

Psoriasis

Pathogenesis, Assessment, and Therapeutic Update



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KEYWORDS

• Psoriasis • Biologics • Psoriatic comorbidities • Psoriatic arthritis

KEY POINTS

- Psoriasis is a chronic condition that affects more than 7 million Americans.
- The disorder has no known cure but today an overwhelming majority of patients can achieve good to excellent control.
- Over the past 2 decades, enhanced understanding of the immunologic basis of psoriasis has led to the development of new systemic agents that have revolutionized the management of this disease.
- There are significant barriers to optimal management, which include expense, patient compliance, and medication safety.
- When dealing with this disease, health care providers should strive to identify the most efficacious treatment associated with the fewest possible adverse events delivered at a reasonable cost.

Psoriasis is a chronic immune-mediated inflammatory disease that affects more than 7 million Americans and 2% to 4% of the population worldwide.^{1–3} Affected individuals are impacted both psychologically and physically. Patients with psoriasis are at increased risk of developing anxiety and depression⁴ as well as cardiometabolic and rheumatologic comorbidities, all of which can greatly reduce quality of life.⁵ Most patients with psoriasis require chronic care, and disease-associated therapeutic management costs billions of dollars on an annual basis in the United States.⁶

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PATHOGENESIS

Psoriasis in predisposed individuals can be triggered by several factors, including infection, medications, and trauma (also known as the Koebner effect). Research over the past 2 decades confirms that psoriasis is a disorder resulting from immune dysregulation.⁷ A complex relationship involving macrophages, dendritic cells, T cells, and cytokines induce many of the pathologic changes associated with this disease. Activated cells produce mediators of inflammation, such as tumor necrosis factor (TNF) and interleukins (ILs) 17 and 23, and it is this inflammatory response that eventuates in the skin and joint disease. Understanding the immunologic basis of psoriasis has led to the development of new therapies and a revolutionary approach to management.

GENETICS

Psoriasis has a significant genetic predisposition, with elevated incidence in first-degree and second-degree relatives.⁸ Incidence is equal in men and women. In the United States, the prevalence of psoriasis is highest in whites (3.6%) followed by blacks (1.9%) and Hispanics (1.6%).⁹ The mode of inheritance is intricate and several chromosomal loci are associated with disease.¹⁰ In genetically susceptible individuals, various antigens are capable of activating T cells, resulting in hyperproliferation of keratinocytes, altered epidermal differentiation, and cutaneous inflammation. One antigen in particular, associated with streptococcal infection, has been causally related to onset and flare of psoriasis.¹¹

CLINICAL PRESENTATIONS OF PSORIASIS

Five subtypes of psoriasis are recognized: plaque, guttate, pustular, inverse, and erythrodermic.

Plaque psoriasis (**Figs. 1–3**) is the most common presentation, comprising 85% to 90% of all cases.¹² The condition manifests as well-demarcated erythematous plaques with xerotic, silvery scale that can attain several centimeters in diameter. Removal of scales results in punctate bleeding (Auspitz sign). Individual lesions may be irregular, round, or ovoid and may be sparsely located or occur in a generalized distribution covering a majority of the body surface. The most common locations are the scalp, trunk, buttocks, and limbs. Extensor surfaces, such as the elbows and knees, are frequently involved and may be the first and only presentation of disease. Approximately 80% of patients suffer from mild to moderate disease, which covers less than 10% of the body surface area, whereas the remainder are afflicted with moderate to severe disease.¹³

Guttate psoriasis is characterized by 1-mm to 10-mm, pink to erythematous colored papules, often covered with fine scale (**Fig. 4**). This variant of psoriasis most commonly arises in individuals younger than 30 years and is located primarily on the trunk and the proximal extremities, occurring in less than 2% of patients with psoriasis. Guttate psoriasis may be preceded by group A β -hemolytic streptococcal pharyngitis and may improve or resolve with antibiotic therapy or evolve into plaque psoriasis.¹⁴

Pustular psoriasis is an uncommon subtype that can be divided into generalized and localized forms. The acute generalized form, also known as the von Zumbusch variant, is a severe and explosive condition accompanied by fever that presents with multiple sterile pustules arising on an erythematous or dusky background (**Fig. 5**). Rapid progression and systemic toxicity may be life threatening. Localized forms of pustular

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