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Changes of General Lipids in Liver Perfuzate Under "Essetsiale" In Liver Injury

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Abstract: The article describes the results of a significant reduction in the number of phospholipids in the serum of animals with toxic hepatitis caused by the adminis tration of heliotrin and the stabilization using the drug Essentsiale.

Keywords: liver, protein, phospholipid, cholesterol, synthesis, metabolic lipop rotein, catabolism, energy, glucose, organism, hepatitis, heliotrin

Methodology: The content of total lipids and triglycerides in liver perfusion was determined using Biotest (Prague, Czechoslovakia) reagents. Determination of cholesterol levels was performed according to the Ilka method.

The liver plays an important role in keeping the body healthy. It synthesizes blood proteins, phospholipids, cholesterol, neutralizes metabolic products, catabolism of lipoproteins and many other processes. The formation of glucose is of great importance for energy metabolism and is the formation of a transport form of very low-density lipid-lipoproteins, i.e., the most important energy substrates used by other organs.

All chronic hepatitis results from impaired liver function. If it is clear that the synthesis of cholesterol, phospholipids and some lipolytic enzymes in hepatocytes occurs, the disruption of lipid metabolism is largely dependent on the condition of the parenchymal cells. In addition, often chronic, toxic, viral hepatitis and liver cirrhosis have a major impact on lipid metabolism.

In the experiment, a significant decrease in serum phospholipids was found in experimental toxic hepatitis caused by heliotrin delivery. Electron microscopy studies have shown that a decrease in the synthesis of lipoproteins and phospholipids in liver injury under the influence of CCL4 is associated with changes in the endoplasmic reticulum of hepatocytes. However, the metabolic rate of mitochondrial phospholipids varies only slightly.

Biosynthesis of triglycerides occurs in many organs and tissues. Glycerin and fatty acids in the liver, intestinal mucosa, adipose tissue, mammary glands, etc. are included in triglycerides after activation. The triglycerides of adipose tissue, the mucous membrane of the small intestine, the liver, and most of the glycerin in the mammary glands are formed from glucose or genomonophosphates.

The formation of triglycerides by fatty acids occurs as a result of enzymatic reactions in the endoplasmic reticulum.

Fat accumulated in the liver is excreted in two ways. First: the secretion of fat into the blood, the transfer of energy to peripheral organs as a carrier occurs by sinking in the muscles and fat stores. The secretion process is complicated by the insolubility of lipids in water. Increased levels of phospholipids have also been found in some patients with chronic alcoholism.

Increased levels of total cholesterol and b-lipoproteins are also observed in patients with chronic hepatitis. During long-term alcohol intoxication, an increase in the amount of triglycerides in the serum of patients is observed.

In patients with chronic alcoholism, a number of indicators were found to simultaneously increase the amount of total lipids, free cholesterol triglycerides.

In chronic alcoholism, a decrease in cholesterol esters is observed with an increase in the amount of total cholesterol in the serum of patients with alcoholism. In some cases, an increase in the amount of

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phospholipids is observed. In general, impaired lipid metabolism reflects liver failure in progressive alcoholic liver injury. Alcohol actively alters lipid metabolism in the body, while also having toxic effects on the liver.

X-ray exposure as a result of multiple exposure of the liver to carbon chloride, ethanol, heliotrin, pyrimidine, organophosphorus compounds, in which the accumulation of lipids is observed.

When biochemical parameters were observed in rat liver perfusate after chronic use of geliatrin, at first glance, it does not correspond to the data obtained from histological analysis and shows significantly more pronounced dystrophic processes in liver tissue of animals with geliatrin hepatitis compared with toxic hepatitis caused by CCL4. The reason for these discrepancies, apparently, is the significant differences in the type of tissue damage and the development of the pathological process due to the specific mechanisms of action of geliatrin.

However, in the development of the pathological process there is more of a decrease in protein synthesis. The table shows that the protein level in the liver perfusion decreases to 30% of the control values when tested after 3 months and continues to decline, which is noteworthy, reaching 17% of the control values after 6 months.

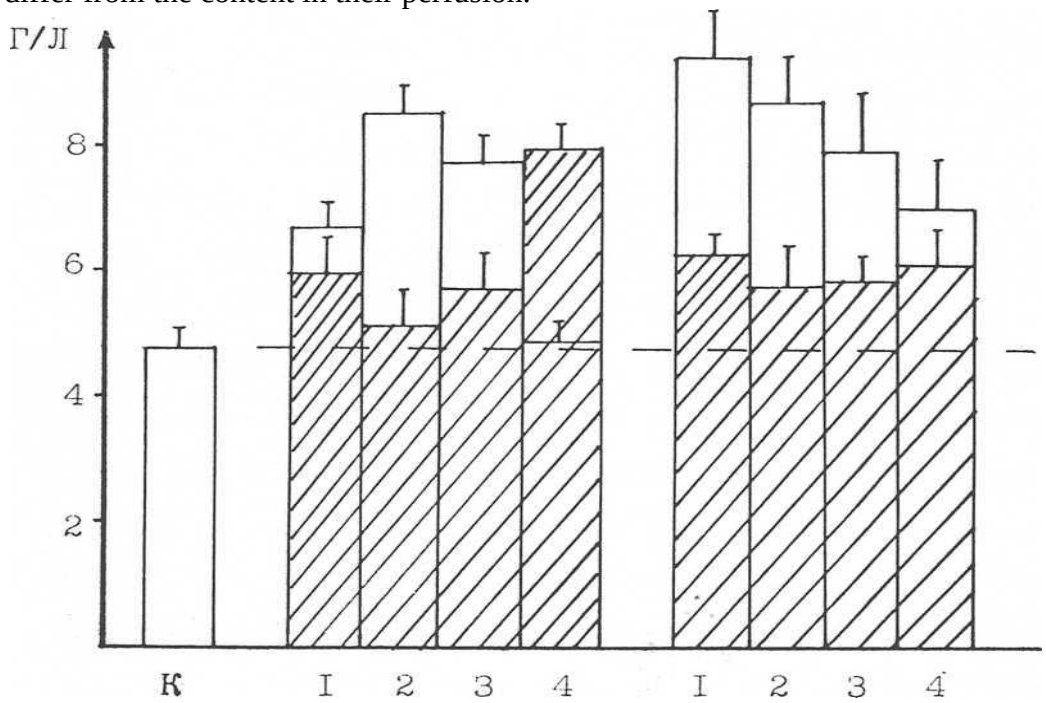
Given the nature of changes in the reactions of liver tissue to cortisol and essential amino acids in animals treated with geliatrin, it can be noted that in some cases the indicators of lipid metabolism change inversely compared with controls. Thus, the amount of total lipids, triglycerides, and cholesterol in the liver perfusion of animals treated with geliatrin is affected by cortisol (the same is true for animals treated with CCL4). The composition of--lipoproteins does not change in response to the introduction of cortisol into the perfusion.

Dynamics of total lipid content in blood serum.

Significant differences from control were found in the study of total lipid levels in the liver perfusion of rats exposed to hepatotoxic substances.

First, for all groups of animals in the experiment, the total lipid content in the liver perfusion significantly increased from control indicators by 30-90% compared with controls and 6 months after the start of the experiment - by 190% compared with controls in animals receiving carbon tetrachloride.

At the same time, it should be noted that for animals treated with four chlorine uglerod, a significant increase in the total amount of lipids in liver perfusion ($r<0,05$) is observed 6 months after the start of the experiment. In animals injured by Geliatrin, 6 months after the start of the experiment, the content of total lipids did not differ from the content in their perfusion.



The amount of total lipids (g / l) in the perfusion
Rat liver with various forms of chronic toxic hepatitis
(light lines).

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Effects of the drug "Essentiale Forte" on animals simultaneously with a hepatotoxic agent.
K - control
1- The effect of carbon tetrachloride on animals
2- The effect of animal geliatrin
3- Effect of ethanol on animals
4- Effect of liver homogenate on animals.
Data obtained from perfusion after 3 months
(3 months) or 6 months (6 months) after the start of the experiment.
In the last week of the hepatotoxic condition, the introduction of the drug "Essetsiale" in experimental animals leads to a significant decrease in the amount of all lipids in the liver perfusion. Evidence that the decrease in total lipids in liver perfusion under the influence of the drug "Essentsale" is not dependent on the duration of the test and is observed with all types of hepatotoxic effects is stable and profound.

In animals, cortisol leads to an increase, not a decrease, in the total lipid content in the perfusion, which is radically different from animals that have only a hepatotoxic effect. In other words, the effect of cortisol in such animals is similar to its effect in control animals.

Conclusion: Thus, the drug "Essentsiale" leads to a decrease in the amount of total lipids in the liver perfusion of animals with chronic hepatotoxic effects, which is close to the level characteristic for control animals.

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