



# A REVIEW ON PSORIASIS

Sheetal S Mahamuni<sup>1</sup>, Swati S Bidri<sup>2</sup>, Asmita B Zodage, V. K. Khadkutkar\*

*Department of pharmaceuticals, Channabasweshwar Pharmacy College (degree), Latur 413512, Maharashtra, India.*

## Abstract:

Psoriasis is an autoimmune disorder. It is a common inflammatory skin condition that is characterized by the appearance of red scaly plaques and may affect any part of the body. It occurs when the immune system mistakes the skin cells as a pathogen, and sends out faulty signals that speed up the growth cycle of skin cells. It is an interplay of both environmental and genetic factors. Psoriasis Area Severity Index (PASI) is the most widely used measurement tool which assesses the severity of the condition and allows for the evaluation of treatment efficiency.

**Keywords:** psoriasis, autoimmune disorder, chronic skin condition, etc

## Introduction

Psoriasis is a type of autoimmune disorder. It is a common inflammatory skin condition that manifests as red scaly plaques and can affect any part of the body. The term psoriasis is derived from the Greek words "psora" (itching) and "iasis" (condition). The reported prevalence of psoriasis in countries ranges from 0.09% to 11.43%, making psoriasis a serious global problem affecting at least 100 million people.

It is distinguished by massive proliferation, thick inflammatory cell infiltrates, the formation of new blood vessels, changes in lymphatic structure, and impaired epidermal differentiation. It is characterized by scaly, red, coin-sized skin lesions on the elbows, knees, scalp, hands, and feet. Itching, irritation, stinging, and pain are all symptoms. It happens when the immune system misidentifies skin cells as pathogens and sends out faulty signals that speed up the skin cell growth cycle. It is caused by a combination of environmental and genetic factors.

Psoriasis is not contagious. Psoriasis tends to persist lifelong, fluctuating in severity and extent. The prevalence of this condition is higher in the adult population almost four times more than the pediatric population.

## Etiology

The cause of this chronic condition is unknown. It is complicated, and autoimmune factors play a significant role in this disease. ROS-mediated oxidative stress (caused by continuous exposure to UV radiation and other environmental stressors) aggravates psoriasis, disrupting the skin's integrated defence mechanism.

## Pathophysiology

The pathophysiology of psoriasis is mostly unclear. There are two fundamental theories regarding the physiology of psoriasis. The primary hypothesis explains the progression of psoriasis as a result of skin cell growth and proliferation as a result of hyper proliferation of epidermal cells and keratinocytes. In the second theory. T-cell-mediated immune system is the primary drivers of irritation, which promotes an overabundance of cell

development. Excessive skin cell production is a secondary reaction to an immune system-generated factor. As an example, a Langerhans cell in the dermis is an antigen-presenting cell that migrates to the lymph node (site of T-cell). The presence of Langerhans cells causes the activation of white blood cells.

### Types of psoriasis

- **Plaque psoriasis** - The most common type of psoriasis, plaque psoriasis causes dry, itchy, raised skin patches (plaques) covered with scales. There may be few or many. They usually appear on the elbows, knees, lower back and scalp. The patches vary in color, depending on skin color.



figure 1: Plaque psoriasis

- **Nail psoriasis** - Psoriasis can cause pitting, abnormal nail growth, and discoloration of the finger and toe nails. Nails with psoriasis may become loose and separate from the nail bed. The nail may crumble if the disease is severe.



figure 2: Nail psoriasis

- **Guttate psoriasis** - Guttate psoriasis is most affect in young adults and children. It is typically caused by a bacterial infection, such as strep throat. It is distinguished by small, drop-shaped, scaling spots on the trunk, arms, or legs.



figure 3: Guttate psoriasis

- **Inverse psoriasis** - Inverse psoriasis mainly affects the skin folds of the groin, buttocks and breasts. It causes smooth, inflamed patches of skin that worsen with friction and sweating. This type of psoriasis can be caused by fungal infections.



figure 4: Inverse psoriasis

- **Pustular psoriasis** - A rare form of psoriasis causes clearly defined pus-filled blisters. It can appear in large patches or in small patches on the palms or soles.



figure 5: Pustular psoriasis

- **Erythrodermic psoriasis**- Erythrodermic psoriasis, the least common type of psoriasis, can cover the entire body with a peeling rash that can itch or burn intensely. It can be either acute or chronic (chronic).



figure 6: Erythrodermic psoriasis

## Treatment

Psoriasis Area Severity Index (PASI) is the most widely used measurement tool which assesses the severity of the condition and allows for the evaluation of treatment efficiency. Common psoriasis treatments include: Steroid creams, Moisturizers for dry skin, Medication to slow skin cell production, Medicated lotions or shampoos, Vitamin D3 ointment, Vitamin A or retinoid cream.

## Topical Treatment

Topical therapy is used in mild to moderate psoriasis. Topical agents used are coal tar, dithranol, corticosteroids, vitamin D analog, and retinoids are used initially.

- **Corticosteroids**- These drugs are the most frequently prescribed medications for treating mild to moderate psoriasis. Mild corticosteroid ointments (hydrocortisone) are usually recommended for sensitive areas, such as the face or skin folds, and for treating widespread patches. Some of the corticosteroids used are clobetasol propionate 0.05%, amcinonide 0.1%, betamethasone dipropionate, betamethasone valerate as 0.1%, 0.12% and 1%, halcinonide 0.1%, desoximetasone 0.25% and mometasone furoate. For severe treatment stronger

corticosteroid cream or ointment- triamcinolone (Triamex) or clobetasol (Cormax, Temovate, others) - for smaller, less-sensitive or tougher-to-treat areas.

- **Vitamin D analogues-** Synthetic forms of vitamin D - such as calcipotriene (Dovonex, Sorilux) and calcitriol (Vectical) - slow skin cell growth. This type of drug may be used alone or with topical corticosteroids. Calcitriol may cause less irritation in sensitive areas. Calcipotriene and calcitriol are usually more expensive than topical corticosteroids.
- **Retinoids-** Tazarotene (Tazorac, Avage, others) is available as a gel or cream.
- **Calcineurin inhibitors-** Calcineurin inhibitors such as tacrolimus (Protopic) and pimecrolimus (Elidel) calm the rash and reduce scaly buildup. They can be especially helpful in areas of thin skin, such as around the eyes, where steroid creams or retinoids are irritating or harmful.
- **Salicylic acid-** Salicylic acid shampoos and scalp solutions reduce the scaling of scalp psoriasis.
- **Coal tar-** Coal tar reduces scaling, itching and inflammation.
- **Anthralin -** Anthralin is a tar cream that slows skin cell growth. It can also remove scales and make skin smoother. It's not intended for use on the face or genitals.

### Systemic Treatment

If the condition is moderate to severe psoriasis, or if other treatments haven't worked, then the systematic treatment is given. Some of these drugs are used for only brief periods and might be alternated with other treatments because they have potential for severe side effects. These drugs, usually administered by injection, alter the immune system in a way that disrupts the disease cycle and improves symptoms and signs of disease within weeks. Several of these drugs are approved for the treatment of moderate to severe psoriasis in people who haven't responded to first line therapies. Options include apremilast (Otezla), etanercept (Enbrel), infliximab (Remicade), adalimumab (Humira), ustekinumab (Stelara), secukinumab (Cosentyx), ixekizumab (Taltz), guselkumab (Tremfya), tildrakizumab (Ilumya) and certolizumab (Cimzia). Three of them etanercept, ixekizumab and ustekinumab are approved for children.

### Conclusions

Psoriasis is a systemic immune disease characterised by complex pathogenic interactions between the immune system and the skin. An immune system that is both innate and adaptive Innovative biological therapeutics have been targeted. The therapeutic paradigm is shifting from short-term to long-term. Acute rash intervention for long-term result control, taking into account both the skin and the hair Comorbid diseases and symptoms. Through early detection and complete treatment of psoriasis patients' medical risks, is reduced.

### References

1. Siddhartha Dutta , Shalini Chawla, Sahil Kumar et al. Psoriasis: A Review of Existing Therapies and Recent Advances in Treatment 2018.
2. Samuel T. Hwang<sup>1</sup> , Tamar Nijsten<sup>2</sup> and James T. Elder et al. Recent Highlights in Psoriasis Research 2017 .Journal of Investigative Dermatology 137, 550-556;
3. Hagg D, Eriksson M, Sundstrom A, Schmitt-Egenolf M. The higher proportion of men with psoriasis treated with biologics may be explained by more severe disease in men. PLoS One 2013; 8: e63619.

4. Ortonne J, Chimenti S, Luger T, Puig L, Reid F, Trueb RM. Scalp psoriasis: European consensus on grading and treatment algorithm. *J Eur Acad Dermatol Venereol* 2009; 23: 1435–44.
5. Runne U. Alopecia psoriatica. Charakteristika eines bisher negierten Krankheitsbildes. *Hautarzt* 1993; 44: 691–92.
6. Di Cesare A, Di Meglio P, Nestle FO. The IL-23/Th17 axis in the immunopathogenesis of psoriasis. *J Invest Dermatol* 2009; 129: 1339–50.
7. Elder JT, Bruce AT, Gudjonsson JE, et al. Molecular dissection of psoriasis: integrating genetics and biology. *J Invest Dermatol* 2010; 130: 1213–26.
8. Sabat R, Philipp S, Hoflich C, et al. Immunopathogenesis of psoriasis. *Exp Dermatol* 2007; 16: 779–98.
9. Boehncke WH, Boehncke S, Schon MP et al. Managing comorbid disease in patients with psoriasis. *BMJ* 2010; 340: b5666.
10. Marrakchi S, Guigue P, Renshaw BR, et al. Interleukin-36-receptor antagonist deficiency and generalized pustular psoriasis. *N Engl J Med* 2011; 365: 620–28.

