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EFFECT OF CASEIN HYDROLYSATES ON BLOOD LIPIDEMIC INDEX

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Abstract

We studied the change in blood lipidemic parameters under the influence of casein hydrolysates obtained under the influence of gastric and pancreatic juices. The study was carried out in chronic experiments on dogs. It was concluded that casein hydrolysates obtained under the influence of gastric juice contribute to the improvement of digestion and absorption of fats. Casein hydrolysates, obtained under the influence of pancreatic juice, help to reduce the digestion and absorption of fats. The effects of the influence of casein hydrolysates on lipidemic blood parameters depend on which proteases under the influence of casein hydrolysates are obtained, and also, possibly, on the sequence of action of proteases on casein when hydrolysates and peptides are obtained from it.

Keywords: triglycerides, casein hydrolysates, fats, lipidemic indicators, gastric juice, pancreatic juice.

Relevance

Food proteins have been known since long periods for the need for the human body of their nutritional and functional properties. Amino acids from proteins have the property that they are absorbed during the period of dressing and digestion processes In recent years, one of the important objectives of the research carried out is the functional consumption aimed at maintaining human health and the use of peptides that are part of active foods, such as food substances.

Biologically active peptides have been described as"food components that, in addition to their nutritional value, have a positive physiological effect on the body" [4]. Bioactive food peptides have been shown to have broad physiological functions such as antigipertensive, antioxidant, opioid agonistic, immunomodulatory, antimicrobial, prebiotic, mineral binding, anti-thrombus dressing, and hypocholesterolemic effects[2]. Meat, fish and milk are sources of bebaxo protein for many populations around the world, in addition, these proteins have great potential as new sources of biologically active peptides..

Purpose of the study: to study the effect on the lipidemic parameters of blood in dogs under the influence of casein hydrolysates obtained by the action of gastric and pancreatic juice.

Material and Research Methods

We (60) conducted chronic experiments on dogs. Indicators of triglycerides and cholesterol in the blood were studied in animal studies before and within 6 hours after feeding with proteins or protein-fatty acids. Studies were carried out by feeding: 1 - 200 ml of a 30% casein solution; 2-200 ml of an emulsion containing 30% casein and 5% sunflower oil; 3-200 ml of an emulsion containing 30% casein gastric juice and 5% sunflower oil at rn-2; An emulsion containing 4-200 ml of 30% casein is incubated for 2 hours at rn-8 with pancreatic juice and 5% sunflower oil. The indicators of observations for 6 hours after feeding were taken into account, and the indicators of the general change in relation to the initial indicators of feeding were taken into account.

Statistical processing was carried out by calculating the average values and their average errors in the variational statistical method, determining the reliability coefficient (t) of the Styudent-Fisher difference. Differences in $p<0.05$ and less were considered statistically significant.

The results of the study and their muxokama. The data obtained showed that after feeding the animals with casein solution, during 6 hours of observation, no significant changes were observed in the blood triglyceride indicators (photo A.). We have seen that the indicators of triglycerides in the blood after feeding with casein and sunflower oil emulsion increased significantly from the results before eating. At the same time, a significant increase in these indicators was observed after 2soat (1.52±0.14 mmol/l), after 3 hours (1.57±0.16 mmol/l) and after 4 hours (1.35±0.12 mmol/l) ($P<0.01$) after 4 hours ($P < 0.01$).

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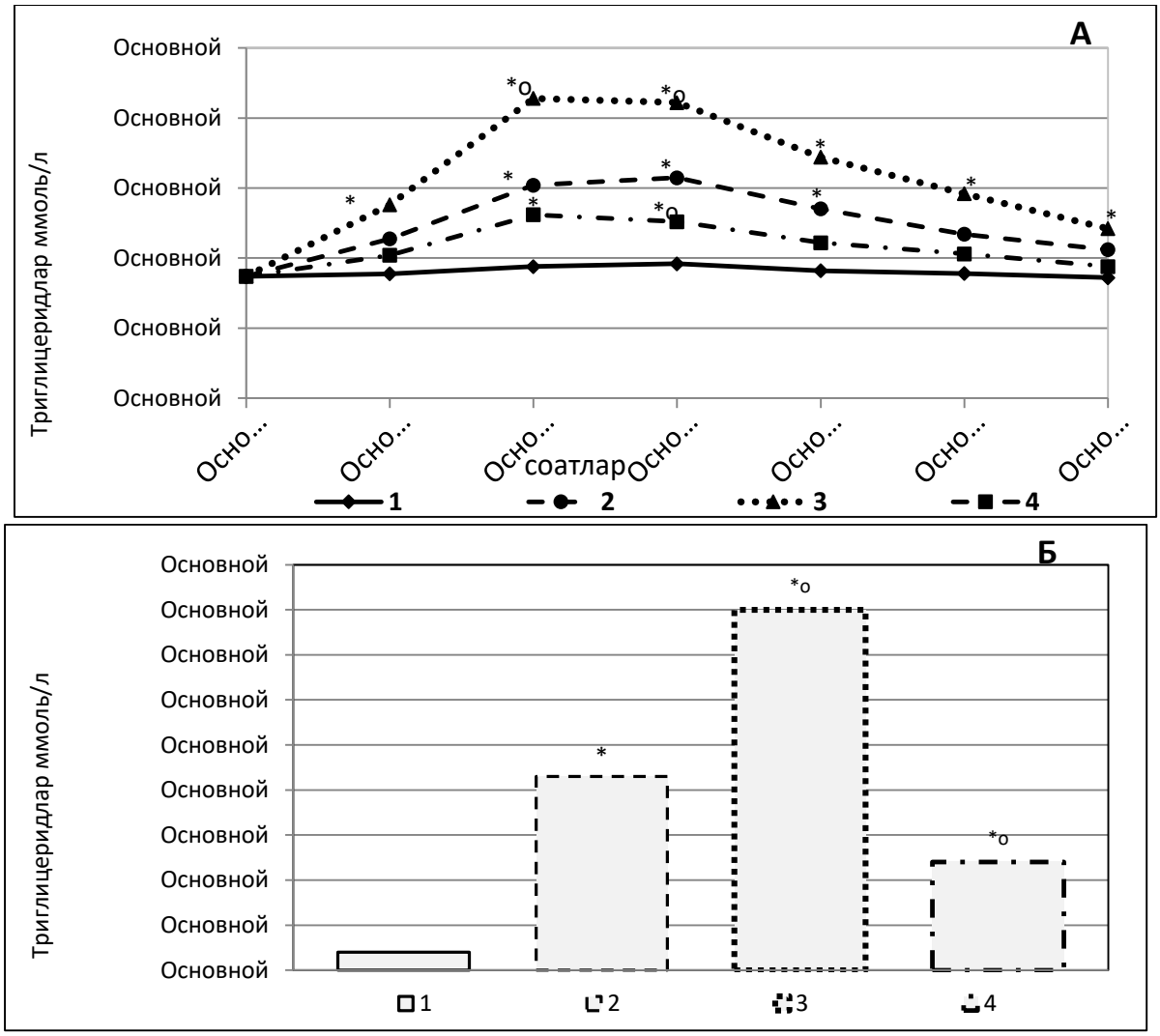

Photo 1.Changes in the indicators of triglycerides in the blood. A - average value of indicators before B-nutrition for 6 hours. Feeding composition 1-casein Liquid; 2 - casein and sunflower oil; 3 - casein and sunflower oil emulation, incubated for 2 hours under the influence of gastric juice; 4-casein and sunflower oil emulation, incubated for 2 hours under the influence of pancreatic juice.
* - significant degree of differences in indicators when feeding with casein solution.
significant differences in indicators when feeding emulsions containing o - casein and sunflower oil.

At the same time, after feeding with an incubated casein emulsion with gastric juice and sunflower oil, and when the triglyceride values obtained before were compared, the average for a 6-hour observation period was much higher than the values of triglycerides. At the same time, triglyceride indicators were 2.14 ± 0.19 mmol / l in the

2nd hour, and in the 3rd hour-2.11±0.20 mmol/l before feeding with casein emulsion without sunflower oil and incubation, and after 2 and 3 feeding, the indicators were much higher. After feeding sunflower oil and casein with an incubated emulsion under the influence of pancreatic juice, the 6-hour follow-up data were higher than the average before eating, but lower after feeding with casein and sunflower oil emulsion. At the same time, the indicators were higher than the data before feeding (0.87±0.07 mmol/l) in 1ch (1.31±0.11 mmol/l) and 2 hours (1.26±0.10 mmol/l), and the indicators were seen to decrease the results by going to the 3rd hour. From the same results, it was found that the average increase in triglycerides for 6 hours after feeding with casein and sunflower oil emulation was 0.43±0.03 mmol/l compared to pre-feeding indicators. At the same time, after feeding with an incubated emulsion of casein with sunflower oil under the influence of gastric juice, an average increase in triglycerides (fig. 1B) was 0.80±0.08 mmol/l higher than the increase in triglycerides after feeding with casein and sunflower oil emulsion. At the same time, the average increase in triglycerides after feeding with casein emulsion incubated with pancreatic juice and sunflower oil was 0.24±0.02 mmol/L.

Conclusions

Casein hydrolysates obtained under the influence of gastric juice help to improve the digestion and absorption of fats. Casein hydrolysates obtained by the action of pancreatic juice help to reduce the digestion and absorption of fats. The effect of casein hydrolysates on blood lipidemic parameters depends on which proteases are derived from under the influence of casein hydrolysates, and also on the sequence of action of proteases on casein when hydrolysates and peptides are obtained.

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