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IMMUNOLOGICAL BIOMARKERS AND CYTOKINE DYNAMICS IN RHEUMATOID ARTHRITIS DURING BASIC DISEASE-MODIFYING THERAPY

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Abstract

Rheumatoid arthritis (RA) is a chronic autoimmune inflammatory disease characterized by progressive joint destruction, systemic immune activation, and heterogeneous clinical presentation. Modern research emphasizes the importance of integrated immunological markers for early diagnosis, disease stratification, and therapeutic monitoring. The combination of autoantibody profiling and cytokine analysis allows a deeper understanding of immune mechanisms underlying disease activity and progression. Rheumatoid arthritis (RA) is a chronic autoimmune inflammatory disease characterized by progressive joint destruction, systemic immune activation, and heterogeneous clinical presentation. Modern research emphasizes the importance of integrated immunological markers for early diagnosis, disease stratification, and therapeutic monitoring. The combination of autoantibody profiling and cytokine analysis allows a deeper understanding of immune mechanisms underlying disease activity and progression.

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Keywords: Rheumatoid arthritis, immunological biomarkers, cytokine dynamics, pro-inflammatory cytokines, anti-inflammatory cytokines, disease-modifying antirheumatic drugs, immune response, inflammation, treatment efficacy.

Introduction

Purpose of the study

Rheumatoid arthritis (RA) is a chronic autoimmune inflammatory disease characterized by progressive joint destruction, systemic immune activation, and heterogeneous clinical presentation. Modern research emphasizes the importance of integrated immunological markers for early diagnosis, disease stratification, and therapeutic monitoring. The combination of autoantibody profiling and cytokine analysis allows a deeper understanding of immune mechanisms underlying disease activity and progression.

Research objectives

Rheumatoid arthritis (RA) is a chronic autoimmune inflammatory disease characterized by progressive joint destruction, systemic immune activation, and heterogeneous clinical presentation. Modern research emphasizes the importance of integrated immunological markers for early diagnosis, disease stratification, and therapeutic monitoring. The combination of autoantibody profiling and cytokine analysis allows a deeper understanding of immune mechanisms underlying disease activity and progression. Rheumatoid arthritis (RA) is a chronic autoimmune inflammatory disease characterized by progressive joint destruction, systemic immune activation, and heterogeneous clinical presentation. Modern research emphasizes the importance of integrated immunological markers for early diagnosis, disease stratification, and therapeutic monitoring. The combination of autoantibody profiling and cytokine analysis allows a deeper understanding of immune mechanisms underlying disease activity and progression.

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Conclusions of the research

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