e-ISSN: 0976-822X, p-ISSN:2961-6042

Available online on http://www.ijcpr.com/

International Journal of Current Pharmaceutical Review and Research 2026; 18(7); 894-901

Original Research Article

Clinico-Histopathological Study of Psoriasis And Its Variants: A Retrospective Observational Study in A Tertiary Care Center

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Received: 04-05-2026 / Revised: 22-05-2026 / Accepted: 20-06-2026

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Conflict of interest: Nil

Abstract:

Psoriasis is a group of common chronic inflammatory and proliferative skin conditions associated with systemic manifestations in many organ systems, affects 0.1% to 3% of the global population. Clinically, psoriasis presents with well-defined lesions featuring erythema and silvery white scales, often exhibiting the Auspitz sign.

Keywords: Munro-Micro Abscess, And Spongiform Pustules Of Kogoj.

DOI: 10.25258/ijcpr.18.7.138

Introduction

Histopathologically, it's marked by:

Epidermis- hyperkeratosis, parakeratosis, epidermal hyperplasia, supra – papillary thinning, elongated rete ridges, munro-micro abscess, and spongiform pustules of Kogoj.[1]

Dermis – inflammatory cell infiltrate ,capillary proliferation and dilatation. Dermal involvement precedes epidermal changes in psoriasis.[2]

The histopathological variants of Psoriasis includes;

Psoriasis Vulgaris

Palmo-Plantar Psoriasis

Guttate Psoriasis

Chronic Plaque Psoriasis

Pustular Psoriasis

Follicular Psoriasis

Histopathological features of Psoriasis

Hyperkeratosis: Thickening of the stratum corneum.

Parakeratosis: Presence of abrupt keratinization resulting in retained nuclei in stratum corneum.

Munro's micro abscess: Collections of neutrophils in the corneal layer

Spongiform pustule of Kogoj: Collections of neutrophils in the stratum spinosum.

Supra-papillary thinning: Thinning of the granular layer at the tips of the papillae.

Elongated rete ridges: Widened and club shaped rete ridges.

Spongiosis: Accumulation of extracellular fluid with in the epidermis with resultant separation of the keratinocytes.

Aims/ Objectives of study: To study histo-morphological features of psoriasis and its avariants with clinicopathological correlation.

Materials and Methods

Study site: Tertiary care center.

Duration:2 yrs (June 2022 to May 2024)

Study design: Observational retrospective study

Case selection: Study is carried out on all skin biopsies of clinically diagnosed or suspected cases of psoriasis.

Sample size: Total 33 skin wedge biopsies are received from department of dermatology of clinically diagnosed/suspected patients of psoriasis in formalin.

Processed in histopathology section of the Department of pathology

After routine processing and embedding, paraffin blocks were prepared.

4–6 µ thick sections were obtained and stained with haematoxylin and eosin stain. Detailed histopathological examination was done.

Inclusion Criteria: Patients of age group 5 to 70yrs and of both genders who are clinically diagnosed or suspected cases of psoriasis.

Exclusion Criteria: Inadequate biopsy samples

Patients unwilling for biopsy or not giving informed valid consent.

Observations and results:

Table 1:Age wise distribution of cases of Psoriasis

Sl No	Age wise - years	Number of cases	% of occurrence
1	0 – 10	2	6.5%
2	11 – 20	1	3%
3	21 – 30	11	37.5%
4	31 – 40	9	30%
5	41 – 50	3	10%
6	51 – 60	2	6.5%
7	61 – 70	2	6.5%
8	71 – 80	0	0
9	81 – 90	0	0
10	91 - 100	0	0

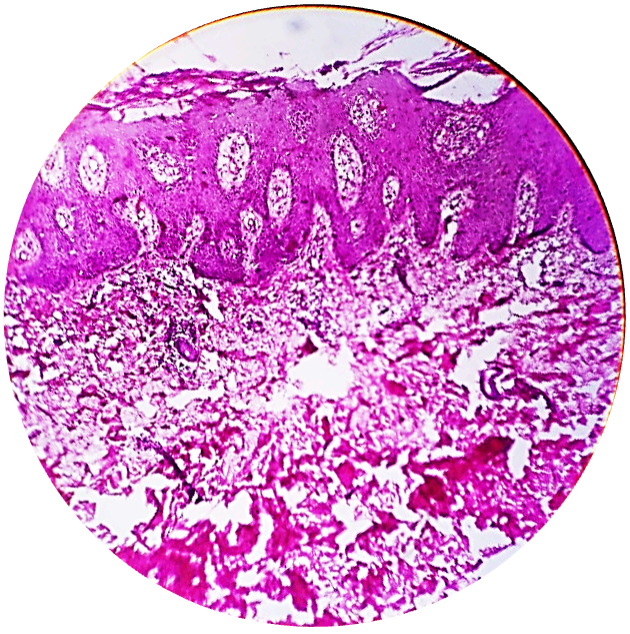
Maximum number of cases (11) were in the age group of 21 – 30yrs followed by (9) in the age group of 31 to 40 yrs. Eldest patient is of 65 yrs and youngest patient is 9yrs.

Out of 33 clinically diagnosed/suspected cases, 30 cases were histopathologically diagnosed; of which 18 cases were males and 12 cases were females, with male: female = 1.5:1.

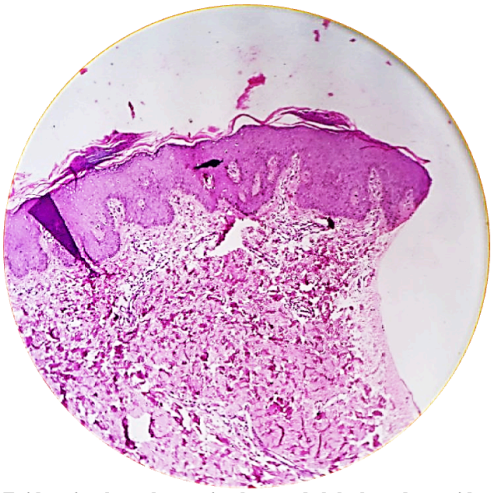
Table 2:cHistological types of psoriasis

Sl No	Histological types of psoriasis	No of cases detected	% Frequency
1	Psoriasis Vulgaris	23	76.6%
2	Chronic Plaque psoriasis	2	6.7%
3	Guttate psoriasis	2	6.7%
4	Pustular psoriasis	3	10%

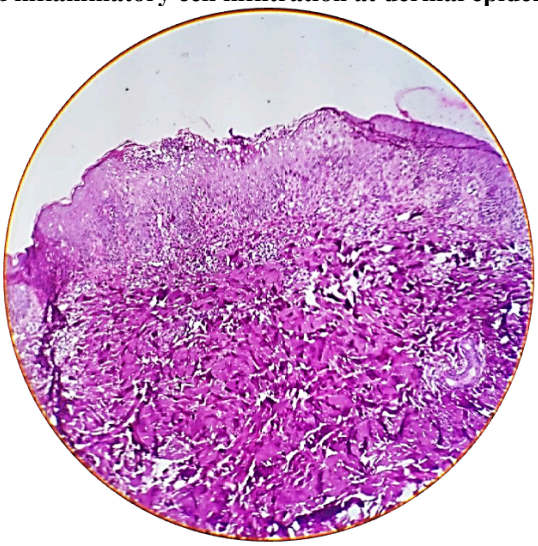
Psoriasis Vulgaris is the most common variant of psoriasis(23) diagnosed followed by pustular psoriasis(3) in our study. Two each of other 2 variants are guttate psoriasis and chronic plaque psoriasis.



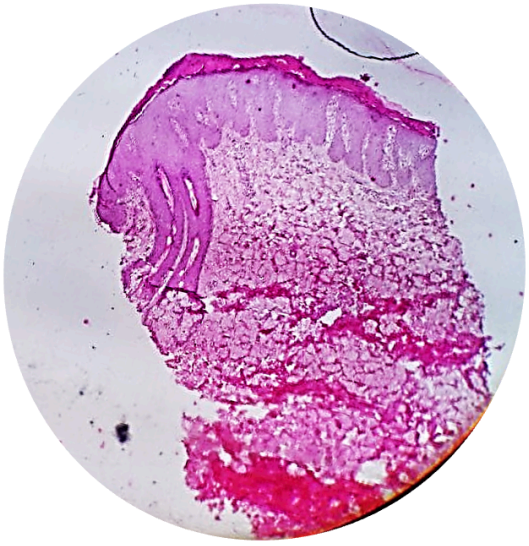
Epidermis – Hyperkeratosis, broad rete ridges, collection of neutrophilic infiltrate in stratum spinosum
Dermis – inflammatory cell infiltrate at dermal-epidermal junction



Epidermis – hyperkeratosis, elongated club shaped rete ridges, munro-microabscess
Dermis – mild inflammatory cell infiltration at dermal epidermal junction



Epidermis – acanthosis, mild parakeratosis, mild spongiosis, intra or subcorneal pustule with collection of large number of neutrophils, rete ridges wide bulge ends. Dermis - moderate inflammatory cell infiltration



Epidermis – acanthosis, hyperkeratosis , parakeratosis, elongated rete ridges
Dermis – perivascular and stromal lymphocytic infiltrate

Table 3: Cutaneous features of psoriasis

Sl no	Cutaneous features of Psoriasis	No of cases	% Frequency
1	Papules	3	10%
2	Plaques	24	80%
3	Scales	17	56.6%
4	Pustules	3	10%
5	Erythema	22	73.3%
6	Hypopigmented Halo	0	0
7	Exfoliation	2	6%
8	Auspitz sign	0	0
9	Koebner response	0	0

Amongst the cutaneous features, plaques (80%) was the commonest and exfoliation is less common(6%).

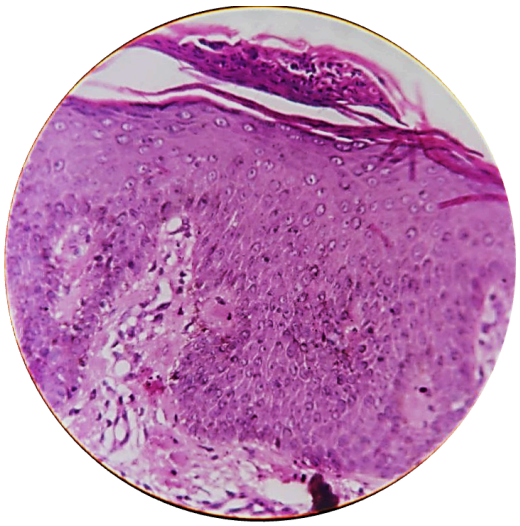
Table 4: Sites of involvement

Sl no	Site	No of cases having site involvement	% Percentage
1	Scalp	20	66.6%
2	Trunk	24	80%
3	Upper extremities	22	73.3%
4	Lower extremities	22	73.3%
5	Nails	12	40%
6	Palms and soles	12	40%
7	Face and neck	12	40%
8	Back	12	40%
9	Joints	12	40%

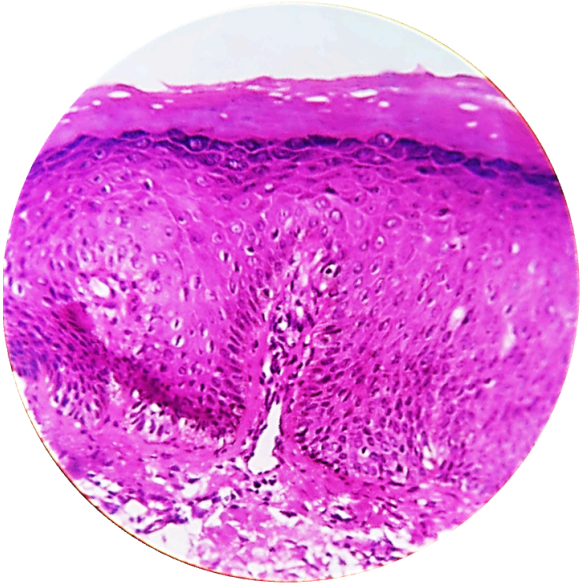
Amongst the sites of involvement; trunk, upper extremities and lower extremities are most commonly involved.

Table 5: Histopathological features of psoriasis

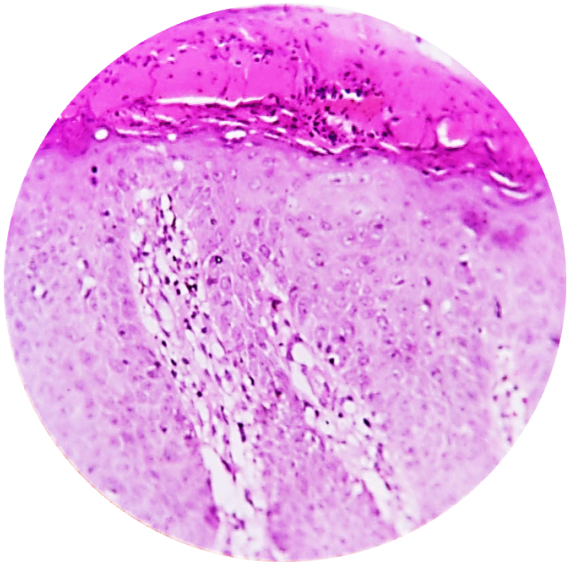
Sl no	Histopathological feature	No of cases	% of cases with positive finding
	Epidermal Features		
1	Hyperkeratosis	18	60%
2	Parakeratosis	18	60%
3	Acanthosis	26	86.6%
4	Munro-micro abscess	9	30%
5	Spongiform pustule of Kogoj	8	26.6%
6	Elongation of rete ridges	18	60%
7	Spongiosis	5	16.6%
8	Suprapapillary thinning	0	0
	Dermal Features		
10	Vascular proliferation	4	13.3%
11	Dilated and tortous capillaries	2	6%
12	Dermal infiltration	18	60%
13	Perivascular lymphocytic infiltration	12	40%



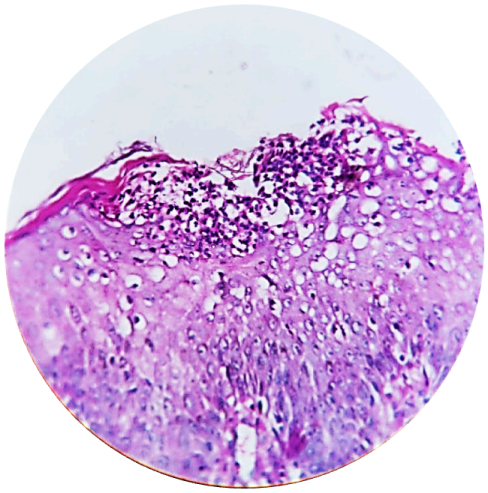
Epidermis – Munro-microabscess



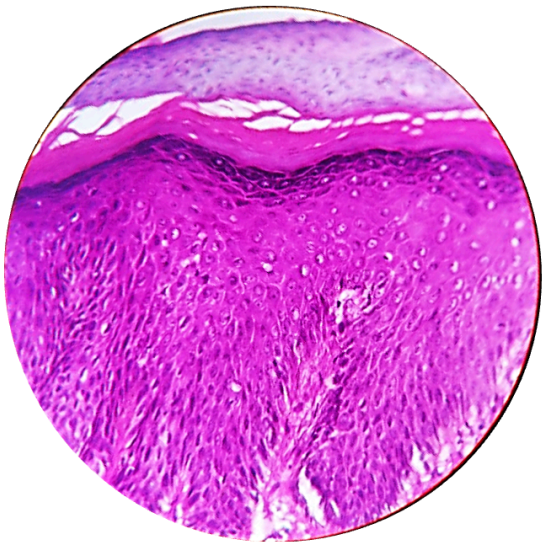
Epidermis – Parakeratosis



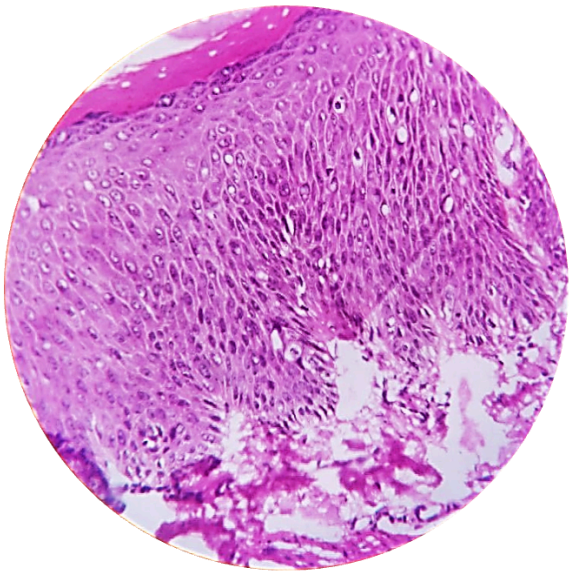
Epidermis – hyperkeratosis, parakeratosis, acanthosis



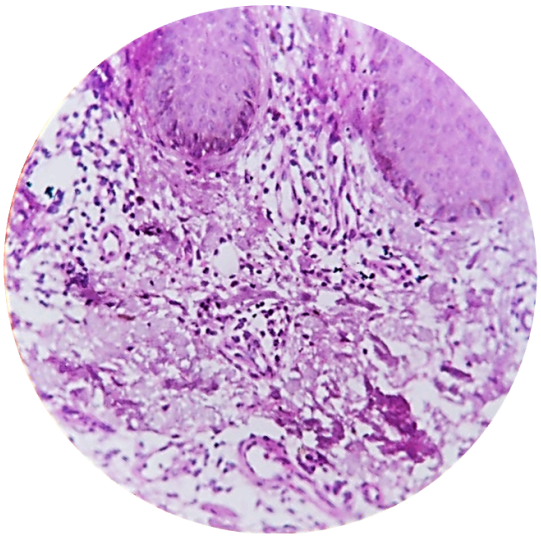
Epidermis – acanthosis , intra and subcorneal pustule with collection of large number of neutrophils



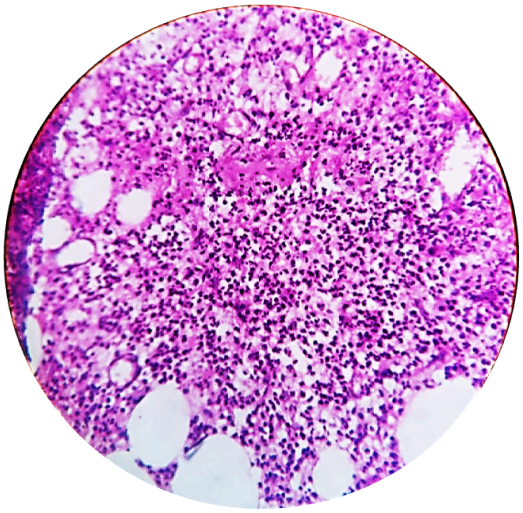
Epidermis – hyperkeratosis with neutrophilic infiltration, parakeratosis, acanthosis



Epidermis – hyperkeratosis, parakeratosis, acanthosis, elongated club shaped rete ridges



Dermis – mild inflammatory cell infiltration



Dermis – mild dilated congested capillaries, perivascular lymphocytic infiltration and abundant neutrophilic cell infiltration

Discussion:

Psoriasis is a chronic dermatological disorder characterized by periods of remission and exacerbation. Studies estimate a worldwide incidence of psoriasis ranging from 0.1% to 3%. Genetic and environmental factors greatly influence the clinical development of psoriasis.[6]

a.) Age: Most common age group of patients was between 21 to 40yrs [7]

b.)Gender: There were 18 males and 12 females in our study with male preponderance; male to female ratio = 1.5:1.

c.)Site: Most commonly involved sites are trunk and extremities followed by scalp and other regions.

d.)Clinical features: The most common symptom is itching and is variable in intensity, ranging from complete absence to severe pruritus in a minority of patients.

The most common clinical sign is Erythematous scaly plaques followed by other signs like pustules, papules, diffuse exfoliation directing towards diagnosis of other variants of psoriasis[8]

e.)Histopathology: In this study, acanthosis is the most common feature observed followed by parakeratosis, elongated rete ridges and hyperkeratosis. Munro microabscesses and spongiform pustules of Kogoj are diagnostic features of psoriasis and seen in some of the cases and is similar to the study done by **[9]**

Histopathological variants of Psoriasis

In this study, histopathologically psoriasis vulgaris is most common variant accounted for 23cases(76.6%) similar to the study conducted by [9]

The other variants encountered in this study are 3 case(10%)Pustular psoriasis and 2 case (6%) for

each of chronic plaque psoriasis and guttate psoriasis

Conclusion

Psoriasis, a chronic dermatological condition influenced by genetic and environmental factors, commonly affects individuals aged 21 to 40, with a male predominance (1.5:1).

The extremities and trunk were the most frequently involved sites.

Erythematous scaly plaques were the primary clinical presentation, with acanthosis as the most prevalent histopathological feature.

Psoriasis vulgaris was the most common variant, accounting for 76.6% of cases. These findings align with previous studies, highlighting the variability in clinical and histopathological features of psoriasis.

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