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**LIPID PROFILE CHANGES IN PATIENTS WITH RHEUMATOID ARTHRITIS
AND AUTOIMMUNE THYROIDITIS**

L. Khimion¹, MD, PhD, Professor

O. Yashchenko¹, MD, PhD

I. Naishtetik²,

O. Piura²,

¹Shupyk National Medical Academy of Postgraduate Education (Kyiv, Ukraine)

²Kiev Regional Clinical Hospital (Kyiv, Ukraine)

Summary. The data about changes in lipid profile in rheumatoid arthritis patients with autoimmune thyroiditis is given in the article.

Key words: Rheumatoid arthritis, autoimmune thyroiditis, dyslipidemia.

Резюме. В статті наведено дані щодо змін ліпідного профілю у хворих на ревматоїдний артрит із аутоімунним тиреоїдитом.

Ключові слова: Ревматоїдний артрит, аутоімунний тиреоїдит, дисліпідемія.

Резюме. В статье приведены данные об изменениях липидного профиля у пациентов с ревматоидным артритом и аутоиммунным тиреоидитом.

Ключевые слова: Ревматоидный артрит, аутоиммунный тиреоидит, дислипидемия.

Rheumatoid arthritis (RA) is a chronic, complex and heterogeneous autoimmune disease, which is characterized by the abnormal immune response towards the joints structures, resulting in symmetric erosive polyarthritis with progressive damage of the joints, bone destruction, and extra-articular manifestations, such as cutaneous nodules, lung involvement, cardiovascular disease, episcleritis, and so others [2]. RA is one of the most common autoimmune disorders, affecting approximately 1% of the population worldwide. The exact cause of RA is not known; however, initiation of disease seems to result from an interaction between genetic susceptibility, environmental triggers, and, probably infection [1].

The link between RA and the thyroid gland has been established a long time ago. The researchers of this problem were focused mainly on: the functional and immune thyroid gland abnormalities in patients with previous history of RA, and joint changes in patients with the previous autoimmune thyroid diseases. Thyroid dysfunctions in patients with RA mostly have autoimmune nature; often they are accompanied by elevated titers of anti-thyroid autoantibodies. The patients with RA can have euthyroid, hypothyroid or hyperthyroid manifestations [4].

It is also known that RA is associated with an increased risk of cardiovascular events, such as myocardial infarction and stroke. The epidemiological evidence suggests that classic cardiovascular risk factors, such as hypertension, dyslipidemia, insulin resistance and body composition alterations are important for the development of cardiovascular complications. Systemic inflammation which is common in RA, may also increase the risk of cardiovascular disease [3]. Considering an important influence of the thyroid dysfunction on the development of dysmetabolic changes, it would be interesting to investigate the role of autoimmune thyroiditis (AIT) at the development of dyslipidemia in RA patients.

We investigated the influence of thyroid dysfunction on the development of proatherogenic dyslipidemia in RA patients.

Aim of the study: to evaluate and compare lipid profiles in RA patients with and without autoimmune thyroiditis.

Materials and methods. The state of lipid metabolism was investigated in 92 RA patients without history of cardiovascular disease. All patients were divided in three groups: patients with RA: 62 patients without AIT (group I, 46,77±0,45 years old; 47 women, 15 men), 30 patients with AIT without thyroid gland dysfunction (group II, average age 43,20±0,46 years; 22 women, 15

men); patients with AIT and hypothyroidism (group III, average age $43,85 \pm 0,32$ years; 28 women, 2 men). 20 healthy people of the same age and gender were investigated as a control group. All RA patients and persons from the control group underwent the general physical and special rheumatologic examination, the ultrasound examination of the carotid arteries and the laboratory tests for the thyroid dysfunction detection and lipid metabolism investigation. Lipid profile included total cholesterol (TC), low density lipoprotein (LDL) cholesterol, high density lipoprotein (HDL) cholesterol evaluation.

Results: RA patients demonstrated different lipid profiles. Serum concentration of total cholesterol in the I group was, in average $5,43 \pm 0,03$ mmol/l; in the II group- $5,72 \pm 0,06$ mmol/l; in the III group- $6,92 \pm 0,05$ mmol/l, (difference is significant between I and III group, $p < 0,05$). In the control group the average concentration of total cholesterol was $4,88 \pm 0,04$ mmol/l which is significantly lower than in all RA patients ($p < 0,05$). The LDL cholesterol serum concentration was: $2,76 \pm 0,04$ mmol/l (group I), $3,23 \pm 0,04$ mmol/l (group II), $4,28 \pm 0,02$ mmol/l (group III), (the difference is significant between group I and II, I and III, $p < 0,05$). In control group the mean LDL cholesterol level was $2,13 \pm 0,03$ mmol/l (difference is significant with all RA groups, $p < 0,001$). The HDL cholesterol serum concentration was: $1,1 \pm 0,02$ mmol/l (group I), $0,9 \pm 0,02$ mmol/l (group II), $0,8 \pm 0,02$ mmol/l (group III), (difference is significant between I and III groups, $p < 0,05$). In the control group an average of HDL cholesterol was $1,25 \pm 0,03$ mmol/l (the difference is significant with all RA patients groups, $p < 0,05$).

Conclusions: RA patients demonstrate proatherogenic lipid changes compared with healthy persons of the same age. RA patients with AIT and hypothyroidism have in average higher level of total cholesterol, LDL cholesterol and a lower level of HDL cholesterol compared to RA patients without AIT. Dyslipidaemia in patients with RA, AIT and hypothyroidism can play important role at the development of atherosclerosis and cardio-vascular disease in RA, which need further investigations.

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