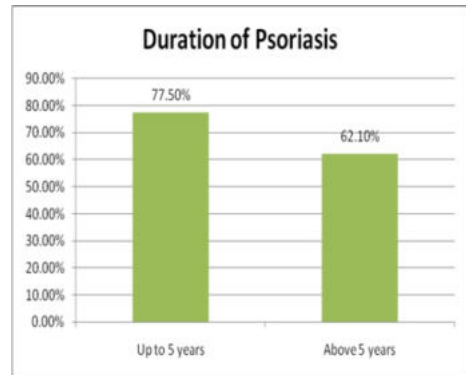


TABLE 2:FAMILY HISTORY OF COMORBIDITIES

We have taken family history of comorbidities in immediate family members and calculated the percentage of patients with or without family history . In the present study family history did not play a very important role as only 25% of the cases showed a positive history on comorbidities.

FAMILY HISTORY OF COMORBIDITIES	Number of patients	Percentage
NEGATIVE	75	75%
POSITIVE	25	25%

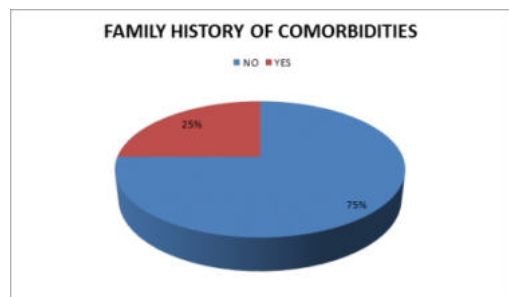


TABLE 3: PERSONAL HABITS

Personal habits play an important role in psoriasis. It is seen in the present study that alcohol and smoking increases the risk of developing psoriasis and its comorbidities. Among 100 patients 40% were alcoholic and 35% were smokers which were a major predisposing factor for psoriasis.

Personal habits	Number of Patients	Percentage
SMOKING	35	35%
ALCOHOL	40	40%
NON SMOKER/ALCOHOLIC	25	25%

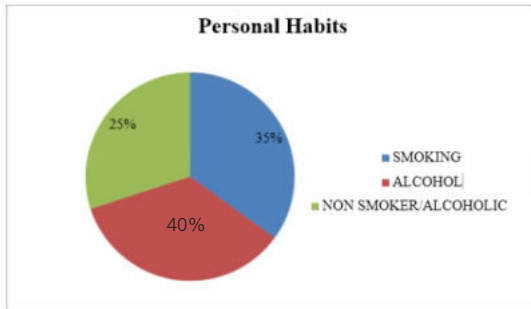


Table 4: Types Of Psoriatic Diseases

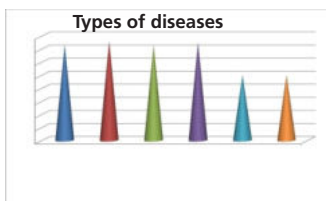
In the present study it is seen that more amount of comorbidities were seen in psoriasis vulgaris and erythrodermic psoriasis with 75% each. Comorbidities in psoriasis vulgaris was seen in 73% followed by pustular and guttate psoriasis with 50% each.

Type	Number of patients		Co morbidities	Percentage
	Total	Co morbidities		
Psoriasis Vulgaris (PASI <10)	52	38	DYS,HT,MS, DM,MI	73.08%
Psoriasis Vulgaris (PASI >10)	29	22	DYS,HT,DM,	75.86%
Palmoplantar psoriasis	11	8	DYS,HT,MS, DM,OB	72.73%
Erythrodermic psoriasis	4	3	DYS,DM,MI, OB,HT,MS	75.00%
Pustular psoriasis	2	1	DYS,HT,MS, DM,OB,MI	50.00%
Guttate psoriasis	2	1	DYS	50.00%

80%	73%	76%	73%	75%	50%	50%
70%						
60%						
50%						
40%						
30%						
20%						
10%						
0%	Psoriasis Vulgaris (PASI <10)	Psoriasis Vulgaris (PASI >10)	Palmoplantar psoriasis	Erythrodermic psoriasis	Pustular psoriasis	Guttate psoriasis

Table 5: SEVERITY OF PSORIASIS

On assessing the PASI SCORE the severity of psoriasis associated with comorbidities was seen in 80% followed by comparing mild to moderate psoriasis with comorbidities with 69%



Severity Of Psoriasis	Number of patients		Percentage
	Total	Co morbidities	
Mild or Moderate	65	45	69.2%
Severe	35	28	80%
Severity of psoriasis & comorbidities			
82.00%			
80.00%			
78.00%			
76.00%			
74.00%			
72.00%			
70.00%			
68.00%			
66.00%		69.20%	
64.00%			
62.00%			
		Mild to Moderate	Severe

DIABETES MELLITUS

Diabetes Mellitus was present in 22(30%) out of 100 psoriatic patients

Table 6: Severity Of Psoriasis and Diabetes Mellitus

DM:

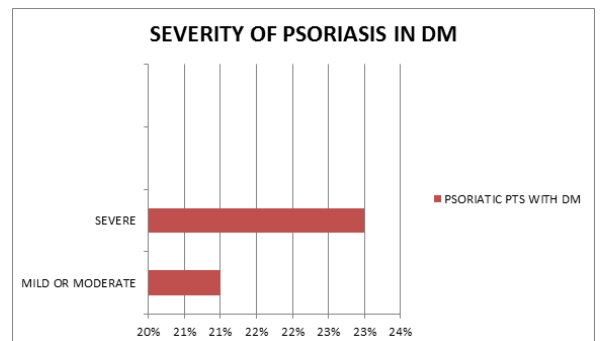


Table 7: AGE DISTRIBUTION AND DIABETES MELLITUS

Diabetes mellitus with age distribution was most commonly seen above 40 years with 25% upto 40 years with 20%. The P value is not significant

Age	Total	Number of patients	Percentage	p value
Up to 40	60	12	20%	
Above 40	40	10	25%	0.024

Table 8: SEXWISE DISTRIBUTION OF DIABETES MELLITUS

Gender	Total	Diabetes Mellitus	Percentage	p value
Male	85	19	22.3%	0.025
Female	15	3	20%	

In the study it is seen that there is more of male predominance with diabetes mellitus with 22%. The amount of females seen was only 20%. P value is insignificant.

Gender and Diabetes mellitus

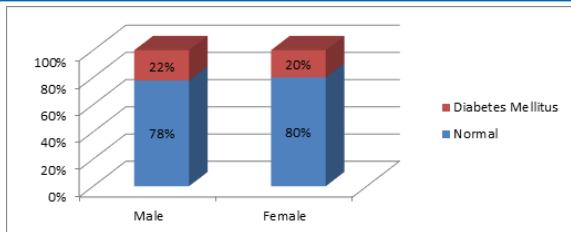


Table 9: Duration Of Psoriasis And Diabetes Mellitus

Diabetes Mellitus is seen in age groups ranging from 28 years to 73 years

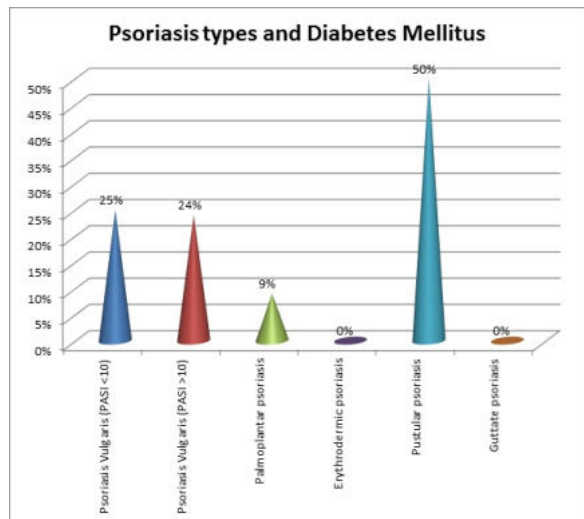
The prevalence of diabetes mellitus as a comorbidity was seen more above 5 years associated with psoriasis with 34.5% followed by reduced number of patients with 17% upto 5 years associated with diabetes mellitus and psoriasis.

Duration Of Psoriasis	Number of patients		Percentage	
	Total	Diabetes Mellitus		
Up to 5 years	71	12		17%
Above 5 years	29	10		34.5%

Table 10: Psoriasis Types And Diabetes Mellitus

In the study it was seen that comparing the PASI score diabetes mellitus was more commonly associated with pustular psoriasis with 50%. Followed by psoriasis vulgaris with PASI < 10 OF 25% and PASI > 10 with 24%. The cases of palmoplantar psoriasis was 9%.. there were no cases of diabetes mellitus associated with erythrodermic psoriasis and guttate psoriasis.

Type	Number of patients		Percent age
	Total	Diabetes Mellitus	
Psoriasis Vulgaris (PASI <10)	52	13	25%
Psoriasis Vulgaris (PASI >10)	29	7	24.1%
Palmoplantar psoriasis	11	1	9%
Erythrodermic psoriasis	4	0	0%
Pustular psoriasis	2	1	50%
Guttate psoriasis	2	0	0%



DISCUSSION:

This study is conducted in Meenakshi Medical College Hospital and Research Institute in Kanchipuram from the patient attending

the OPD.

Among the comorbidities diabetes mellitus was most commonly seen with 30%

AGE and COMORBIDITIES:

The present study showed that the most common age group to develop psoriasis associated with comorbidities were commonly seen in the 5th decade of life with 35 cases followed by the 6th decade of life with 21 cases. very minimal cases were seen in the second decade of life. According to the study done by sunil doghra et al 93 done in North India the most common age group to develop psoriasis associated with comorbities was seen in the third and fourth decade of life. According to the study done in Pakistan by Jayakar Thomas et al 94 the most common age group to develop psoriasis with comorbidities were seen was in the range of 41-50 yrs (26%) followed by 51-60 yrs (21%). 60 % of patients which correlates with the present study. The study done by chandramohan kudligi95 it was found that psoriasis with comorbidities were seen more with 4th decade followed by 5th decade which is similar the the present study.

GENDER DISTRIBUTION:

According to the present study there was more of male predominance with 74% compared to females cases seen with 66%.

According to the study done by Belliappa Pemmanda Raju et al96 there wee more male cases with 71% and females with 21% which correlates with the present study.

Studies done by Sunil Dogra et93 showed that the majority of the cases were male patients which correlates with the present study.

Studies done by Chandramohan Kudligi95 showed more of male predominance which is similar to the present study.

Duration of psoriasis and comorbidities:

In the present study the duration of psoriatic patients with comorbidities varies from 6 months to 18 years. It was noticed that comorbidities were seen more common in psoriatic patients upto a duration of 1-5 years with 77%. According to the study done by Jayakar Thomas N et al 94 it was seen that most of the patients had a duration between 1-5 years which correlates with the present study.

History of comorbidities:

In the present study most of the patients were not aware having any familial history of psoriasis.

SEVERITY OF PSORIASIS:

On assessing the PASI SCORE the severity of psoriasis associated with comorbidities was seen in 80% followed by comparing mild to moderate psoriasis with comorbidities with 69%.

Studies done by Maria de Fátima et al 98 showed that comorbidities were more commonly seen in severe psoriasis compared to mild/ moderate psoriasis.

Recent studies done by Bengu C et al 99 showed that for more accurate results PASI score along with immunohistochemistry can be used. In a study done with 40 patients it was seen that significantly.

higher PASI scores were found in the psoriasis group with a strong level of CRH-R1 staining.

According to the study done by Belliappa Pemmanda Raju 6Severity of psoriasis was moderate to severe in 68 (56.7%) of the patients and mild in 52 (43.3%) which almost correlates with the present study.

TYPE OF PSORIASIS:

In the present study it is seen that more amount of comorbidities were seen in psoriasis vulgaris and erythrodermic psoriasis with

75% each. Comorbidities in psoriasis vulgaris was seen in 73% followed by pustular and guttate psoriasis with 50% each.

Studies done by Chandramohan Kudling showed that Chronic plaque psoriasis was the most common type of psoriasis contributing 91 (91%) cases. Two (2%) patients presented with guttate psoriasis and 7 (7%) with palmoplantar psoriasis.

COMORBIDITES OF PSORIASIS:

According to the study done by Steven R. Feldman it was seen that the most common comorbidities associated with psoriasis were Hypertension (34.3%), hyperlipidemia (33.5%), cardiovascular disease (17.7%), diabetes (14.2%).

Studies done by Jayakar Thomas et al 94 showed that in a total of 100 cases 50 cases had comorbidities with Diabetes mellitus was seen in 8% of patients.

Studies done by Belliappa Pemmanda Raju et al showed that Central obesity was the most prevalent comorbidity, affecting 70 (58.3%) patients with psoriasis, followed by hypertension, dyslipidaemia, diabetes mellitus, metabolic syndrome, ischaemic heart disease and stroke.

In the present study diabetes mellitus was the most common comorbidity seen.

DIABETES MELLITUS:

In the present study out of 73 cases of comorbidities Diabetes Mellitus was present in 22(30%) with a male pre dominance. Patients were considered to have diabetes if their fasting glucose was more than equal to 126 mg/dl AND increased HbA1C.

According to the study done by Maryam Ghiasi et al out of 304 psoriatic patients there were 54 cases of diabetes mellitus patients with a female predominance.

According to the study done Priyanshu Mala et al by 35% of the patients were diagnosed with diabetes mellitus.

Studies done by Sanjeev J Aurangabadkar et al 10 says that Psoriatic patients had a 4-fold increased risk of type 2 diabetes

CONCLUSION:

- Psoriasis is a chronic, hyper-proliferative skin diseases; which is difficult to treat and is associated with life threatening comorbidities.
- In our study there was a significant association between psoriasis and occurrence of diabetes mellitus
- There was more male predominance than in females developing psoriasis with comorbidities.
- Comorbidities are common in psoriasis vulgaris of severe type. They are also seen in psoriasis vulgaris of mild or moderate type, psoriatic erythroderma, guttate type, pustular and palmoplantar psoriasis.
- Our study shows that psoriasis is an emerging disease with various comorbidities.
- As dermatologists we must be aware as how to diagnose psoriasis and correlate it clinically with the other comorbidities for a better future of the patient.
- Patients should be encouraged to correct their cardiovascular risk factors, obesity and smoking habits and if diabetic to reduce their glucose.
- Even if comorbidities are not detected at screening, adapting healthy life style practices are needed from the time of diagnosis in present era to prevent these comorbidities.
- We would like to conclude that treatment of psoriasis successfully. Would improve the quality of life for the patient and one would lead a better if timely screening and treatment is given to the patient.

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