



AN INNOVATIVE APPROACH TO THE IMMUNO-BIOCHEMICAL DIAGNOSIS OF CHOLESTATIC SYNDROME IN AN OUTPATIENT CLINIC

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Annotation. In recent years, there has been an increase in the frequency of cholestasis syndrome in viral hepatitis in children from 0.9 to 4.9% in acute hepatitis to 5.9% in chronic hepatitis. Cholestasis syndrome occurs in both acute and chronic viral hepatitis of various etiologies.

Current trends in the study of cholestasis are related to the study its molecular mechanisms. The transport processes occurring at the cellular and subcellular levels, as well as the processes responsible for the movement of bile components through the hepatocyte into the bile capillaries are studied. Deciphered the structure of many transport

proteins of the basal and tubular membranes of the hepatocyte, intracellular transport binding proteins. The regulation of their function is studied at the genetic level. One of the modern concepts of cholestatic liver lesions suggests a possible redistribution of transport proteins of the tubular membrane towards the basolateral membrane as a key pathogenetic factor [Podymova S.D., 2001; Tabolin V.A., et al. 2000]

Keywords: endotoxycosis, chronic cholecystitis, biochemical parameters and evaluation

The progress of genetic technologies has expanded our understanding of cholestatic diseases. The review of Henkel SA and the whole of 2019 provides information on a number of recently described mutations of PSVC, and to date about 100 variants of this pathology have been described.

A mutation of the gene encoding the TJP2 protein causes a disruption of the structure of flat compounds in the liver. Mutation of the NR1H4 gene encoding the nuclear

receptor X farnesoid (so far), regulating the exchange of bile acids, as well as providing protection against hepatocancerogenesis.

New variants of cholestatic pathology are described as manifest neonatal forms of PSVC with the development of severe coagulopathy, low levels of γ -GTP and

elevated α -fetoprotein, and as

cases of gestational and drug-induced cholestasis. Mutation of the MYO5B motor protein synthesis gene, leading to dysregulation of rab proteins and disruption of FGUP delivery, is manifested by neonatal cholestasis with a low level of GGTP. State regulation may be associated with the disruption of the mitochondrial transnational operator TFAM. Renal-hepatic ciliopathy with sclerosing cholangitis in newborns is caused by a mutation of the gene for synthesis of the tubulin-binding protein DCDC2 [1].

Cholestasis syndrome is a frequent manifestation of chronic liver diseases (CKD) of any etiology: alcoholic, viral, drug, metabolic, etc. The formation of cholestasis is based on a violation of the synthesis, secretion or outflow of bile. The addition of intrahepatic cholestasis to chronic liver disease changes its course, makes the patient's condition heavier, reduces immunity, leads to the development of severe septic complications, significantly reduces the quality of life (QOL) and worsens the prognosis [4].

Research results and their discussion

Clinical and biochemical monitoring of the dynamics of the analyzed indicators of the antioxidant system and oxidant status revealed their different informative value in assessing the condition of patients with chronic cholecystitis during laparoscopic operations and in the early postoperative period.

The dynamics of the studied indicators before the operation was as follows: OAA and OOA in blood plasma were increased by 2.1 and 3.8 times relative to the norm, respectively, and the OAA of red blood cells was reduced by 1.4

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2.1 and 3.8 times, respectively, and oaagritrit was reduced by 1.4 times. The data obtained may indicate the voltage of the system of generation and utilization of active oxygenating radicals ($p < 0.05$).

Changes in catalase activity in erythrocytes served as confirmation of the dynamics of these indicators. Prior to surgery, in patients with chronic cholecystitis, catalase activity in erythrocytes was reduced by 2.9 times. Against this background, the activity of ceruloplasmin was increased by 1.4 times, and the level of malondialdehyde (MDA) in the blood was reduced by 1.6 times ($p <$

0.05).

Based on these data, it seemed important to compare the dynamics of the parameters of free radical oxidation and antioxidant

protection of blood protection before cholecystectomy and in the early postoperative period in patients with chronic cholecystitis.

During cholecystectomy, the most pronounced changes were characterized by OAA and catalase activity in erythrocytes: after surgery, they increased by 1.3 times compared to the values of these indicators before surgery ($p < 0.05$).

In the dynamics of observations by the 1st day after surgery, the OAA of blood plasma and erythrocytes changed most significantly: it increased by 1.25 times and 1.4 times, respectively, compared with the values of this indicator before surgery ($p < 0.05$). At the same time, the level of MDA in the blood increased by 1.5 times, reaching the values of the norm. [8].

The OAA of erythrocytes in patients with chronic cholecystitis on the 1st day of follow-up also reached the lower limit of the corresponding values in donors. However, in general, the data obtained may indicate the intensity of reactions anti-oxidant protection in patients with chronic cholecystitis: up to 5 days of observations, trends in the dynamics of OAA and OOA of blood plasma, ceruloplasmin activity persisted.

The different informative value of the antioxidant and oxidant status of blood in patients with chronic cholecystitis during laparoscopic operations and in the early postoperative period (1-5 days) is shown. The observed increase in the level of OAA of erythrocytes, approaching the lower limit of the norm on the 1st day after surgery, can serve as a favorable prognostic sign. [12].

The severity of oxidative processes and the activity of the antioxidant system were correlated with the dynamics of biochemical parameters for assessing endotoxemia in chronic cholecystitis.

The level of MSM in patients with chronic cholecystitis from the beginning of observations before surgery and up to 3 days inclusive was increased by 2 times in relation to the norm, slightly decreasing by the 5th day after surgery, but remaining increased by 1.7 times, compared with the control group ($p < 0.05$).

Against this background, the concentration of OP in plasma reached the highest values on the 1st day after surgery and was increased by 2.4 times relative to the group of outpatient patients, maintaining this level up to three days of observations inclusive ($p < 0.05$).

The final stage of the analysis of the severity of the condition of patients with chronic cholecystitis in the early postoperative period was the application of the calculated indices of the severity of endogenous intoxication and the equations of

multifactorial regression of the studied hematological and clinical-biochemical tests with the parameters of the anti-oxidant and oxidant blood systems.

In patients with chronic cholecystitis, the following statistically significant changes in the calculated indices of the severity of endotoxemia were revealed in the dynamics of observations:

1) the coefficient K1, reflecting the distribution of HH and SMM between plasma proteins and erythrocyte glycocalyx and equal to the ratio of the corresponding values, was 1.5 times higher after surgery than in the control group ($p < 0.05$);

2) the integral index of endogenous intoxication, calculated as the sum of the products of the values of HH and SMM and OP in blood plasma and erythrocytes, on the 1st day after surgery was 2 times higher than in the control group (and due to IPLASM increased by 4.2 times), $p < 0.05$.

Consequently, among the components of the clinical and biochemical assessment of the severity of the condition of patients with chronic cholecystitis in the course of surgical treatment, tests characterizing the ratio of the studied parameters in various biological environments of the body, including blood plasma and erythrocytes, should occupy an important place.

The values of MSM showed the most statistically significant regressions with indicators of the antioxidant and oxidant status of blood and calculated indices of intoxication in patients with chronic cholecystitis: with the values of the catabolic pool and AI in erythrocytes before surgery, with the values of OP in erythrocytes after surgery, with the concentration of MDA in the blood at 1st and 5th days after the operation, with OOA on the 3rd day after the operation. Conclusion. Thus, in patients with chronic cholecystitis after surgical intervention, the most indicative clinical, bio-chemical aspects of monitoring the severity of endotoxemia may be indicators of the antioxidant and oxidant blood systems. The use of these biochemical tests allows for a more informative assessment and characterization of the balance of free radical oxidation and antioxidant protection of blood against the background of changes in the level of medium-weight molecules and oligopeptides. These results are consistent with the data presented in our previous studies [11].

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