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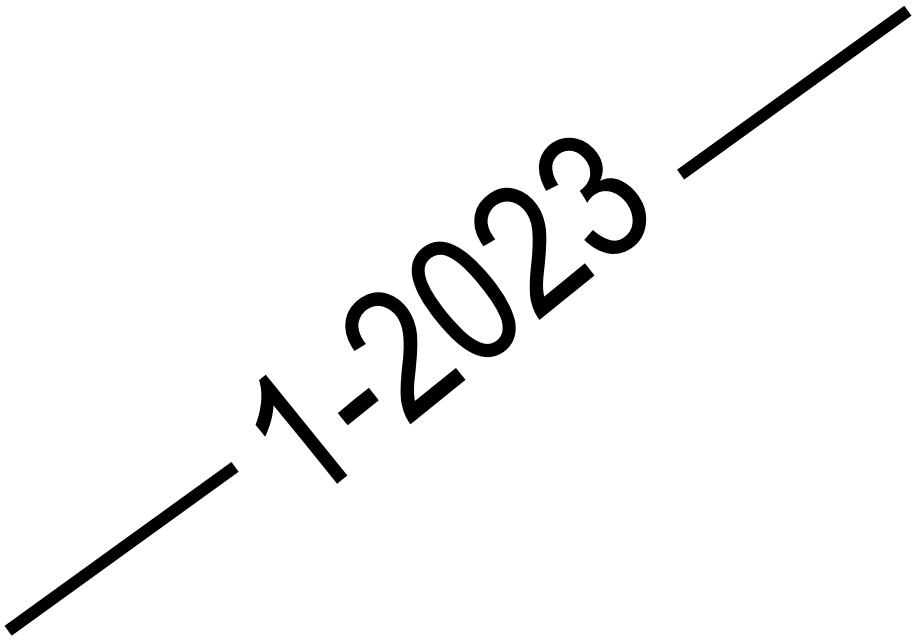

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РОЛЬ НЕКОТОРЫХ СИНТЕТИЧЕСКИХ ПРЕПАРАТОВ И ХРЕНА В ЛЕЧЕНИИ АТЕРОСКЛЕРОЗА

THE IMPORTANCE OF SOME SYNTHETIC DRUGS AND HORSERADISH IN THE TREATMENT OF ATHEROSCLEROSIS

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Annotasiya

Ateroskleroz lipid va oqsil almashinuvining buzilishi natijasida yuzaga keladigan surunkali kasalligi bo‘lib, tomirlarda xolesterin va lipoproteinlarning ayrim fraktsiyalarini cho‘ktirish bilan yuzaga keladi. Maqolada ateroskleroz kasalligini davolashda ishlatiladigan ayrim sintetik dorilar va yerqalampirni ahamiyati to‘g‘risida ma’lumotlar keltirilgan.

Аннотация

Атеросклероз хроническое заболевание, возникающее в результате нарушения липидного и белкового обмена, обусловленное отложением в сосудах определенных фракций холестерина и липопротеидов. В статье приведены сведения о некоторых синтетических препаратах, применяемых при лечении атеросклероза и значении хрена.

Abstract

Atherosclerosis is a chronic disease that occurs as a result of lipid and protein metabolism disorders, and is caused by deposition of certain fractions of cholesterol and lipoproteins in the vessels. The article provides information about some synthetic drugs used in the treatment of atherosclerosis and the importance of horseradish.

Kalit so‘zlar: *Ateroskleroz, xolesterin, lipoprotein, giperlipoproteinemiya, aterogenez, giperfibrinogenemiya*

Ключевые слова: *атеросклероз, холестерин, липопротеины, гиперлипопротеинемия, атерогенез, гиперфибриногенемия*

Key words: *atherosclerosis, cholesterin, lipoprotein, hyperlipoproteinemia, atherosclerosis, hyperfibrinogenemia.*

INTRODUCTION

Atherosclerosis is a chronic disease of elastic and muscular-elastic type of arteries caused by disturbances in lipid and protein metabolism, and is caused by deposition of certain fractions of cholesterol and lipoproteins in the lumen of the vessels. Deposits are formed in the form of atheromatous (cholesterol) plaques. Later, the proliferation of connective tissue in them (sclerosis) and calcification of the vessel wall lead to deformation and blockage of the vessel. It is important to distinguish atherosclerosis from Menkeberg‘s arteriosclerosis, another form of sclerotic damage to arteries, which is characterized by the deposition of calcium salts in the arterial environment, diffuse damage (lack of plaque), and the development of aneurysms. Atherosclerosis of the heart vessels leads to the development of coronary artery disease.

LITERATURE ANALYSIS AND METHODS

The pathogenesis of atherosclerosis is called atherogenesis and takes place in several stages. The development of atherosclerotic lesions is a combination of the processes of entry and exit of lipoproteins and leukocytes into the intima, proliferation and death of cells, formation and remodeling of the intercellular substance, as well as proliferation and calcification of blood vessels [1].

Monocytes participate in the further formation of the lipid stain. In the intima, monocytes become macrophages, from which xanthoma (foam) cells filled with lipid appear due to lipoprotein endocytosis mediated by lipoproteins. Previously, it was assumed that the well-known ZPL receptors are involved in endocytosis, but with a defect in these receptors, both experimental

animals and patients (for example, with familial hypercholesterolemia) have numerous xanthomas and xanthoma-filled atherosclerotic plaques.

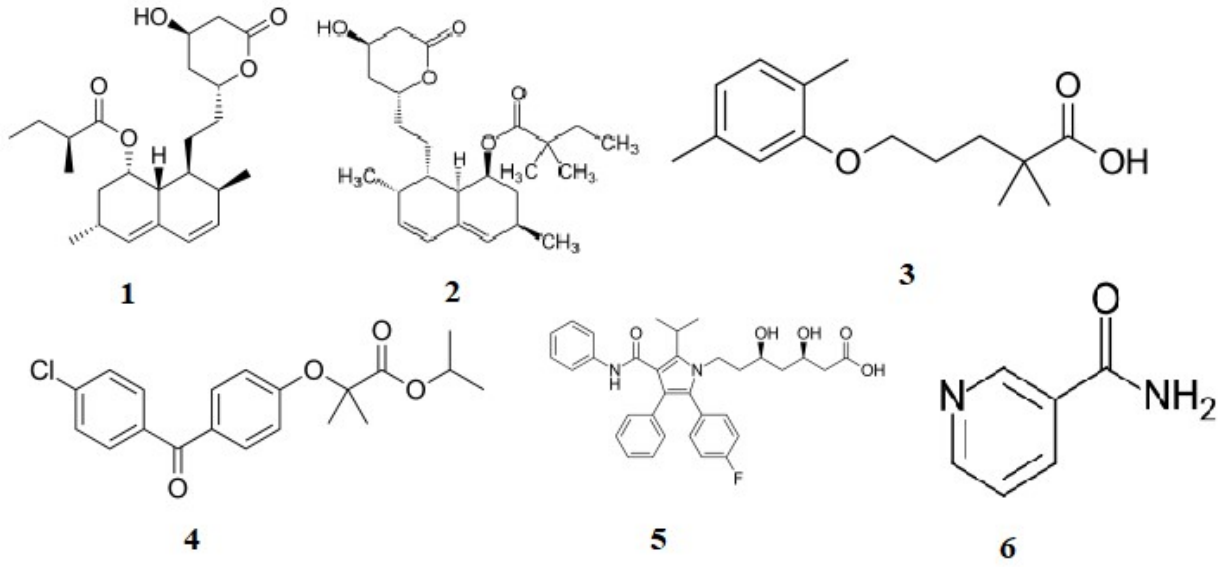

***Figure 1**. Active chemicals in some synthetic drugs used in the treatment of atherosclerosis. 1-lovastatin; 2-simvastatin; 3-gemfibrozil; 4-fenofibrate; 5-atorvastatin; 6-nicotinamide;*

Synthetic agents in the treatment of atherosclerosis are divided into four main groups:

1. Prevention of absorption of cholesterol. A - anion exchange resins (cholestyramine, gemfibrozil). They absorb cholesterol. They are not absorbed or destroyed in the gastrointestinal tract. The peak of effectiveness is achieved within a month of use. The effect lasts 2-4 weeks after cancellation. B - vegetable sorbents (guarem, β-sitosterol). They prevent the absorption of cholesterol in the intestines. Drink plenty of fluids (at least 200 ml). C is an acetyl-CoA transferase blocker in development and testing.

2. Reducing the synthesis of cholesterol and triglycerides in the liver and reducing their concentration in the blood plasma. A-inhibitors of 3-OH-3-methylgluratyl-CoA reductase (HMG-CoA reductase). They are statins. The most popular (and expensive) group of drugs. Representatives of the increasing order of exposure: lovastatin (mevakor, medostatin, apexstatin), simvastatin (zocor, vasilip, simvor), fluvastatin (leskol), pravastatin (lipostat, pravachol) and cerivastatin (lipobay), atorvastatin (liprimar, tovasustatin) (crestor). B - derivatives of fibrous acid (fibrates): clofibrate (Miscleron), bezafibrate (Bezalip), ciprofibrate (Lipanor), fenofibrate (Trycor).

A combination of statins and fenofibrate is recommended for more intensive treatment of atherosclerosis. C - nicotinic acid (enduracin). It is not recommended to use in diabetes. Side effects: skin itching, hyperemia, dyspepsia. D - reducing sterol synthesis - probucol (fenbutol)

3. Increased catabolism and release of atherogenic lipids and lipoproteins. This group includes compounds such as unsaturated fatty acids: linetol, lipostabil, tribuspamine, polysponin, thioctic acid (octolipene, thiogamma, thiolept), omacor, eikonol.

4. Additional synthetic drugs-endotheliotropic drugs nourish the endothelium. Reduces the level of cholesterol in the intima. Pyricarbate (parmidine, anginin), synthetic analogues of prostacyclin (misoprostol, vasoprostan), policosanol, vitamins A, E and C are included.

Despite the effectiveness of such drugs used in the treatment of atherosclerosis, it is possible that they have a harmful effect on the body. For example, statins (lovastatin, simvastatin, fluvastatin, pravastatin, etc.) have been found to cause myopathy, development of kidney failure, and liver damage [2].

RESULTS AND DISCUSSION

Taking into account the above, one of the urgent problems of today is to determine and put into practice the natural analogues of drugs that prevent diseases and have therapeutic properties.

Folk medicine plays an important role in the identification of medicinal plants. There are several plants that are used in the treatment of atherosclerosis, and one of them is pepper

(Armoracia) belonging to the Brassicales family of the cabbage family (Brassicaceae). Tincture prepared from this plant has been used in folk medicine for several years [3].

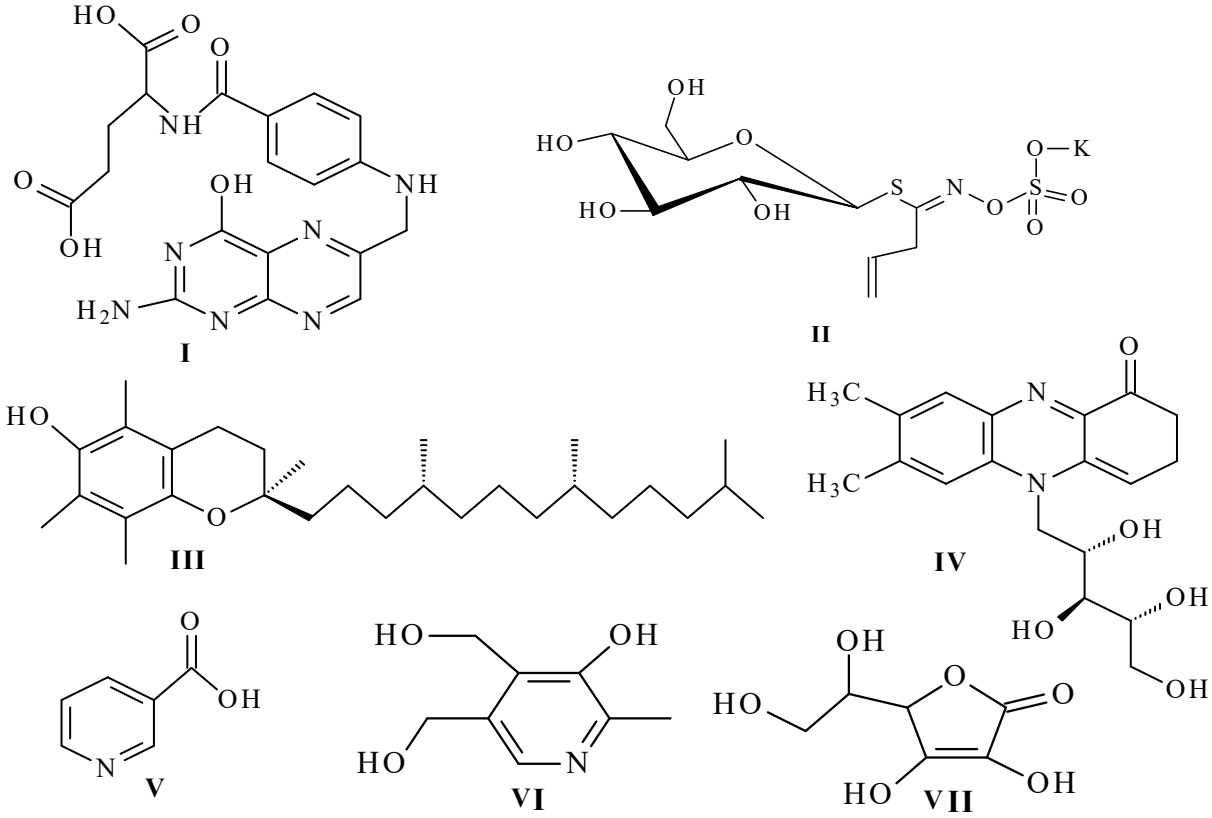

***Figure 2**. Chemical structure of some biologically active substances in ground pepper. I. Folic acid; II. Sinigrin; III. α-tocopherol; IV. Riboflavin;V Niacin; VI. Pyridoxine; VII. Ascorbic acid.*

When the composition of this medicinal plant is studied, it contains a number of compounds that can treat and prevent atherosclerosis: ascorbic acid, alpha tocopherol, niacin, sinigrin (Figure 2), omega-3, omega-6 and other biologically active substances and the presence of ground pepper peroxidase enzyme was determined.

CONCLUSION

As can be seen from the above, biologically active substances contained in plants do not cause secondary diseases in the body compared to synthetic drugs in the treatment and prevention of atherosclerosis.

In short, the use of natural products, which are healing and therefore harmless at the same time as synthetic drugs, does not have a negative effect on other types of organs during the treatment of one disease.

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