



“ASSOCIATION BETWEEN PSORIASIS VULGARIS AND HYPERTENSION: A CROSS-SECTIONAL STUDY”

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Abstract

Background: Psoriasis vulgaris is a common chronic inflammatory dermatosis increasingly recognised as a systemic disease associated with cardiovascular comorbidities, including hypertension.

Objective: To determine the prevalence of hypertension among patients with psoriasis vulgaris attending a tertiary care dermatology outpatient department.

Methods: A hospital-based cross-sectional study was conducted over one year (January 2024 to January 2025). A total of 330 adult patients with psoriasis vulgaris were enrolled. Blood pressure was measured using standard procedures, and hypertension was defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg or current use of antihypertensive medications.

Results: Out of 330 patients, 102 (30.9%) were found to have hypertension. Higher prevalence was observed in patients aged ≥ 40 years, with longer disease duration and greater psoriasis severity.

Conclusion: Psoriasis vulgaris is associated with a high prevalence of hypertension, highlighting the importance of routine cardiovascular screening in dermatology practice.

Keywords: Psoriasis vulgaris; Hypertension; Psoriasis Area and Severity Index (PASI); Disease severity; Cardiovascular comorbidity; Tertiary care centre

Introduction

Psoriasis vulgaris is a chronic immune-mediated inflammatory skin disorder affecting approximately 2–3% of the global population and 0.4–2.8% of the Indian population.^{1–3} It represents the most common clinical subtype of psoriasis, accounting for nearly 85–90% of cases. Once considered a disease limited to the skin, psoriasis is now recognized as a systemic inflammatory condition associated with multiple comorbidities, particularly cardiovascular diseases.^{4–6}

Hypertension is one of the most prevalent modifiable cardiovascular risk factors worldwide and contributes significantly to morbidity and mortality. Chronic inflammation plays a central role in the pathogenesis of both psoriasis and hypertension, with shared inflammatory pathways involving

cytokines such as tumor necrosis factor- α , interleukin-6, and C-reactive protein.^{7,8} Several epidemiological studies and meta-analyses have demonstrated a significantly higher prevalence of hypertension among patients with psoriasis compared to the general population.⁹

Armstrong et al. reported a 1.58-fold increased risk of hypertension in patients with psoriasis,¹⁰ while other studies have shown that disease severity and duration further increase cardiovascular risk.¹¹ In tertiary care centres, psoriasis constitutes a considerable proportion of dermatology outpatient visits, yet data on hypertension prevalence in this population from Indian settings remain limited.

Therefore, the present study was undertaken to evaluate the association between psoriasis vulgaris and hypertension in patients attending a tertiary care dermatology outpatient department.

Methodology

A hospital-based cross-sectional study was conducted in the Department of Dermatology at a tertiary care teaching hospital over a period of one year (January 2024 to January 2025). Adult patients aged 18 years and above with a clinical diagnosis of psoriasis vulgaris attending the dermatology outpatient department were consecutively enrolled after obtaining written informed consent. Patients with psoriatic arthritis, pregnancy, known secondary causes of hypertension, chronic kidney disease, endocrine disorders, other systemic inflammatory diseases, or those receiving systemic corticosteroids for indications other than psoriasis were excluded from the study.

A total of 330 patients were included based on feasibility and outpatient attendance during the study period. Detailed demographic and clinical data, including age, sex, and duration of psoriasis, were recorded using a pre-designed case record form.

Blood pressure was measured using a calibrated mercury sphygmomanometer following standard guidelines. Measurements were taken after the patient had rested for at least five minutes in a seated position, and the average of two readings was recorded. Hypertension was defined as systolic blood pressure ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg, or a prior diagnosis of hypertension with current use of antihypertensive medication.

Psoriasis severity was assessed using the Psoriasis Area and Severity Index (PASI). Based on PASI scores, patients were categorised as: Mild psoriasis: PASI < 10 , Moderate psoriasis: PASI 10–20, Severe psoriasis: PASI > 20 . This severity classification was used consistently for analysis and for reporting results in severity-wise tables.¹¹

Data were entered into Microsoft Excel and analysed using appropriate statistical software. Descriptive statistics were used to summarise demographic and clinical variables. The chi-square test was applied to assess associations between psoriasis severity, disease duration, and hypertension. A p-value < 0.05 was considered statistically significant.

Results

A total of 330 patients with psoriasis vulgaris were included in the study. Among them, 102 patients (30.9%) were diagnosed with hypertension. Based on PASI scoring, 142 patients (43.0%) had mild psoriasis (PASI < 10), 118 patients (35.8%) had moderate psoriasis (PASI 10–20), and 70 patients (21.2%) had severe psoriasis (PASI > 20). The prevalence of hypertension showed a progressive increase with increasing psoriasis severity. Hypertension was present in 28 patients (19.7%) with mild psoriasis, 42 patients (35.6%) with moderate psoriasis, and 32 patients (45.7%) with severe psoriasis. This association between psoriasis severity and hypertension was statistically significant (Table 1). With respect to disease duration, patients with psoriasis of ≥ 5 years duration demonstrated a significantly higher prevalence of hypertension compared to those with disease duration of < 5 years. Hypertension was observed in 68 patients (39.1%) with longer disease duration versus 34 patients (21.8%) with shorter duration (Table 2).

Table 1. Association Between Psoriasis Severity and Hypertension

Psoriasis Severity (PASI)	Total (n)	Hypertension n (%)
Mild (PASI <10)	142	28 (19.7)
Moderate (PASI 10–20)	118	42 (35.6)
Severe (PASI >20)	70	32 (45.7)
Total	330	102 (30.9)

Table 2. Association Between Disease Duration and Hypertension

Disease Duration	Total (n)	Hypertension n (%)
< 5 years	156	34 (21.8)
≥ 5 years	174	68 (39.1)
Total	330	102 (30.9)

Discussion

In the present study, the prevalence of hypertension among patients with psoriasis vulgaris was **30.9%**, which is considerably higher than that reported in the general population. This finding supports the growing evidence that psoriasis is not merely a cutaneous disorder but a systemic inflammatory disease with significant cardiovascular implications. Similar prevalence rates have been reported in large observational studies and meta-analyses. Armstrong et al. demonstrated a significantly increased risk of hypertension among psoriasis patients compared with non-psoriatic controls.¹⁰ Zhang et al. further reported a pooled prevalence of hypertension ranging from 29% to 33% in patients with psoriasis, consistent with our observations.¹²

The association between psoriasis severity and hypertension observed in this study aligns with findings by Takeshita et al., who reported poorer blood pressure control in patients with moderate to severe psoriasis.¹³ This may be attributed to increased systemic inflammatory burden, endothelial dysfunction, and shared cytokine pathways such as TNF- α and interleukin-6. Chronic inflammation is also known to promote arterial stiffness and sympathetic overactivity, contributing to sustained hypertension.

Our study also found a significantly higher prevalence of hypertension in patients with longer disease duration, suggesting a cumulative inflammatory effect over time. Similar associations have been reported in previous studies, reinforcing the role of chronic immune activation in cardiovascular risk.^{8,9} Indian hospital-based studies have documented comparable findings, emphasizing that psoriasis patients in tertiary care settings represent a high-risk group for metabolic and cardiovascular comorbidities.¹⁴⁻¹⁶

Given the high outpatient burden of psoriasis in tertiary care centres, dermatologists play a pivotal role in early detection of hypertension. Incorporating routine blood pressure screening into psoriasis management can facilitate early intervention and potentially reduce long-term cardiovascular morbidity and mortality.

Conclusion

Psoriasis vulgaris is a common dermatological condition in tertiary care outpatient settings and is associated with a high prevalence of hypertension. Early identification and routine screening for hypertension should be incorporated into the standard management of psoriasis patients to reduce long-term cardiovascular morbidity.

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