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**CHANGES IN BIOCHEMICAL MARKERS OF LIVER DAMAGE IN PATIENTS WITH  
NON-ALCOHOLIC STEATOHEPATITIS, DIABETIC KIDNEY DISEASE  
CONCURRENT WITH DIABETES, EFFECTIVENESS OF MEDICAL CORRECTION**

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The aim of the study was to determine the probable effect of a complex of metformin, Rosuvastatin, Essentiale forte H and Quercetin in patients with non-alcoholic steatohepatitis (NASH), diabetic kidney disease with type 2 diabetes mellitus (DM) on biochemical markers of liver damage, which are factors in the progression of these pathologies.

Studies in the dynamics of treatment in 60 patients with NASH with DM and stage I-III diabetic kidney disease (DKD) showed the following: among 48 patients (80.0%) were diagnosed with mild NASH, and in 12 (20, 0%) with NASH of moderate activity. Comorbid disease in 100% of patients with NASH was DM of moderate severity, among which 15 people (25.0%) had DM in the compensatory stage, in 45 (75.0%) subcompensated. All patients with NASH and DM had comorbid DKD, in particular, 21 cases of DKD stage I-II (35.0%), 20 people with DKD stage III (33.3%), 19 persons with stage IV DKD (31.7%).

Depending on the prescribed treatment on a random basis, the examined patients were divided into 2 groups: (1 group - control: 28 people) received a low-calorie diet with dietary restrictions 9, essential phospholipids (Essentiale forte H) 300 mg 2 caps. 3 times a day for 30 days for the treatment of active non-alcoholic steatohepatitis, for concomitant type 2 diabetes mellitus and hyperlipidemia prescribed metformin hydrochloride (Metformin-Teva) 1000 mg per day, rosuvastatin (Rosuvastatin-Teva) 5 mg once a day for a month. Group 2 consisted of patients (32 people) who, in addition to similar dietary recommendations, essential phospholipids, hypoglycemic and hypolipidemic therapy for a month, additionally received quercetin and povidone (Corvitin) 500 mg intravenously in 100 ml of isotropic solution for 10 days.

Analysis of blood biochemical parameters that indicate the dynamics of biochemical syndromes of NASH, glycemia and lipidogram indicate a higher efficacy of additional administration of Quercetin to the therapy prescribed by the protocol in patients with DM. Thus, the increased content of total bilirubin in the blood before treatment (1.8 times,  $p < 0.05$ ) in both groups probably decreased - in the 2nd group 1.4 times ( $p < 0.05$ ) due to its as unconjugated fraction, which decreased 1.4 times with normalization of the indicator, and conjugated fraction - 1.4 times ( $p < 0.05$ ). In group 1, the decrease in total bilirubin was 1.2 times ( $p < 0.05$ ) due to a decrease in only the unconjugated fraction by 1.2 times ( $p < 0.05$ ), direct bilirubin had only a tendency to decrease by 10, 3% ( $p > 0.05$ ). Although statins and metformin may adversely affect hepatocyte membrane integrity, we have not identified any adverse effects on enzymatic markers of cytolysis. On the contrary, under the influence of the prescribed therapy in patients of both groups, the activity of AST, increased before treatment by 3.0 times ( $p < 0.05$ ), decreased probably in group 1 - 1.4 times, in group 2 - in 1, 9 times ( $p < 0.05$ ), ALT activity, increased before treatment by 3.6 times ( $p < 0.05$ ), decreased by 1.3 and 1.7 times ( $p < 0.05$ ), respectively, with the presence of significant differences between indicators after treatment in groups ( $p < 0.05$ ). When comparing the indicators after treatment with these indicators in healthy individuals, it should be noted that in no group did these indicators reach the reference values ( $p < 0.05$ ). We found a significant effect of therapy only with the addition of quercetin on markers of cholestasis: for example, increased before treatment alkaline phosphatase activity by 1.9 times ( $p < 0.05$ ) and gamma-glutamyl transferase (increased before treatment by 1.4 times) ( $p < 0.05$ ) decreased only in group 2 - 1.2 times ( $p < 0.05$ ) without normalization of indicators, and in patients of group 1 indicators of alkaline phosphatase and gamma-glutamyl transferase activity even tended to increase.

Thus, complex therapy with essential phospholipids, Rosuvastatin, Metformin in combination with Quercetin in persons with comorbid NASH, DM and DKD contributes to a probable decrease in the intensity of biochemical changes in the liver, decreased development of the liver.