Introduction

Therapeutic Targets for Rheumatoid Arthritis

Rheumatoid arthritis (RA) is a chronic, often debilitating disease characterized by inflammation and progressive joint damage. In recent years, there have been promising advancements in the treatment of RA. Improved understanding of the intercellular and intracellular pathways involved in the pathogenesis of RA has clarified the role of the classic disease modifying antirheumatic drugs (DMARD) and allowed the identification of novel targets for a group of drugs called biologic response modifiers, or biologics.

The pathogenesis of RA is highly complex, and several key mechanisms of joint destruction have been identified. The synovium is the primary site of inflammation in RA, and the synovial lining is the primary source of inflammatory cytokines and proteases that, in concert with activated chondrocytes and osteoclasts, contribute to joint destruction. Key agents include T cells, B cells, antigen-presenting cells, and synovial cells. The multiple pathways involved in the pathogenesis of RA allow for multiple potential targets for therapy. To date, many of these targets have been tested, but few have shown efficacy in the treatment of RA. The pathways that have been successfully targeted for therapy include the cytokines tumor necrosis factor (TNF-α) and interleukin 1 (IL-1), B cells, osteoclasts, and costimulatory molecules.

Not all patients respond to methotrexate therapy, the current mainstay of treatment. The biologic agents, such as anti-TNF agents, IL-1 inhibitors, B cell-depleting antibodies, and selective costimulation inhibitors, are showing promise in improving outcomes for these patients.

The aim of this supplement is to provide the reader with a comprehensive update on the management of RA in the era of biologic therapy. Boulos Haraoui reviews current strategies in the assessment and management of RA. Edward Keystone discusses the clinical implications of radiographic findings in the management of RA. Tony Russell provides a comparative overview of the clinical efficacy of the biologic therapies, and Majed Khraishi reviews the available safety data for these biologics in the treatment of RA. George Wells reviews the current trend toward the use of patient-reported outcomes in the management of RA, and Andy Thompson discusses the effect that this trend has had on the practical aspects of therapeutic interventions. Finally, Vivan Bykerk addresses the unmet needs that remain in the treatment of RA.

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