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Commentary

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Advances in Biologic Therapies for Moderate-to-Severe Psoriasis

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Abstract

Psoriasis is a chronic, immune-mediated skin disorder characterized by erythematous, scaly plaques, significantly impacting quality of life. Traditional systemic therapies, such as methotrexate and cyclosporine, offer varying degrees of symptom control but are limited by adverse effects and loss of efficacy over time. Biologic therapies have revolutionized psoriasis management by specifically targeting cytokines and immune pathways involved in disease pathogenesis. Agents targeting tumor necrosis factor-alpha (TNF-α), interleukin (IL)-12/23, IL-17, and IL-23 have demonstrated high efficacy, improved safety profiles, and sustained long-term disease control. This review discusses the mechanisms, clinical trial evidence, and comparative effectiveness of biologic therapies in moderate-to-severe psoriasis, along with future perspectives in personalized dermatologic care.

Keywords: Psoriasis; Biologic therapy; IL-17 inhibitors; TNF-α inhibitors; Dermatology

Introduction

Psoriasis affects approximately 2–3% of the global population and is associated with systemic comorbidities, including psoriatic arthritis, cardiovascular disease, and metabolic syndrome [1]. The disease pathogenesis involves dysregulated immune activation, leading to keratinocyte hyperproliferation and inflammatory infiltration in the skin. While topical agents suffice for mild disease, moderate-to-severe cases require systemic therapy for optimal disease control.

Description

The underlying immunopathology of psoriasis centers around the IL-23/IL-17 axis and TNF-α-mediated inflammation [2]. Biologic therapies target specific cytokines, thereby minimizing off-target effects associated with conventional immunosuppressants.

Results

Randomized controlled trials have demonstrated that IL-17 and IL-23 inhibitors achieve higher Psoriasis Area and Severity Index (PASI) 90 and 100 responses compared to TNF-α inhibitors [3]. For example, in the VOYAGE-1 trial, guselkumab achieved PASI 90 in 73.3% of patients at week 16, significantly outperforming adalimumab. Long-term extension studies show sustained disease control for up to 5 years with agents like secukinumab and risankizumab [4]. Minimal cumulative toxicity and targeted action have contributed to their favorable safety profile.

Discussion

Biologics provide rapid onset of action, higher efficacy rates, and reduced systemic toxicity compared to methotrexate or cyclosporine [5]. Furthermore, they reduce systemic inflammation, potentially lowering the risk of cardiovascular events. Despite their benefits, biologics have drawbacks, including high cost, need for parenteral administration, and potential risk of infection reactivation. Immunogenicity may also result in reduced efficacy over time. Research is focusing on personalized treatment strategies, identifying biomarkers for predicting treatment response, and developing oral small-molecule inhibitors targeting the same inflammatory pathways.

Conclusion

Biologic therapies represent a paradigm shift in psoriasis management, offering targeted and effective options for patients with moderate-to-severe disease. While cost and accessibility remain challenges, ongoing research promises to refine treatment selection and improve patient outcomes.

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