

## A Study to Determine the Prevalence of Cardiovascular Risk Factors in Patients with Psoriasis

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### Abstract :

**Aims And Objectives :** To study prevalence of cardiovascular risk factors (diabetes, hypertension and BMI) in patients with psoriasis.

**Observations :** The present study was undertaken to determine the presence of diabetes, hypertension and BMI in patients previously diagnosed with psoriasis. A total of 65 cases and 66 age and sex matched controls were enrolled in the study in accordance with inclusion and exclusion criteria previously mentioned. All patients were subject to detailed history and examination as well as blood and anthropometric tests. The highest number of subjects were in the age group 21-30 (case -25 [37.88%]) (control – 37(40%)) In comparing the BMI, it was found that in the control group, 23(34.85%) subjects were obese where 34(52.31%) subjects were found to be obese in the case group, which was significantly higher ( $P=0.113$ ). While comparing the presence of diabetes in both the groups, 18(28.27%) subjects in the control group were found to be diabetic whereas 26(40%) of the subjects in the case group were diabetic, which was again statistically significant. ( $p=0.123$ )

**Conclusion:** The present study shows a statistically significant association between presence of psoriasis and factors suggestive of cardiovascular morbidity such as diabetes, hypertension and obesity.

**Keywords:** CVS, Hypertension, Diabetes, BMI, Psoriasis.

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Date of Submission: 01 -08-2017

Date of acceptance: 23-08-2017

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### I. Introduction

Psoriasis is a common disease, affecting 2-3% of the population worldwide.<sup>1</sup> Psoriasis is a multigenic inflammatory disease and more than 20 predisposition genes have been identified. People with psoriasis are known to carry an increased risk of developing severe co-morbid conditions such as diabetes and psoriatic arthritis, as well as depression and even suicidal ideation. A number of studies also show that psoriasis is associated with greater prevalence of hypertension, one of the most important risk factors for cardiovascular disease. The role of environmental factors such as infection, drugs, stressful events and smoking has been suggested. The association of psoriasis with cardiovascular disease dates back from 1961.<sup>2</sup> The International Federation of Psoriasis Associations, IFPA, commends the World Health Organization for raising awareness of the risks associated with high blood pressure and calls for healthcare professionals to regularly scan for the condition in patients with psoriasis.

### II. Aims And Objectives

-To study prevalence of cardiovascular risk factors (diabetes, hypertension and BMI) in patients with psoriasis.

### III. Materials And Methods

**Study type :** Observational.

Cases : All cases of Psoriasis attending the Outpatient Department in Medicine and Dermatology of Subharti Medical College, Meerut

Controls : Normal healthy controls matched regarding age, gender, BMI and smoking habits but not suffering from Psoriasis or any known cardiac disease. These were included from the attendants of the patients and hospital staff.

All patients were subject to detailed history taking and examination including weight, BMI, waist circumference, Blood pressure etc.

**Inclusion Criteria**

- Age > 18 years
- Duration of psoriasis more than 6 months
- Not receiving systemic treatment for psoriasis for atleast 6 weeks month before enrolment.

**Exclusion Criteria**

- Concomitant autoimmune multi system disease / on therapy for other autoimmune disease.
- Critically ill patients/ end stage multi system disease.
- Pregnant females
- Oral methotrexate, ciclosporin, acitretin and fumarat esters within 1 month before inclusion.
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**IV. Results And Observations**

A total of 131 patients (65 cases and 66 age and sex matched controls) were included in the study.

**Table 1:**Agewise distribution of study population :

Age Group	Controls(n=66)		Cases(n=65)	
	Number	Percentage	Number	Percentage
<=20	3	4.55	3	4.62
21-30	25	37.88	26	40.00
31-40	14	21.21	15	23.08
41-50	16	24.24	12	18.46
51-60	4	6.06	3	4.62
>60	4	6.06	6	9.23

The data indicates that the majority of subjects belonged to the age group 31-50 years. There was no statistically significant difference in the age of subjects. The percentage of females in the case group was 30(46.15%) whereas in the control group it was 34(51.52). There was no bias of gender in both study groups.

**Table 2:**Comparison of hypertensive status

	Controls		Cases	
	Number	Percentage	Number	Percentage
Normotensive	40	60.61	40	61.54
Hypertensive	26	39.39	25	38.64
P = 0.913				

Above data indicates that there was no significant difference in hypertensive status in either the test or control groups.:

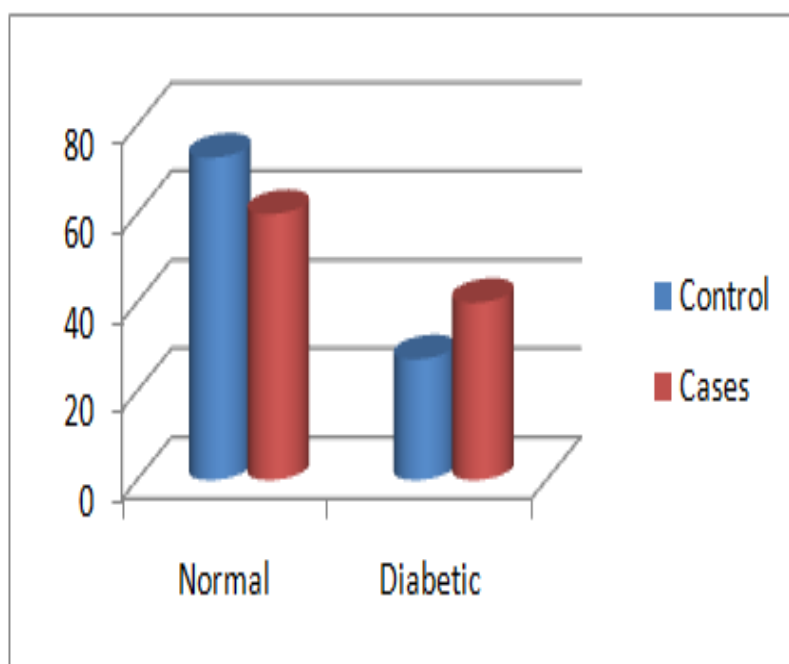
**Table 3:** comparison of BMI in study population :

BMI	Controls		Cases	
	Number	Percentage	Number	Percentage
Normal	18	27.27	15	23.08
Overweight	25	37.88	16	24.62
Obese	23	34.85	34	52.31
P= 0.113				

Around 1/4<sup>th</sup> of the total population(25.19%) was having a normal BMI(18.5-23). Normal BMI was found in higher proportion of subjects from control group(27.27%) as compared to cases(24.62%).

**Table 4:** Diabetes status in study population

Diabetes Status	Controls		Cases	
	Number	Percentage	Number	Percentage
Non diabetic	48	72.73	39	60.00
Diabetic(fasting BS > 110mg/dl)	18	27.27	26	40.00
P= 0.123				



The proportion of diabetic patients was significantly higher in the case group. It was thus observed that the proportion of diabetes, hypertension and obesity was found to be significantly higher in the case groups than in the control group.

## V. Discussion

This work titled “A study to determine the prevalence of cardiovascular risk factors in patients with Psoriasis : A cross sectional study.” Was carried out in the Dept. Of Medicine, Subharti Hospital, Meerut from December 2015 to June 2017. Psoriasis is a prototypical Th-1,17 and Th-1 inflammatory disease . These same factors are also associated with the pathogenesis of atherosclerosis. Recent studies have also shown coronary microvascular dysfunction in patients with long term psoriasis. In addition to the inflammatory burden which drives CAD, there may also be shared genetic risk which contributes as well. Genetics have been shown to play a key role in susceptibility to psoriasis and metabolic disorders such as dyslipidemia and coronary artery disease.<sup>3,4</sup>The present study was undertaken to determine the presence of diabetes, hypertension and BMI in patients previously diagnosed with psoriasis. A total of 65 cases and 66 age and sex matched controls were enrolled in the study in accordance with inclusion and exclusion criteria previously mentioned. All patients were subject to detailed history and examination as well as blood and anthropometric tests. The highest number of subjects were in the age group 21-30 (case -25 [37.88%]) (control – 37(40%)) Amongst the controls, the number of hypertensive subjects was 26(39.39%) whereas in the case group , it was 25(38.64%). Thus, there was no significant difference in the occurrence of hypertension between the case and control groups. In comparing the BMI , it was found that in the control group, 23(34.85%) subjects were obese where 34(52.31%) subjects were found to be obese in the case group, which was significantly higher( $P=0.113$ ). While comparing the presence of diabetes in both the groups, 18(28.27%) subjects in the control group were found to be diabetic whereas 26(40%) of the subjects in the case group were diabetic, which was again statistically significant. ( $p=0.123$ )

A study performed by Gelfand et Al on 1000 subjects also indicated that patients with psoriasis are more likely than the general population to have diabetes, high cholesterol , hypertension and other “traditional” risk factors for cardiovascular disease. A cross sectional study by Dreihier et Al in 2008 included 10,669 patients and the findings demonstrated that dyslipidemia, diabetes and hypertension were significantly higher in patients suffering from psoriasis.<sup>7</sup>Our study also revealed similar findings..

## VI. Conclusion

The present study shows a statistically significant association between presence of psoriasis and factors suggestive of cardiovascular morbidity such as diabetes, hypertension and obesity

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