μIU / ml for women. The content in the blood of LPO products - compounds with isolated double bonds, diene conjugates, ketodienes and conjugated trienes - was studied by the method of I.A.Volchegorsky et al., malonic aldehyde (MA) of plasma and erythrocytes by Y.A.Vladimirov and A.I.Archakov. The activity of reduced glutathione (GR) was investigated by the titration method according to O.V.Travina in the modification of I.F.Meschishen; glutathione peroxidase (GP) and glutathione-S-transferase (GT) by I.F.Meshchishen; catalase by M.A.Korolyuk et al.

Estimation of the difference of the sample sets was performed using Student's t-test. The difference between the samples was considered statistically significant at $p < 0.05$.

To assess the effect of insulin levels on the processes of LPO and AOP in patients with AG, they were divided into two subgroups: with normo- (19 people) and hyperinsulinemia (25 people). In patients with AG with elevated IRI levels compared to patients with basal normoinsulinemia, there was a probable increase in the level of MA in erythrocytes by 10.80%, a decrease in GR by 8.33%. The concentration of GP and GT in patients with AG was probably lower compared to the control group (by 14.74% and 8.70%, respectively) only in the presence of hyperinsulinemia.

Thus, an increase in IRI levels in patients with AG is accompanied by an increase in LPO with a decrease in AOP.

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COMPLEX TREATMENT WITH QUERCETIN INCLUSION IN CHRONIC NONVIRAL HEPATITIS PATIENTS

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Flavonoids have high antioxidant activity, which is most pronounced in quercetin, stimulate the synthesis of proteins, regulate the exchange of phospholipids and have membrane-stabilizing properties. Quercetin has pronounced anti-inflammatory properties due to a decrease in the activity of 5-lipoxygenase, which reduces the synthesis of leukotrienes from arachidonic acid.

The aim of the study was to investigate the effect of quercetin added to the basic treatment on the clinical course, biochemical parameters and indicators of the cytokine profile in chronic nonviral hepatitis (CH) patients. 55 patients with active nonviral CH were involved in the study, who according to the administered treatment were divided into two groups. The main group consisted of 25 patients with active CH who in addition to the standard treatment received pills of Quercetin in the dose of 40 mg three times daily 30 minutes before meals within 14-16 days. The comparison group consisted of 30 patients with active nonviral CH who received the standard basic treatment comparable to those of the main group by age and gender distribution. The control group consisted of 45 practically healthy individuals of the correlative age and gender. Written informed consents were obtained from all the participants. All of the observed patients and healthy individuals underwent comprehensive clinical, laboratory and instrumental diagnostic investigations. The range of indicators of biochemical blood analysis included: total bilirubin and its fractions, total protein and albumin, urea, creatinine, aspartateaminotransferase (AST), alanineaminotransferase (ALT), lactatedehydrogenase (LDG), gamma-glutamyltransferase (GGT), alkalinephosphatase (AP). The plasma levels of tumor necrosis factor-α (TNF-α), interleukin 10 (IL-10), atrial natriuretic propeptide(1-98) (proANP)were investigated both in the examined patients and healthy individuals. Faster improvement of general condition, more effective reduction of general weakness and sensation of heaviness in the right hypochondrium, decreased discomfort in the heart area and shortness of breath, increased tolerance to physical activity were seen in patients who in addition to basic treatment received quercetin. According to these data significant decrease in the total bilirubin plasma concentration during treatment was observed in patients of both groups: by 33,5% ($p= 0,008$) in the main group and by 26,6% ($p = 0,02$) in the comparison group as compared to the indicators before the treatment. ALT activity in patients of the main group decreased by 43,7% ($p = 0,02$), in patients of the comparison group – by 28,1% ($p = 0,03$) after the treatment. Significant decrease of AST activity was achieved only in patients of the main group – by 27,8% ($p = 0,03$). There was a significant decrease in LDG activity by 16,9% ($p = 0,02$), as

compared to appropriate rates before treatment in patients of the main group. Significant decrease of AP plasma activity (by 30,9% (p = 0,03) was observed only in patients who received quercetin in addition to the standart treatment. Similar dynamics was characteristic for GGT activity in both groups of patients, however, in patients of the main group, this decrease was 55,0% (p = 0,009), in the comparison group– 33,1% (p = 0,03). Patients of the main group showed a significant decrease in TNF-α content in the blood by 61,9% (p = 0,02), while patients of the comparison group demonstrated only the tendency to reduce this proinflammatory cytokine. IL-10 before the initiation of treatment was elevated in the blood of the observed patients as ompared to practically healthy people. Additional quercetin administration to the standard treatment promoted significant decrease of proANP level in patients of the main group by 53,8% (p = 0,04).

During two weeks of treatment clinical symptoms, functional liver parameters accompanied by a decrease in tumor necrosis factor-α and atrial natriuretic propeptide blood levels were more effectively corrected in CH patients who in addition to the standard treatment received quercetin. For a complete correction of clinical manifestations of the disease, biochemical changes and the cytokine profile two-week complex treatment with quercetin inclusion is not enough, which requires longer administration of the chosen treatment course before the onset of persistent remission at the out-patient stage.

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THE ASSOCIATION OF HORMONAL AND METABOLIC PARAMETERS AND THE *AGT* GENE POLYMORPHISM (RS699) IN PATIENTS WITH ESSENTIAL HYPERTENSION

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The aim of the study is to analyze the association of the angiotensinogen gene polymorphism (*AGT*, rs699) with hormonal and metabolic parameters in patients with essential arterial hypertension (EAH). 72 subjects with EAH and target-organ damaging (2nd stage), moderate, high or very high cardiovascular risk were involved in the case-control study. Among them there were 70.84% (51) females and 29.16% (21) males of average age 59.87±7.98. Control group consisted of forty-eight practically healthy individuals with relevant age (49.13±6.28) and sex distribution (62% females, 38% males). *AGT* (rs699) gene polymorphism was examined by Real-time polymerase chain reaction. Intact parathyroid hormone (intact PTH) and vitamin 25 (OH) D levels in blood serum were determined by chemiluminescence immunoassay (MAGLUMI).

As a result, the concentration of ionized $Ca2^{+}$ in blood in patients with TT-genotype of the *AGT* gene (rs699) was extremely likely to be lower than in CC-genotype carriers (p=0.051). In addition, we found out that in men with EAH who were T-allele carriers (TT- and TC-genotypes) the level of ionized $Ca2^{+}$ in blood is probably lower than in women of the corresponding genotypes: 1.14 ± 0.01 vs. 1.17 ± 0.015 mmol/l (p <0,05) and 1,14 ± 0,01 vs. 1,19 ± 0,02 mmol/l (p<0,05), respectively. Whereas in the CC-genotype carriers, on the contrary, the level of ionized $Ca2^{+}$ was higher in men than in women: 1.18 ± 0.01 vs. 1.14 ± 0.015 mmol/l (p = 0.014). Against this background, the level of vitamin 25 (OH) D in the blood of the *AGT* gene (rs699) TT-genotype carriers in patients with EAH became lower than in those with the CC-genotype by 16.24% (p=0.049), and the concentration of intact PTH on the contrary, higher, but abnormal and unexpected – by 7.30%. That is, in our opinion, a manifestation of compensatory-adaptive reactions of the body aimed at maintaining hormonal-metabolic homeostasis and calcium-phosphorus ion balance. In the control group, the difference in intact PTH was statistically significant, being higher in TT-carriers – by 28.89% and 21.26% (P_{TT} <0.05).

Thus, one-way ANOVA analysis of variance did not confirm the association of the *AGT* gene (rs699) with the studied hormonal and metabolic parameters.