

STUDY OF THE EFFECTS OF CERTAIN BIOLOGICALLY ACTIVE ADDITIVES ON METABOLISM AND THEIR CLASSIFICATION (IN THE CASE OF EXPONENTIAL TOXIC HEPATITIS)

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ANNOTATION

The study of the effect of some biologically active additives on metabolism and their classification (using the example of experimental toxic hepatitis) of the human system, normalize the balance of nutrients, contribute to maintaining and strengthening health (prevention and reduction of the risk of diseases), accelerate the recovery process.

Key words: prevention and reduction of the risk of diseases, consequences, and dietary supplements

Usually medications are used to stop an undesirable process in the body, to prevent severe consequences, and dietary supplements also put the body in order. Experienced doctors use this approach in their actions. Dietary supplements have great opportunities in helping to manage health. For this reason, they are mainly used to make up for the deficiency of essential substances. This way you can prolong life, prevent certain diseases, and reduce risk factors. After all, it has been established that there is a connection: a deficiency of certain nutrients – the risk of a particular disease (for example, calcium deficiency – osteoporosis).

The effect of medications taken. And of course, with prolonged and uncontrolled use of biologically active additives, there is a risk of overdose. Another negative aspect of the use of dietary supplements is that counting on the positive effect of supplements; a sick person may not rush to the doctor and lose time. Therefore, if you are going to start using dietary supplements, you need to consult a doctor.

To date, more than 3 thousand biologically active food additives have been registered in our country, and even more components that are used in their manufacture. Some manufacturers, using a certification and registration procedure that is not so complicated compared to medicines, may overestimate the beneficial properties of dietary supplements. For this reason, next we will talk about the properties of some components of dietary supplements.

Many dietary supplements contain substances of adaptogenic and tonic action, stimulating the body's defenses, increasing overall stability and vitality, working capacity, able to reduce the negative impact of the environment and stress. The listed properties, for example, have: extracts

from plants – Eleuthero coccus, lemongrass and others, animal organs, proposes, mummy. These components in supplements are combined with vitamins, dietary fibers and other substances. Guided by the purposes of application, the composition and ratio of components vary.

Often the composition of dietary supplements includes seaweed – chlorella, kelp, ascophyllum, spirulinafucus. These algae are a good source of vegetable protein, which is easily digested. In addition, they contain a lot of vitamins, trace elements, saturated fatty acids, and amino acids. And chlorella contains vitamin B12 even in greater quantities than the liver of animals, so a vegetarian should pay attention to it. With the help of algae, radionuclides, heavy metal salts, and toxic substances can be removed from the body faster. They are also used for the prevention of cardiovascular and oncological diseases, asthma and allergic reactions, contribute to the normalization of thyroid function (as they are rich in iodine), and eliminate inflammatory processes in the gastrointestinal tract.

Recently, a lot of scientific data has been accumulated on the role of fatty acids in human nutrition. The most attention is paid to polyunsaturated fatty acids as regulators of many physiological and pathological processes in the human body.

It is known that both saturated fatty acids and polyunsaturated fatty acids participate in the same biochemical reactions in the body and their intake is equally necessary for humans, however, the results of numerous studies in recent years have shown that it is not so much the quantitative content of these acids in food that is important, as their molar ratio. Most authors note that, in general, the ratio of saturated and polyunsaturated fatty acids should be approximately 3:1, and the ratio of ω -6 PUFA to ω -3 PUFA is 10:1, which is the most optimal for the manifestation of their maximum positive effect.

It is assumed that a change in the ratio of ω -3 PUFA and ω -6 PUFA in food leads to a change in the synthesis of various groups of eicosanoids, thereby causing various physiological effects, including in the blood coagulation system.

Thus, it is known that omega-6 fatty acids enhance the immune and inflammatory response of the body, stimulate blood clotting and narrowing of blood vessels. omega-3 fatty acids cause a more moderate immune and inflammatory response of the body, prevent blood clotting and stimulate the expansion of blood vessels. Thus, an optimal balance of saturated and polyunsaturated omega-3 and omega-6 fatty acids is necessary to balance these important regulatory functions of the body.

It is believed that the most optimal ratio of saturated and ω -3 PUFA and ω -6 PUFA is contained in preparations obtained from marine fish, marine mammals, algae. However, to date, other domestic and imported PUFA preparations are also being actively studied. Recently, biologically active food additives (dietary supplements) have attracted special attention, among them bear fat, badger fat, etc., which are also effective sources of essential fatty acids.

The results of numerous experimental and clinical studies indicate that these drugs have a wide range of therapeutic effects, which includes antioxidant, antitoxic, hepatoprotective, immunomodulatory, anti-inflammatory, anticancerogenic and other types of biological activity. It has been shown that exogenous administration of the necessary spectrum of fatty acids with the diet contributes to a decrease in platelet aggregation, relief of hypercoagulation, vasodilator effect.

The purpose of the study. In this regard, it seems promising to study the fatty acid composition of the dietary supplement "Bear fat" and its effect on the blood clotting system in conditions of physiological norm.

Materials and methods of research. In the studies, males of non-linear white rats of 3-4 months of age, weighing 350-400 g, were used as experimental animals. The number of rats in the comparison groups was 12.

The animals were kept on a mixed balanced diet with an optimal ratio of proteins, lipids and carbohydrates. The composition of the daily portions of the experimental groups additionally included dietary supplements "Bear fat" (LLC "Bagira", Orenburg) (hereinafter bear fat) at a dose of 0.08 ml per 100 g of animal weight. Oral administration of bear fat to rats was carried out for 14 days, following the instructions for the use of this drug. The doses of the studied substance for animals were adequate to the recommended doses for humans, which do not cause toxic effects. The control groups did not receive the drug additionally.

Painful manipulations were performed by subjecting animals to ethoxyethane anesthesia. Blood samples were taken into a syringe from the jugular vein exposed by an oval incision. Blood for coagulological studies was stabilized with 3.8% sodium citrate solution in a ratio of 1:9, as well as 0.125% buffered glutaraldehyde solution (to study platelet morphology). Sampling, their subsequent processing, including the production of platelet-poor plasma, met the requirements adopted for coagulological studies.

The assessment of plasma hemostasis (APTT – activated partial thromboplastin time; PTV – prothrombin time; TV – thrombin time; AT–III - antithrombin–III; FG – fibrinogen) was carried out according to the instructions for the sets of the company "Technology-standard"

(Barnaul) on the coagulograph "ACL-200" (USA). Determination of platelet concentration and morphology (PLT – platelet content; AF – activated forms; D – discocytes) was carried out by light microscopy in the Goryaev chamber using the Shitikova method.

The analysis of the fatty acid content in bear fat was carried out by gas-liquid chromatography in the form of methyl esters on a gas-liquid chromatograph "Crystal-2000" equipped with a capillary column with a liquid phase applied SE-30. Chromatographic analysis was carried out at the center for collective use "Chemical Analysis and identification of Substances" of the Tyumen State University.

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