



## LITERATURE REVIEW OF THE USE OF STATINS IN RHEUMATOID ARTHRITIS

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### Abstract

The review provides information on additional cardiovascular risk factors in patients with rheumatoid arthritis. The paper summarizes the data of scientific studies on the use of statins in the primary and secondary prevention of cardiovascular events in patients with the most common rheumatological diseases. In addition, the results of scientific works that studied the effect of statin therapy on the course of the underlying rheumatological disease are indicated.

**Keywords:** atherosclerosis, statins, rheumatoid arthritis, cardiovascular disease

The number of rheumatic patients in our country by the beginning of the 21st century amounted to more than 2 million people, and the incidence of cardiovascular complications among these patients generally exceeds those in the general population [1]. Currently, there is no doubt about the important role of cholesterol in the development of atherosclerosis, and evidence of this is the widespread use of statins, the effectiveness of which is assessed by the ability to reduce plasma cholesterol levels. An array of scientific data obtained as a result of large multicenter studies suggests that the immuno-inflammatory cascade leading to endothelial dysfunction contributes to the progression of the atherosclerotic process [2]. Statins, which occupy an exclusive place in the treatment of patients with atherosclerosis and coronary heart disease (CHD), are increasingly being prescribed to patients with rheumatic diseases.

### Rheumatoid arthritis

Rheumatoid arthritis is a chronic autoimmune disease with a polygenic predisposition that leads to erosive and destructive changes in peripheral joints and is accompanied by damage to internal organs and cardiovascular complications. In Central Asia at the beginning of the 21st century, more than 20 million people suffer from diseases of the musculoskeletal system, 10% of them have been diagnosed with rheumatoid arthritis [3]. Until recently, many experts believed that rheumatoid arthritis, leading to early disability, is not the cause of premature death. Clinical studies of recent years indicate the need to change the attitude of doctors to assessing the prognosis for life in this





category of patients. The study of the structure of mortality in patients with rheumatoid arthritis led to the understanding of the fact that the cause of premature death in half of them is diseases of the cardiovascular system associated with atherosclerotic vascular disease, and not with rheumatic damage to the structures of the heart [4].

The concept of risk factors for the development of cardiovascular catastrophes has some peculiarities in relation to patients with rheumatoid arthritis. Along with traditional factors such as age, gender, dyslipidemia, additional risk factors in patients of this group must be taken into account [5]. We are talking about a chronic inflammatory background, a side effect of glucocorticosteroids, leading to atherogenic changes in the lipid spectrum. The lipid spectrum in patients with rheumatoid arthritis is characterized by an increase in the level of triglycerides and a decrease in the concentration of high-density lipoprotein cholesterol (HDL), an increase in the atherogenic coefficient. This feature of the ratio of lipoprotein fractions is characteristic of inflammatory diseases, and prednisolone also plays a certain role. Among the risk factors, mention should be made of arterial hypertension, which is promoted by the use of non-steroidal anti-inflammatory drugs and the development of insulin resistance.

For 10 years from the date of diagnosis of rheumatoid arthritis, cardiovascular complications develop in a third of patients. Subclinical atherosclerosis in the form of a thickening of the intima-media complex of the main arteries is detected in most patients with rheumatoid arthritis, and in a quarter of patients the atherosclerotic process manifests itself clinically in the form of coronary artery disease (angina pectoris, myocardial infarction) and peripheral atherosclerosis. Patients with rheumatoid arthritis are characterized by painless myocardial ischemia according to the Holter ECG monitoring. Examination of the coronary arteries usually reveals a multi-vessel lesion with a relatively small number of critical stenoses [6]. The state of the coronary bed, pronounced processes of inflammation in the vascular wall and the tendency to rupture of atherosclerotic plaques against the background of increased thrombus formation resemble those changes in diabetes mellitus.

There are different assessments of the role of rheumatoid arthritis activity for the prognosis of atherosclerotic vascular lesions. If the presence of rheumatoid factor in the blood plasma of patients with rheumatoid arthritis (seropositive arthritis) is clearly associated with an increased risk of developing vascular complications, then the activity of the disease, determined using special rheumatological indices, does not always correlate with the incidence of myocardial infarction [7]. On the other hand, an increase in the concentration of C-reactive protein in blood plasma is of great





prognostic value. Therefore, regardless of the stage of the disease, the tactics of a cardiologist aimed at reducing cardiovascular risks should be aggressive.

- CoA reductase inhibitors by rheumatologists is preliminary, and the final decision on the inclusion of statins in the list of drugs routinely used for the treatment of rheumatoid arthritis may be taken after the completion of large clinical trials.

The first studies on the use of statins in rheumatology were experimental in nature: collagen arthritis in mice was used as a classical model, the activity of which was significantly reduced by simvastatin [8].

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Of particular interest is the work carried out by Mexican scientists, which evaluated the possibility of using a statin in patients with rheumatoid arthritis resistant to some classical antirheumatic drugs: simvastatin at a dosage of 40 mg/day surpassed chloroquine in anti-inflammatory activity [9]. Another study with simvastatin was conducted in Japan: when prescribing 10 mg of the drug for 3 months, indicators of rheumatoid arthritis activity, including the concentration of C-reactive protein, decreased. In one of the works carried out by domestic scientists, lovastatin was used. A significant decrease in the activity of rheumatoid arthritis was not achieved.

In connection with this circumstance, at the A.L. Myasnikov Research Institute of Cardiology (together with the Research Institute of Rheumatology of the Russian Academy of Medical Sciences), a more powerful statin, atorvastatin, at a dosage of 10 and 40 mg / day, was chosen to study the anti-inflammatory properties of HMG-CoA reductase inhibitors. A decrease in the concentration of C-reactive protein in blood plasma was detected only when prescribing the drug at a higher dose: by 65% in patients with rheumatoid arthritis and by 20% in coronary artery disease. It is interesting to note that in patients with coronary heart disease, the anti-inflammatory effect was manifested only in a subgroup of patients with initially high levels of C-reactive protein (more than 3 mg/l). The results obtained suggest that the pleiotropic properties of statins are more pronounced in patients with rheumatological profile than in patients with coronary heart disease [10].

The now classic TARA study (Trial of Atorvastatin in Rheumatoid Arthritis) showed that atorvastatin at a dosage of 40 mg/day significantly reduces the level of C-reactive protein and significantly (standard rheumatological indices were used) reduces the inflammatory process in the joints [11].

In a retrospective study conducted in the UK, it was found that the risk of developing rheumatoid arthritis was higher in patients with hyperlipidemia, and in those patients who took HMG-CoA reductase inhibitors, the incidence of rheumatoid arthritis was lower.





In March 2011, the enrollment of patients with rheumatoid arthritis in the largest clinical trial TRACE RA ( TRIal of Atorvastatin for the Primary prevention of Cardiovascular Events in Rheumatoid arthritis ). More than 5000 patients receiving atorvastatin therapy will be observed within 5 years . Thus, in 2016, for the first time, scientific data will be obtained from a full-scale study on the primary prevention of coronary artery disease with statins in patients with rheumatoid arthritis [12].

**Conclusions** : When prescribing HMG- CoA inhibitors reductase , it must be remembered that the combined use of a statin and allopurinol may increase the risk of developing myopathies, which requires more frequent determination of plasma creatine phosphokinase .

widespread use by cardiologists in their practice of thiazide diuretics and small doses of aspirin has led to an increase in the number of acute gouty arthritis in patients with hyperuricemia. By prescribing atorvastatin, cardiologists may reduce the incidence of drug-induced gout.

### **Bibliography:**

1. Agababova ER , Alekberova Z.S., Alekseeva LI. Selected lectures on clinical rheumatology: a textbook for students of institutes and faculties of postgraduate education ( ed . Nasonova VA, Bunchuk NV.) M. "Medicine", 2001
2. Chazov EI, Kukharchuk VV , Fighters SA. Guide to atherosclerosis and coronary heart disease. M. « Media Medica ", 2007
3. Nasonov EL. Rheumatology: a national guide. M. "GEOTAR-Media" 2008
4. Hall FC, Dalbeth N. Disease modification and cardiovascular risk reduction: two sides of the same coin ? Rheumatology 2005;2-10.
5. Leuven S.I., Franssen R., KasteleinJJ . et al. Systemic inflammation as a risk factor for atherothrombosis . Rheumatology 2008;47:3-7.
6. Зокиров М.М. & Касымова, С. А., & Рустамова, И. К. (2019). Нейропсихологическое исследование пациентов с длительной посттравматической эпилепсией. Молодой ученый, (4), 116-118.
7. Sarvinoz, T., & Muzaffar, Z. (2022). Rehabilitation aspects of water therapy in modern medicine. Uzbek Scholar Journal, 6, 102-106.
8. Sarvinoz, T., & Muzaffar, Z. (2022). Rehabilitation for childhood cerebral palsy. Uzbek Scholar Journal, 6, 97-101.
9. Nabievna, M. Y., & Muzaffar, Z. (2022). Literatural review of the relevance of the problem of neurosoids. Modern Journal of Social Sciences and Humanities, 4, 558-561.





10. Nabievna, M. Y., & Muzaffar, Z. (2022). Modern View on the Pathogenesis of Hiv Encephalopathy. Spanish Journal of Innovation and Integrity, 6, 478-481.
11. Muzaffar, Z., & Okilbeck, M. (2022). Dementia and arterial hypertension. Modern Journal of Social Sciences and Humanities, 4, 19-23.
12. Muzaffar, Z., (2022). Chronic Obstructive Pulmonary Disease in Combination with Cardiovascular Diseases. European Multidisciplinary Journal of Modern Science, 6, 150-155.
13. Зокиров, М., & Мухаммаджонов, О. (2022). Особенности развития тревожных и депрессивных расстройств при заболеваниях, сопровождающихся хроническим болевым синдромом. Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali, 841-844.
14. Зокиров, М., & Мухаммаджонов, О. (2022). Вич энцефалопатия и его патогенетические аспекты. Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali, 855-858.
15. Muzaffar, Z. (2022). HIV Encephalopathy and its Pathogenetic Aspects. European Multidisciplinary Journal of Modern Science, 4, 843-846.
16. Зокиров, М. М., Рустамова, И. К., Касимова, С. А., & Кучкарова, О. Б. (2019). Жарохатдан кейинги талвасада кечки нейровизуализацион ўзгаришлар. In Современная медицина: новые подходы и актуальные исследования (pp. 56-60).
17. Zokirov M., Mukhammadjonov, O. (2022). Cognitive Impairments in Patients with HIV-Associated Encephalopathy. Central asian journal of medical and natural sciences, 3(2), 401-405.
18. Zokirov, M. M., & Mukhammadjonov, O. (2022). Cognitive impairment in patients with Parkinson's disease and optimization of its treatment. Eurasian Scientific Herald, 7, 177-180.
19. Зокиров, М., & Туланбоева, С. (2022). Когнитивные нарушений у пациентов с ВИЧ–ассоциированной энцефалопатией. Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali, 68-73.
20. Muzaffar, Z. (2022). Literature reviews on nervous system damage during hiv infection. Barqarorlik va yetakchi tadqiqotlar onlayn ilmiy jurnali, 2(9), 141-147.

