



Perspective

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Advances in Psoriasis Management: From Conventional Therapies to Biologics

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Abstract

Psoriasis is a chronic inflammatory skin disease affecting millions worldwide, characterized by red, scaly plaques and associated comorbidities. This article reviews traditional and modern management strategies, highlighting the evolution from topical and systemic therapies to biologic agents targeting specific immune pathways. Recent research has improved understanding of the immunopathogenesis of psoriasis, leading to targeted treatments that offer better efficacy and safety profiles. Additionally, advancements in phototherapy and small molecule inhibitors present promising options for refractory cases. This review explores the mechanisms, benefits, limitations, and future directions in psoriasis treatment.

Keywords: Psoriasis; Biologics; Phototherapy; Immunopathogenesis; Dermatology

Introduction

Psoriasis is a chronic, immune-mediated skin condition affecting approximately 2–3% of the global population. It manifests in various forms, with plaque psoriasis being the most prevalent. The disease has a substantial impact on patients' quality of life due to its visible lesions and associated psychological burden. Over the decades, treatment has evolved from broad immunosuppressants to targeted biologic therapies, transforming disease management and patient outcomes [1].

Epidemiology and risk factors

Psoriasis prevalence varies geographically, with higher rates in Western countries and lower in tropical regions. Genetic predisposition plays a significant role, particularly HLA-Cw6 allele associations. Environmental factors such as infections, stress, obesity, and smoking can trigger or exacerbate symptoms.

Pathophysiology and immune mechanisms

The immunopathogenesis of psoriasis involves complex

interactions between keratinocytes, dendritic cells, and T-helper lymphocytes, particularly Th17 cells. Cytokines such as IL-17, IL-23, and TNF- α drive inflammation and abnormal keratinocyte proliferation. Understanding these immune pathways has guided the development of biologic agents that specifically target these cytokines [2].

Traditional therapies

Before biologics, treatment relied on topical corticosteroids, vitamin D analogs, coal tar, and systemic agents such as methotrexate and cyclosporine. While effective in reducing symptoms, these treatments often have significant side effects, limited long-term efficacy, and require frequent monitoring.

Phototherapy in psoriasis

Phototherapy using narrowband UVB or PUVA (psoralen plus UVA) has long been used for moderate to severe psoriasis. It works by slowing keratinocyte proliferation and modulating immune activity. Phototherapy remains a valuable option for patients who cannot tolerate systemic agents, though accessibility and time commitment limit its use [3].

Biologic therapies: revolutionizing treatment

Biologics target specific immune mediators rather than suppressing the entire immune system. TNF- α inhibitors (e.g., etanercept, adalimumab), IL-12/23 inhibitors (e.g., ustekinumab), IL-17 inhibitors (e.g., secukinumab), and IL-23 inhibitors (e.g., guselkumab) have shown remarkable efficacy in clearing psoriatic plaques and improving quality of life.

Small molecule inhibitors

Oral agents such as apremilast, a phosphodiesterase-4 inhibitor, provide an alternative for patients preferring non-injectable therapy. These drugs offer moderate efficacy with a favorable safety profile but may not match biologics in potency for severe disease [4].

Comorbidities and holistic management

Psoriasis is associated with comorbidities including psoriatic arthritis, metabolic syndrome, and cardiovascular disease. Effective management involves multidisciplinary care addressing skin lesions, systemic inflammation, and lifestyle factors such as diet, exercise, and smoking cessation.

Patient-centered care and adherence

Patient education, shared decision-making, and addressing psychosocial needs are critical to ensure treatment adherence. The choice of therapy should consider patient preferences, comorbidities, and risk tolerance [5].

Future directions

Ongoing research is exploring next-generation biologics, novel topical agents, and combination therapies that enhance efficacy while minimizing side effects. Precision medicine approaches, integrating genetic and biomarker profiling, may soon allow personalized treatment strategies for psoriasis.

Conclusion

The treatment of psoriasis has undergone significant transformation, with biologics setting new standards for efficacy and safety. While traditional therapies still play a role, targeted treatments have redefined management and improved quality of life for patients. Future advances hold promise for even more personalized and effective care.

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