

IL-17 Inhibitors: Advancements in Targeted Therapy for Autoimmune and Inflammatory Diseases

Introduction

Interleukin-17 (IL-17) is a pro-inflammatory cytokine primarily produced by Th17 cells and plays a critical role in host defense against extracellular pathogens. However, dysregulated IL-17 signaling contributes to the pathogenesis of several autoimmune and inflammatory diseases, including psoriasis, psoriatic arthritis, and ankylosing spondylitis. IL-17 inhibitors are targeted biologic therapies that selectively block IL-17 or its receptor, offering a novel approach to controlling immune-mediated inflammation.

Mechanism of Action

IL-17 promotes the recruitment of neutrophils, production of pro-inflammatory cytokines, and activation of keratinocytes and fibroblasts. Overactivation of this pathway drives tissue inflammation, joint damage, and skin lesions in autoimmune conditions.

IL-17 inhibitors, such as secukinumab and ixekizumab, neutralize IL-17A, while brodalumab targets the IL-17 receptor, preventing downstream inflammatory signaling. By blocking these pathways, IL-

17 inhibitors reduce local and systemic inflammation, improving clinical manifestations and halting disease progression.

Safety and Monitoring

IL-17 inhibitors are generally well tolerated. Common adverse effects include upper respiratory infections, injection site reactions, and mild gastrointestinal symptoms. Because IL-17 contributes to mucosal defense, patients may experience increased susceptibility to fungal infections. Routine monitoring of infection signs and vaccination status is recommended prior to initiating therapy.

Conclusion

IL-17 inhibitors represent a significant advancement in targeted immunotherapy for autoimmune and inflammatory diseases. By selectively modulating IL-17-mediated pathways, these agents provide effective control of skin and joint inflammation while improving patient quality of life. Ongoing studies will expand their therapeutic applications and optimize their role in personalized management strategies for immune-mediated disorders.

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