

**SIGNIFICANCE OF LIPID METABOLISM IN ISCHEMIC HEART  
DISEASE**

**Anotation:** A network system of providing assistance to patients with cardiovascular diseases has been operating in our Republic for more than half a century. Cardiological offices and rooms, cardiology centers are equipped with equipment that fully meets international standards, and global standards of diagnosis and treatment are in place. Cardiology scientists of this field of our republic development of themselves weighty contributions in kushmokda. There is an increase in the amount of TG, free fatty acids and XS in the blood. Not only the absolute amount of lipids, but also their cycle in the blood is important for the development of atherosclerosis. In the blood, lipids are in a complex with proteins in the form of lipoproteins, which include XS, TG, phospholipids and proteins. Physicochemical properties protein and lipids concentration and type connectedq.

**Key words:** UIK, XS, TG, phospholipid, atherosclerosis, fatty acids, lipoprotein, protein.

**Аннотация:** В нашей республике уже более полувека действует сетевая система оказания помощи больным сердечно-сосудистыми заболеваниями. Кардиологические кабинеты и кабинеты, кардиологические центры оснащены оборудованием, полностью соответствующим международным стандартам, действуют мировые стандарты диагностики и лечения. Весомый вклад в Кушмокду внесли учёные-кардиологи этой области нашей республики. В крови отмечается увеличение количества ТГ,

свободных жирных кислот и ХС. Для развития атеросклероза имеет значение не только абсолютное количество липидов, но и их круговорот в крови. В крови липиды находятся в комплексе с белками в виде липопротеинов, к которым относятся ХС, ТГ, фосфолипиды и белки. Физико-химические свойства: концентрация белков и липидов и тип соединения.

**Ключевые слова:** УИК, ХС, ТГ, фосфолипид, атеросклероз, жирные кислоты, липопротеин, белок.

Atherosclerosis (from the Greek "athere" - bush and "scleros" - hard) is a chronic disease in which fatty infiltration occurs in the walls of blood vessels, and the formation of fibrous plaques leads to a violation of the physiological activity of blood vessels in general and organs. Fats in the field. Cholesterol in mine serum and triglycerides oxyls with connected be called lipoproteins (LP). Atherogenesis in the process their participation LP is large - smallness with dependence Most small LP (5–12 nm ) high density LP (YuZLP) arterial deposit vessels to the wall easy enters and easy out goes , that's why for they are atherogenesis in the process participation they don't. Low-density lipoprotein (PZLP) (18-25 nm), intermediate-density LP (25-35 nm), and some ultra-low-density LP (50 nm) easily enter the arterial vessel wall and remain trapped there after oxidation. So they participate in the process of atherogenesis. Large LP - chylomicrons (75-1200 nm) and large and low-density LP (80 nm) - cannot enter the wall of arteries and therefore participate in the process of atherogenesis they don't. There is a direct relationship between the amount of PZLP and the development of ischemic heart disease. The greater the PZLP, the greater the risk of developing IUD. There is an inverse relationship between the development of YuZLP and YuIK. The higher the LUZLP, the lower the risk of developing LUIK. Triglycerides are mainly found in chylomicrons (80-95%). They are synthesized in the small intestinal cavity from the ovate. Uta low-

density LP TG is 55-80%. TG is considered to be of little importance in the process of atherogenesis. Because the chylomicrons and UPZLP containing them cannot enter the wall of arteries. PZLP and YuZLP contain a small amount of TG (5-15%).

### Types of hyperlipidemia.

Five types of dyslipidemia are known:

Type I is characterized by high levels of triglycerides due to increased concentration of chylomicrons.

PZLP XS for type II a up level to be special

II b type PZLP and UPZLP quantity increase to account in the mine triglycerides and of cholesterol concentration up to be with is characterized.

Type III occurs due to an increase in chylomicrons and OZLPs. In this case, the amount of cholesterol and triglycerides in mine serum is high.

Type IV is characterized by increased triglycerides and UPZLP and normal cholesterol.

Type V bridge triglycerides and of cholesterol increase with namaen will be A distinction is made between primary (genetic) and secondary (in various diseases) dyslipidemia.

Plasma lipids are divided into the following classes according to their mobility and density using ultracentrifugation or electrophoresis (polyacrylamide gel).

- Chylomicrons
- PZLP or  $\beta$ -lipoproteins
- O'PZLP or pre  $\beta$ -lipoproteins
- YuZLP  $\beta$ - lipoproteins

Chylomicrons mainly include exogenous triglycerides, PZLP - cholesterol, O'PZLP - endogenous triglycerides, YuZLP - phospholipids. D.Frederickson and others distinguish 5 different types of hyperlipoproteins; they are primary and secondary.

Type I - chylomicrons

Type II<sup>A</sup> - cholesterol + triglycerides

Type II<sup>B</sup> - mainly cholesterol and  $\beta$ - lipoproteins

Type III - " pathological " - floatlofsi z  $\beta$ - lipoproteins

Type IV - endogenous Triglycerides are pre  $\beta$ - lipoproteins

Type V - chylomicron +  $\beta$  lipoproteins

In type V and IV, the disorder of lipid metabolism can be said to be secondary, since the compensation of carbohydrate metabolism causes these disorders to disappear. Sometimes it goes to type V and IV. Lipids are transported in the blood plasma as part of highly complex complexes. Basically, lipoproteins are divided into chylomicrons XM, ultra-low-density lipoproteins O'PZLP, intermediate-density lipoproteins OZLP, low-density lipoproteins PZLP, and high-density lipoproteins YuZLP according to their density, size, apoproteins and lipids. Very low density lipoproteins. O'PZLP is close to chylomicrons in structure and composition. Their density is around 0.95 to 1.006 g/ml. V-100, apo S- I, C - II, C - III are the main structural and functional proteins of O'PZLPs. O'PZLP mainly consists of endogenous triglycerides and a small amount of XS esters, and therefore, when its amount in the blood increases, hypertriglyceridemia GTG is observed. Hypertriglyceridemia is often observed in non-insulin-dependent diabetes, hypothyroidism, and obesity. If hypertriglyceridemia is accompanied by a small amount of high-density lipoproteins in the blood, it is considered a major risk factor for the development of atherosclerosis. Intermediate density lipoproteins.

OZLP mainly contains a high amount of XS ethers and a small amount of O'PZLP. V-100 and apo E are considered the main transport and functional proteins of OZLPs. OZLP density is around 1.006 - 1.019 g/l. An increase in its amount in the blood causes hypercholesterolemia and hypertriglyceridemia, respectively. In clinical practice, an isolated increase in intermediate density lipoproteins is very rare, and it is associated with a hereditary defect of LPL from the liver, causing advanced atherosclerosis. Normally, if a certain part of OZLP is captured by liver receptors, the remaining part is hydrolyzed to form low-density lipoprotein. Low density lipoproteins. The average density of PZLP is around 1019-1063 g/ml. The main part of their composition is cholesterol esters, and the functional apoprotein is apo V-100. An increase in the amount of PZLPs in the blood plasma causes the development of coronary artery atherosclerosis. However, in order for PZLP to exhibit atherogenic properties, they must undergo modification. The main reason for the modification of PZLPs is their peroxidation. Oxidation of PZLPs changes their properties in two ways: firstly, their interactions with liver receptors are broken, and secondly, they become an active chemoattractant for monocytes. activated monocytes in the blood move to the subendothelial branch of the vascular wall, transforming macrophages, which phagocytose modified PZLPs, turning into foam cells and filling the cell with cholesterol esters. Activated macrophages and foam cells cause the release of biologically active substances - growth factors, inflammatory cytokines, and adhesion molecules. As a result, the permeability of the endothelium increases, which leads to the enlargement of the atherosclerotic plaque, the narrowing of the vascular space, and the rupture of the plaque, in turn, causes thrombosis. High-density lipoproteins are anti-atherogenic lipoprotein bodies, which have the property of re-transporting cholesterol in the walls of blood vessels and macrophages in the liver. Two subgroups of YuZLPs are distinguished: YuZLP-2, YuZLP-3, they are disk-shaped. The amount of high-density lipoprotein cholesterol in the blood is of great importance, which reverses the atherosclerosis process, the lower its amount in the stomach, the higher the development of the

atherosclerosis process. Lipids are transported in the blood plasma as part of highly complex complexes. Basically, lipoproteins are divided into chylomicrons XM, ultra-low-density lipoproteins O'PZLP, intermediate-density lipoproteins OZLP, low-density lipoproteins PZLP, high-density lipoproteins YuZLP according to their density, size, apoproteins and lipids. Very low density lipoproteins. O'PZLP is close to chylomicrons in structure and composition. Their density is around 0.95 to 1.006 g/ml. V-100, apo S- I , C - II , C - III are the main structural and functional proteins of O'PZLPs . O'PZLP mainly consists of endogenous triglycerides and a small amount of XS esters, and therefore, when its amount in the blood increases, hypertriglyceridemia is observed. Hypertriglyceridemia is often observed in non-insulin-dependent diabetes, hypothyroidism, and obesity. If hypertriglyceridemia is accompanied by a small amount of high-density lipoproteins in the blood, it is considered a major risk factor for the development of atherosclerosis. Intermediate density lipoproteins. OZLP mainly contains a high amount of XS ethers and a small amount of O'PZLP. V-100 and apo E are considered the main transport and functional proteins of OZLPs. OZLP density is around 1.006 - 1.019 g/l. An increase in its amount in the blood causes hypercholesterolemia and hypertriglyceridemia, respectively. In clinical practice, an isolated increase in intermediate density lipoproteins is very rare, and it is associated with a hereditary defect of LPL from the liver, causing advanced atherosclerosis. Normally, if a certain part of OZLP is captured by liver receptors, the remaining part is hydrolyzed to form low-density lipoprotein. Low density lipoproteins. The average density of PZLP is around 1019-1063 g/ml. The main part of their composition is cholesterol esters, and the functional apoprotein is apo V-100. An increase in the amount of PZLPs in the blood plasma causes the development of coronary artery atherosclerosis. However, in order for PZLP to exhibit atherogenic properties, they must undergo modification. The main reason for the modification of PZLPs is their peroxide oxidation. Oxidation of PZLPs changes their properties in two ways: firstly, their interactions with liver receptors

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## REFERENCES USED

1. Alieva AM Sutochnoe monitoring of parameters of the functioning of the cardiovascular system in adults aged 55 years and older. Diss. Candy. Med. n auk-M., 2018.
2. Aronov D.M. Treatment of coronary atherosclerosis: the effect of mass application of stents on immediate and distant coronary outcomes angioplasty / AM Bubunashvili [i dr.] // Cardiology. -20 1 4. -No. 5 - S. 23-29.

3. Aronov D.M. Funktsionalnye proby v Cardiology . Text. / V.P. Lupanov // M. MEDPRESS- inform.- 2012.- 296 p.
4. Alyavi B. A. Znachenie biokhimicheskikh markyrovov necrosis of myocardium pri acute coronary syndrome. // Medical Journal Uzbekistana. - Tashkent, - 2008. - N3. - C. 76-78.