were found. There were markedly pronounced dystrophic changes of epithelial tubules. In the proximal tubules the phenomena of hyaline-drop dystrophy was observed, vacuolar dystrophy rarely. There was perivascular infiltration by lymphocytes and plasmocytes. The lympho-hystiocyties infiltration was observed around the glomerulus. The vacuolar degeneration of epithelial cells from the side of the direct distal tubules was observed.

The stroma of the renal cortex and medulla was swollen; the phenomena of lymphocyte infiltration were present. Vessels were moderately dilated, full of erythrocytes, some areas was with small extravasation were present. Most of the arterioles were normal, but sometimes plasma impregnation was detected.

Conclusion: In experimental hyperthyreosis microcirculation lesions and development of degenerative changes of the structural components of epithelial cells of proximal and distal tubules in the kidney were revealed.

CHANGE OF C-REACTIVE PROTEIN AND TUMOR NECROSIS FACTOR-α LEVELS IN DIABETES MELLITUS TYPE 2 AND L-ARGININE-L-GLUTAMATE

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The **Purpose** of our study was to determine C-reactive protein (CRP) and tumor necrosis factor- α (TNF-α) levels in patients with nonalcoholic fatty liver disease (NAFLD) in type 2 diabetes mellitus and their correction with NO synthesis precursor L-arginine-L-glutamate.

Materials and methods: We examined 30 patients with type 2 diabetes aged 35 to 65, who had symptoms of NAFLD. The functional state of liver, changes in plasma levels of pro-inflammatory cytokine TNF-α and CRP were evaluated in patients treated with L-arginine-L-glutamate.

Results: It was determined that in patients with type 2 diabetes and NAFLD the levels of TNF-α and CRP were significantly higher than in patients with type 2 diabetes and healthy subjects. A statistically significant decrease of TNF-α and CRP levels was established 8-10 days after the beginning of administration of L-arginine-L-glutamate in patients with type 2 diabetes and NAFLD as compared to the control group (patients with type 2 diabetes who did not take L-arginine-L-glutamate). The treatment was followed by improvement of functional liver tests (bilirubin, general cholesterol, triglycerides, β-lipoproteins, alaninaminotransferase, and general protein) and liver ultrasound picture.

Conclusions: Thus, administration of the NO-synthesis precursor L-arginine-L-glutamate in patients with diabetes mellitus type 2 and NAFLD contributes to the decrease of systemic inflammation, in particular - C-reactive protein and tumor necrosis factor- α and improvement of functional liver tests.

Key words: C-reactive protein, tumor necrosis factor- α, Diabetes Mellitus, L-arginine-L-glutamate.

INFLUENCE OF ESSENTIAL PHOSPHOLIPIDS ON THE LIVER STRUCTURE OF WHITE RATS IN EXPERIMENTAL HYPERTHYREOSIS

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Introduction: Essential phospholipids (EPL) play a universal role in the human body as a source of components of cell membranes and intracellular organelles. Numerous studies have found that except of hepatoprotective properties, EPL are able to reduce the degree of oxidation stress. The important role of free radical processes in the pathogenesis of hyperthyroidism and the relation in the functioning of liver and thyroid gland are known.

Purpose: to study the effects of essential phospholipids on the liver structure in hyperthyroid rats.

Methods and materials: The study was conducted on noninbred albino rats weighing 180 - 220 g, and divided into 3 groups: 1st control group (6 animals) - intact rats, 2nd group (6 animals) - rats with experimental thyrotoxicosis, induced by intragastric injection of L-thyroxine (200 mcg/kg a day for 28 days); the 3rd group (9 animals) – hyperthyroid rats, additionally injected with essential phospholipids (80 mg/kg a day from 14 to 28 days). Hyperthyroidism was induced on the 14th day of experiment.

Results: Morphological structure of the liver in experimental thyrotoxicosis on the 14th day was characterized by impairments violation of trabecular structure of liver lobules. Hepatocytes with hypertrophic nuclei were detected; some cells had features of lamellar degeneration. Unicellular and focal necrosis of hepatocytes, acidophilic cells like Councilman bodies were found. Hepatocytes bore signs of anisonucleosis and anisocytosis. The changes increased with hyperthyroidism duration: on the 28th day there was a significant damage to the structure of liver lobules, changes spread diffusely, necrotic hepatocytes, signs of balloon-degeneration of cytoplasm, karyopyknosis and karyolysis developed.

In case of using EFL on the 28th day of experiment moderate changes in structural components of the hepatic lobules were detected. The cells were normochromic, had round nuclei with a distinct nucleolus. No pronounced signs of eosinophilic degeneration, as in the comparison group were found. Signs of balloon-degeneration were revealed only in some cells. Cells with pyknotic heterochromatic nuclei were less common. Only isolated cells became necrotic with signs of karyolysis or without nuclei, they didn't form large areas of coagulative necrosis.

Conclusion: The results of the study showed, that essential phospholipids in rats with experimental hyperthyreosis had protective properties for hepatocytes, demonstrated by a significant reduction in their damage.

Key words: hyperthyreosis, essential phospholipids.

PARAMETERS OF THYROID HOMEOSTASIS IN PATIENTS WITH CHRONIC DIFFUSE LIVER DISEASES DEPENDING ON TYPE 1 DEIODINASE GENE POLYMORPHISM

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Introduction: Deiodinase enzymes are important in the control, of cellular thyroid activity. It was found that certain allelic variants of type I deiodinase (*DIO1*) gene may increase the impairment of thyroid gland function. Still it is not clear how polymorphism of this gene affects the development of thyroid dysfunction in patients with chronic diffuse liver diseases (HDLD).

Purpose: to study the features of thyroid homeostasis in patients with HDLD depending on A/C DIO1 gene polymorphism.