



RESEARCH ARTICLE

Association Between Psoriasis and Metabolic Syndrome in Patients Attending Tertiary Care Hospitals

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ABSTRACT

Background: Psoriasis is a chronic inflammatory skin disorder increasingly associated with systemic comorbidities including metabolic syndrome. Chronic inflammation in psoriasis may contribute to obesity, hypertension, diabetes mellitus, and dyslipidemia. **Aim:** To evaluate the association between psoriasis and metabolic syndrome among patients attending PMCH.

Methods: This prospective observational study was conducted over march 2026 to august 2026 at PMCH and included 50 patients diagnosed with psoriasis. Clinical examination, PASI scoring, anthropometric measurements, blood pressure recording, fasting blood sugar, and lipid profile assessment were performed. Metabolic syndrome was diagnosed according to modified NCEP ATP III criteria. Statistical analysis was performed using chi-square test and Student's t-test with $p < 0.05$ considered significant.

Results: Metabolic syndrome was observed in 56% of psoriasis patients. Obesity, hypertension, hyperglycemia, and dyslipidemia were significantly associated with severe psoriasis. Higher PASI scores correlated significantly with metabolic syndrome components ($p < 0.05$). **Conclusion:** Psoriasis is significantly associated with metabolic syndrome and its components. Early screening and multidisciplinary management are essential to reduce long-term cardiovascular morbidity in psoriasis patients.

Keywords: Psoriasis, Metabolic syndrome, Hospitals.

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INTRODUCTION

About 2-3% of people worldwide suffer from psoriasis, a chronic immune-mediated inflammatory skin condition marked by erythematous scaly plaques. Psoriasis was once thought to be a dermatological condition, but it is now understood to be a systemic inflammatory disease linked to a number of comorbidities, including as psoriatic arthritis, obesity, diabetes mellitus, hypertension, dyslipidemia, and cardiovascular disease. Immune dysregulation, environmental factors, and genetic predisposition combine intricately to cause psoriasis. Both psoriasis and metabolic syndrome are significantly impacted by pro-inflammatory cytokines such TNF-alpha, IL-17, and IL-23. Psoriasis is linked to metabolic problems because chronic systemic inflammation is thought to play a role in insulin resistance, endothelial dysfunction, and atherogenesis[1].

A group of metabolic risk factors, such as central obesity, hypertension, hyperglycemia, hypertriglyceridemia, and decreased high-density lipoprotein cholesterol, are together referred to as metabolic syndrome. Individuals who have metabolic syndrome are more likely to develop type 2 diabetes, heart disease, and stroke. Metabolic syndrome is

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more common among psoriasis patients than in the general population, according to several studies. A higher risk of metabolic syndrome has also been linked to the severity and duration of psoriasis. A sedentary lifestyle, psychological

stress, poor eating habits, and systemic inflammation can all raise the risk of cardiovascular disease in those with severe psoriasis[2].

Patients with psoriasis should be diagnosed with metabolic syndrome as soon as possible since prompt lifestyle changes and medical attention can greatly lower morbidity and death. Dermatologists are crucial in discovering related metabolic problems since they are frequently the first medical professionals to see individuals with psoriasis. There is little information from tertiary care facilities in eastern India, despite mounting evidence linking psoriasis to metabolic syndrome. In order to assess the frequency of metabolic syndrome among psoriasis patients and examine its correlation with disease severity and clinical profile, the current prospective observational study was carried out at PMCH during a march 2026 to august 2026 period[3].

MATERIALS AND METHODS

This prospective observational study was conducted in the Department of Dermatology at PMCH over a period march 2026 to august 2026.

A total of 50 patients diagnosed clinically with psoriasis were included after obtaining informed consent. Patients with other chronic inflammatory disorders or systemic illnesses unrelated to metabolic syndrome were excluded.

Detailed history regarding duration of psoriasis,

family history, smoking, alcohol consumption, and treatment history was recorded. Psoriasis severity was

assessed using Psoriasis Area Severity Index (PASI).

Anthropometric measurements including waist circumference and BMI were recorded. Blood pressure was measured, and fasting blood sugar and lipid profile investigations were performed. Metabolic syndrome was diagnosed using modified NCEP ATP III criteria. Statistical analysis was performed using SPSS version 25. Chi-square test and Student's t-test were used. A p-value <0.05 was considered statistically significant.

RESULTS

Table 1: Demographic Distribution

Variable	Frequency	p-value
Male	32.0	0.03*
Female	18.0	0.03*

Table 2: Prevalence of Metabolic Syndrome Components

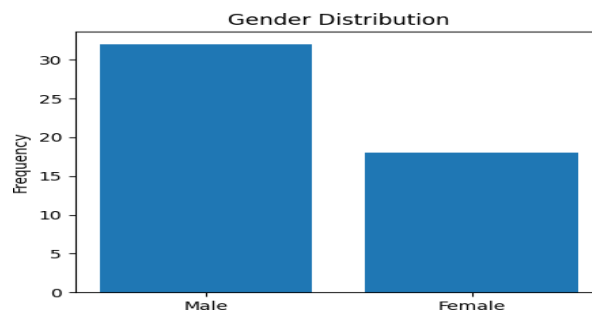
Component	Frequency	p-value
Obesity	24	0.01*
Hypertension	20	0.02*
Hyperglycemia	18	0.03*
Dyslipidemia	22	0.02*

Table 3: PASI Score and Metabolic Syndrome

Severity	Patients with MetS	p-value
Mild	5	0.04*
Moderate	11	0.03*
Severe	12	0.01*

Table 4: Overall Metabolic Syndrome Prevalence

Finding	Frequency	Percentage	p-value
Metabolic Syndrome Present	28	56	0.02*
Absent	22	44	0.02*



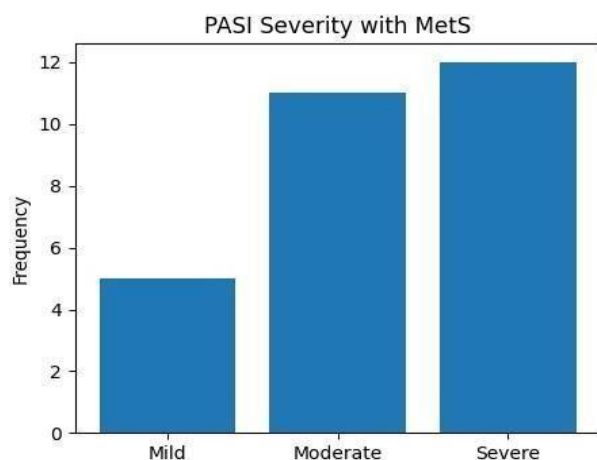


Figure 2: PASI severity with MetS

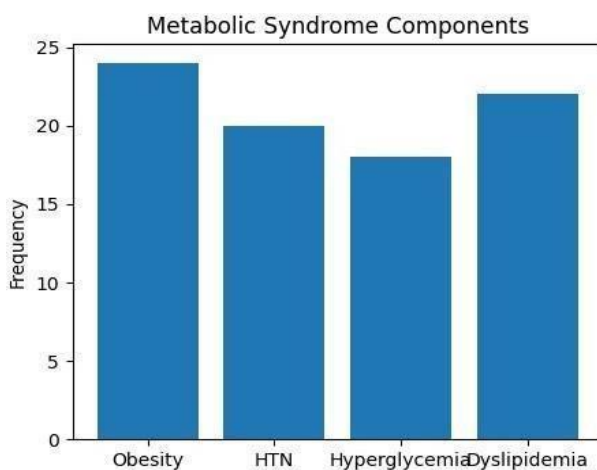


Figure 3: Metabolic syndrome components

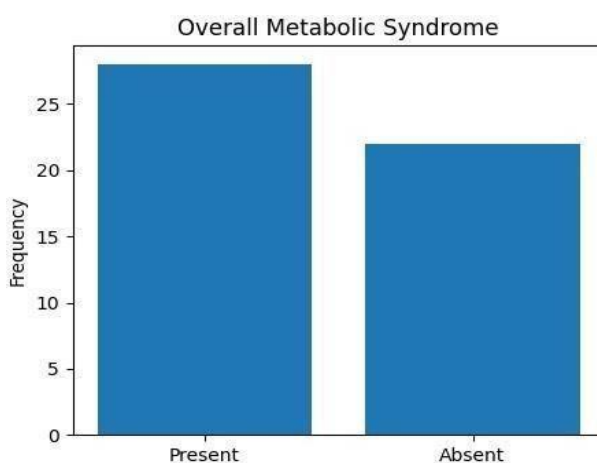


Figure 4: Overall metabolic syndrome

DISCUSSION

The current prospective observational study assessed the relationship between metabolic syndrome and psoriasis in PMCH patients. It is becoming more widely acknowledged that psoriasis is a systemic inflammatory disease linked to a number of metabolic and cardiovascular problems. The results of this study show a strong correlation between metabolic syndrome and psoriasis. 56% of psoriasis patients in the current study had metabolic syndrome. Previous investigations have revealed similar incidence rates, which lend credence to the theory that metabolic abnormalities are a result of chronic systemic inflammation in psoriasis. Both the pathophysiology of psoriasis and the development of metabolic syndrome are linked to pro-inflammatory cytokines such as TNF-alpha, IL-17, and IL-23[4].

In the current investigation, male predominance was noted. However, prior research has found that the gender distribution varies based on environmental conditions and demographic characteristics. The average age of the patients was in their fourth decade, which is consistent with previous findings indicating that longer disease duration and advanced age are associated with greater metabolic risk. One of the most prevalent elements of the metabolic syndrome was obesity. As an active endocrine organ, adipose tissue produces inflammatory mediators that may exacerbate the severity of psoriasis and raise insulin resistance. Additionally, psoriasis patients' cardiovascular risk is greatly increased by central adiposity[5].

In this study, psoriasis patients also frequently had dyslipidemia and hypertension. Chronic inflammation may increase cardiovascular morbidity by promoting vascular abnormalities, oxidative stress, and endothelial dysfunction. Insulin resistance brought on by inflammatory cytokines may be connected to the hyperglycemia seen in a number of patients. The severity of psoriasis and metabolic syndrome were found to be significantly correlated. Obesity, hypertension, and dyslipidemia were more common in patients with higher PASI scores. Higher inflammatory burdens are linked to severe psoriasis, which may exacerbate metabolic disorders[6].

The results of this study highlight how crucial it is to evaluate psoriasis patients for metabolic syndrome as soon as possible. During clinical evaluation, dermatologists should regularly measure blood pressure, body mass index, waist circumference, blood glucose, and lipid profile. In psoriasis patients, early detection and treatment of metabolic syndrome may lower long-term cardiovascular morbidity and mortality. A nutritious diet, regular

exercise, quitting smoking, and weight loss are examples of lifestyle changes that should be firmly promoted. Comprehensive care requires interdisciplinary cooperation between dermatologists, doctors, endocrinologists, and cardiologists[7].

The current study's short duration and somewhat small sample size are among its drawbacks. Stronger causal links between the components of the metabolic syndrome and the severity of psoriasis require larger multicenter investigations. Overall, the current investigation demonstrates the strong correlation between psoriasis and metabolic syndrome. Patients with psoriasis may benefit from improved early diagnosis, preventative measures, and long-term management of cardiovascular risk factors if this link is well understood[8].

CONCLUSION

The current study comes to the conclusion that psoriasis is strongly linked to metabolic syndrome and each of its constituent parts, such as dyslipidemia, obesity, hypertension, and hyperglycemia. Patients with moderate to severe psoriasis had a greater prevalence of metabolic syndrome, suggesting a connection between metabolic abnormalities and inflammatory burden. These results demonstrate that psoriasis should be viewed as a systemic inflammatory illness with significant metabolic and cardiovascular ramifications rather than only a skin condition. For psoriasis patients to receive prompt treatment and avoid long-term consequences, early detection and screening for metabolic syndrome are crucial.

Clinical evaluation of psoriasis patients should include routine assessment of blood pressure, body mass index, blood glucose, and lipid profile. Multidisciplinary care and lifestyle changes can greatly enhance patient outcomes and lower cardiovascular morbidity. To better

understand the pathophysiological link between psoriasis and metabolic syndrome and to create effective preventive and treatment measures, more extensive prospective studies are advised.

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