RHEUMATOID ARTHRITIS: PATHOGENESIS, CLINICAL MANIFESTATIONS, DIAGNOSTIC APPROACHES, AND MODERN THERAPEUTIC STRATEGIES

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ABSTRACT

Rheumatoid arthritis is one of the most common autoimmune diseases in rheumatology. It predominantly affects small joints and may lead to irreversible deformities and disability if untreated. Genetic predisposition, smoking, infections, and immune dysregulation are major factors contributing to disease development. Modern therapeutic approaches have dramatically improved patient prognosis.

Introduction

Rheumatoid arthritis is one of the most common autoimmune diseases in rheumatology. It predominantly affects small joints and may lead to irreversible deformities and disability if untreated. Genetic predisposition, smoking, infections, and immune dysregulation are major factors contributing to disease development. Modern therapeutic approaches have dramatically improved patient prognosis.

Materials and Methods

This article is based on evidence collected from PubMed, Scopus, Web of Science, Google Scholar, and international rheumatology guidelines including ACR and EULAR recommendations. Peer-reviewed clinical trials, systematic reviews, and meta-analyses published between 2000 and 2026 were included. Data were analyzed regarding epidemiology, pathogenesis, clinical manifestations, diagnosis, and treatment outcomes.

Results

The analysis demonstrated that rheumatoid arthritis affects approximately 0.5–1% of the global population, predominantly women. Key inflammatory cytokines including TNF-α, IL-1, and IL-6 play essential roles in synovial inflammation and joint destruction. Methotrexate remains the cornerstone of treatment, while biologic DMARDs and Janus kinase inhibitors significantly improve remission rates. Early diagnosis and treat-to-target strategies reduce long-term disability and radiographic progression.

Discussion

Rheumatoid arthritis remains a major clinical and socioeconomic challenge worldwide. Advances in immunology have enabled the development of targeted biologic therapies that substantially improve disease control. However, long-term therapy requires careful

monitoring due to infection risks and adverse effects. Future research focuses on precision medicine, biomarker-guided therapy, and individualized treatment approaches.

Conclusion

Rheumatoid arthritis is a chronic autoimmune inflammatory disease associated with progressive joint destruction and systemic complications. Early diagnosis, continuous monitoring, and timely initiation of disease-modifying therapy are essential for preventing disability and improving quality of life. Modern biologic and targeted therapies continue to transform disease management and prognosis..

References:

1. Smolen JS, Aletaha D, McInnes IB. Rheumatoid arthritis. Lancet. 2016.
2. McInnes IB, Schett G. The pathogenesis of rheumatoid arthritis. N Engl J Med. 2011.
3. Singh JA et al. 2021 American College of Rheumatology Guideline.
4. Harrison's Principles of Internal Medicine. 21st Edition.
5. Oxford Textbook of Rheumatology.
6. Nature Reviews Rheumatology.
7. Journal of Autoimmunity Publications