

# Study of epidemiology, clinical features and co-morbidities in psoriasis

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## Abstract

**Background:** Psoriasis is a chronic, immune-mediated inflammatory skin disease that predominantly involves the skin, nails, and joints, often associated with systemic manifestations, marked by periods of remissions and exacerbations. Psoriasis has unknown etiology and characterized by well-defined erythematous papules and plaques surmounted by silvery white scales commonly seen over the elbows, knees, scalp and extensor surfaces. Psoriasis is likely to be accompanied by other chronic medical conditions like obesity, hypertension, dyslipidemia, diabetes mellitus (DM) and atherosclerotic complications. This study was aimed to evaluate clinical presentation and associated co-morbidities in patients with psoriasis. **Material and Methods:** This observational, prospective study was conducted in patients attending OPD and diagnosed as psoriasis. **Results:** During study period we had total 220 patients. Patients from age group 36-55 were 70.45%. The most common type of psoriasis in our study was psoriasis vulgaris (85.1%), followed by Palmoplantar psoriasis (14.09%), scalp psoriasis (5.91%). Common sites of involvement were upper extremities, lower extremities, scalp, trunk, nails having 86.82%, 84.55%, 80.45%, 75%, 65.91% percentage distribution respectively. Multiple conventional cardiovascular risk factors as hypertension (55.91%), metabolic syndrome (39.55%), dyslipidaemia (29.09%) in study patients. While cardiovascular comorbidities cardiovascular diseases (15.45%), myocardial infarction (2.73%), cerebral infarction (1.82%), cerebral haemorrhage (1.36%) noted. **Conclusion:** Psoriasis is a chronic dermatological disorder, having multifactorial pathologies, with chronic remissions and exacerbations. Furthermore, due to long standing course and associated co-morbidities, psoriasis-associated disabilities are common in patients. Such studies offer a general insight into the presentation, types of psoriasis and associated co-morbidities, which proves useful in management of psoriasis.

**Key Words:**

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## INTRODUCTION

Psoriasis is a chronic, immune-mediated inflammatory skin disease that predominantly involves the skin, nails, and joints, often associated with systemic manifestations. Psoriasis affects approximately 1.4-2% of

the world's population, with men and women being affected equally<sup>1</sup>. Psoriasis is seen commonly in dermatology OPD's, as this is a chronic disease marked by periods of remissions and exacerbations. Psoriasis has unknown etiology and characterized by well-defined erythematous papules and plaques surmounted by silvery white scales commonly seen over the elbows, knees, scalp and extensor surfaces. There are difficulties in tracking trends in incidence and prevalence of psoriasis, due to the different methodologies of research on this issue. However, an apparent upward trend is observed in several countries<sup>2</sup>.

Psoriasis is likely to be accompanied by other chronic medical conditions like obesity, hypertension, dyslipidemia, diabetes mellitus (DM) and atherosclerotic complications are associated with psoriasis which complicates disease management<sup>3</sup>. They also have an

increased risk of cardiovascular disease when compared with the normal population, and recent studies indicate that patients with severe psoriasis have higher mortality, primarily due to the increased risk of cardiovascular death<sup>4,5</sup>. Psoriasis is considered as an immune-mediated inflammatory disorder (IMID), alongside other entities such as rheumatoid arthritis, Crohn's disease and multiple sclerosis<sup>6</sup>. Psoriatic arthritis affects up to one-third of patients with psoriasis<sup>7</sup>. It is a seronegative spondyloarthritis involving both peripheral joints and axial skeleton, and usually begins as enthesitis i.e. the inflammation at tendon insertion. Many studies done worldwide have shown that psychiatric comorbidities are frequently found among patients with psoriasis<sup>8</sup>. This study was aimed to evaluate clinical presentation and associated co-morbidities in adult patients with psoriasis.

### MATERIAL AND METHODS

This observational, prospective study was conducted in patients with psoriasis, attending the outpatient department in Department of dermatology, RVM Institute of Medical Sciences and Research Centre for a period of 2-years from January 2016 to December 2018. All patients attending OPD and diagnosed as psoriasis were

included in study. By the time patients had diagnosed with skin disease other than psoriasis were excluded from study. During study period all details as demographic, social, detailed clinical history, routine blood investigations, skin biopsy, chest X-ray, bone X-ray and other investigations depending upon patient's condition were collected. Clinical history with special references to age, site of onset, past treatment, seasonal variation, triggering factors, family history of disease, other systemic diseases, and habits were noted. General physical examination, detailed mucocutaneous, and systemic examination were done. and the findings were recorded. The diagnosis of psoriasis was done on the basis of typical clinical picture and demonstration of typical clinical signs like Grattinage sign, Auspitz sign and candle wax sign. The severity of involvement was assessed on the basis of body surface area involvement (by rule of nines) and Psoriasis area and severity index measurement (PASI Score). A detailed note of the treatment received was made under the headings of topical (tar, dithranol, steroids, retinoids), Systemic (steroids, methotrexate, PUVA, retinoid), etc. This complete data entered in Microsoft excel sheet, analysis was done with appropriate statistical methods.

### RESULTS

Psoriasis is a multifactorial disease, clinical presentation of may vary from person to person also genetic and environmental factors greatly influence clinical presentation, severity, outcome and associated morbidity. Many patients with minimal clinical manifestations often do not seek medical attention or take treatment from general practitioner or take over the counter medicines. All these factors are responsible for wide differences in the prevalence of the disease among different ethnic groups and in different parts of the world. During study period we had total 220 patients confirmed with diagnosis of psoriasis.

Table 1: Distribution of Age and Gender

Age (years)	Male	Female	TOTAL
0-18	3	1	4 (1.82 %)
19-25	6	2	8 (3.64 %)
26-35	14	10	24 (10.91 %)
36-45	51	37	88 (40 %)
46-55	39	28	67 (30.45 %)
>55	18	11	29 (13.18 %)
<b>Total</b>	<b>131 (59.55 %)</b>	<b>89 (45.45 %)</b>	<b>220 (100 %)</b>

As noted in Table 1, there was a male predominance (59.55 % male and 45.45 % female). Patients from age group 36-55 were 70.45 %, which is significant.

Table 2: Type of psoriasis

ICD-10 code	Type of psoriasis	No of patients n	(%)
L40.0	Psoriasis vulgaris	161	73.18%
L40.1	Generalized pustular psoriasis	3	1.36%
L40.2	Acrodermatitis continua	0	0
L40.3	Pustulosis Palmaris et plantaris	0	0
L40.4	Guttate psoriasis	0	0
L40.5	Arthropathic psoriasis	0	0
L40.50	Unspecified	0	0
L40.51	Distal Interphalangeal psoriatic arthropathy	3	1.36%
L40.52	Psoriatic arthritis mutilans	0	0

L40.53	Psoriatic spondylitis	0	0
L40.54	Psoriatic juvenile arthropathy	0	0
L40.59	Other psoriatic arthropathy	5	2.27%
	Scalp psoriasis	13	5.91%
L40.8	Palmoplantar psoriasis	31	14.09%
	Nail psoriasis	4	1.82%
L40.9	Psoriasis unspecified	0	0

The most common type of psoriasis in our study was psoriasis vulgaris (85.1%), followed by Palmoplantar psoriasis (14.09 %), scalp psoriasis (5.91%). Other types like Other psoriatic arthropathy, Distal Interphalangeal psoriatic arthropathy and Nail psoriasis were also noted but in less amount.

**Table 3: Sites of involvement**

Site	Number of patients	Percentage
Upper extremities	191	86.82
Lower extremities	186	84.55
Scalp	177	80.45
Trunk	165	75
Nails	145	65.91
Face and neck	76	34.55
Palms and soles	34	15.45
Mucous membrane	6	2.73
Axilla	2	0.91
Periumbilical region	1	0.45

In psoriasis patients' multiple sites were involved simultaneously but common sites were upper extremities, lower extremities, scalp, trunk, nails having 86.82 %, 84.55 %, 80.45 %, 75 %, 65.91 % percentage distribution respectively.

## DISCUSSION

The onset of psoriasis can be at any time of life and it usually persists for life with relapses intermittently. The mean age of onset of psoriasis is at 33 years, and 75% of the patients develop psoriasis before 46 years of age<sup>9</sup>. Smith AE *et al.*<sup>10</sup> suggested onset of psoriasis is bimodal, first peak at 16- 22 and the other at 57-60 years of age. But onset of psoriasis is most common in the second to fourth decades of life<sup>11</sup>. We have noted similar findings in our study.

**Table 4: Associated co-morbidities**

Co-morbidities	No of patients	%
Hypertension	123	55.91%
Depression	120	54.55%
Diabetes mellitus	89	40.45%
Metabolic syndrome	87	39.55%
Dyslipidaemia	64	29.09%
Psoriatic arthritis	56	25.45%
Cardiovascular diseases	34	15.45%
COPD	22	10.00%
Myocardial infarction	6	2.73%
Crohn's disease	5	2.27%
Cerebral infarction	4	1.82%
Cerebral haemorrhage	3	1.36%

Psoriasis has been associated with numerous dermatologic and systemic diseases [Table 4]. Various co-morbid conditions are present in patients with psoriasis, association between these medical conditions and psoriasis, their effect on one another is a topic of research. Multiple conventional cardiovascular risk factors as hypertension (55.91%), metabolic syndrome (39.55%), dyslipidaemia (29.09 %) in study patients.

While cardiovascular comorbidities cardiovascular diseases (15.45%), myocardial infarction (2.73 %), cerebral infarction (1.82%), cerebral haemorrhage (1.36%) noted. Studies found association of psoriasis with conventional cardiovascular risk factors (e.g., metabolic syndrome, obesity, low physical activity, smoking, alcohol, lipid abnormalities, hypertension), and association of cardiovascular comorbidities, and

increased risk of myocardial infarction and myocardial infarction with psoriasis<sup>12,13</sup>. Miller IM *et al* in their meta-analysis, psoriasis is associated with cardiovascular disease and its risk factors, and not with cerebrovascular disease.<sup>14</sup> Our findings are consistent with above studies. Multiple Indian studies<sup>15,16,17,18</sup> documented higher incidence of metabolic syndrome, hypertension, dyslipidaemia, diabetes melitus and psoriatic arthropathy in patients with psoriasis. Generally, severity of co-morbidities is in direct proportion with severity and duration of psoriasis,

## CONCLUSION

Psoriasis is a chronic dermatological disorder, having multifactorial pathologies, with chronic remissions and exacerbations. It is commonly seen in the third and fourth decades with a male preponderance. Factors affecting psoriasis progress differs from patient to patient. Furthermore, due to long standing course and associated co-morbidities, psoriasis-associated disabilities are common in patients. Overall social, psychological impact of psoriasis on an individual can vary over time. Such studies offer a general insight into the presentation, types of psoriasis and associated co-morbidities, which proves useful in management of psoriasis.

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