

A PERSONALIZED APPROACH TO CHOOSING THERAPY FOR RHEUMATOID ARTHRITIS, TAKING INTO ACCOUNT THE SYNERGETIC INFLUENCE OF IMMUNOLOGICAL AND GENETIC FACTORS

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Relevance. The development of the concept of personalized medicine opens new possibilities for improving the effectiveness of rheumatoid arthritis treatment. The synergistic interaction of immune and genetic factors determines individual susceptibility to drug therapy and shapes the clinical phenotype of the disease. The development of algorithms integrating molecular genetic and immunological data is a priority area in modern rheumatology, enabling a shift from empirical drug selection to evidence-based personalized treatment.

The aim of the study was to comparatively evaluate the synergistic effect and correlation of systemic inflammation markers and genetic polymorphisms on clinical manifestations, disease activity and efficacy of sDMARDs, bDMARDs and tsDMARDs, as well as to improve personalized therapy taking into account the identified factors.

Material and methods. The study involved 150 patients with rheumatoid arthritis and 30 healthy individuals. The comprehensive analysis included a clinical examination using instrumental diagnostic methods, immunological monitoring of TNF- α , IL-6, IL-17A levels, and lymphocyte subsets, as well as a genetic and molecular study of TNF 308 G/A, IL-6 174G/C, and STAT3 rs 4796793 gene polymorphisms. Statistical data processing was performed using correlation and regression analyses to determine the significance of the relationships obtained.

Results. It has been established that the combination of elevated levels of proinflammatory cytokines with certain genotypes of TNF, IL-6, and STAT3 is associated with a more aggressive course of rheumatoid arthritis, pronounced erosive activity, and selective sensitivity to various classes of drugs. An approach has been developed for the personalized prescription of synthetic disease-modifying, biological, and targeted therapies based on the patient's integrated immunogenetic profile. This

algorithm increases the rate of clinical remission, reduces the time it takes to select optimal therapy, and reduces the risk of adverse events.

Conclusion. Improving personalized rheumatoid arthritis therapy, taking into account genetic and immunological factors, helps optimize treatment outcomes, slow the progression of structural joint damage, and improve patients' quality of life. The identified patterns provide a scientific basis for implementing precision approaches in rheumatology practice in the republic.