

THE STATE OF LIPID PEROXIDATION AND ANTIOXIDANT DEFENCE SYSTEM IN PATIENTS WITH CHRONIC CALCULOUS CHOLECYSTITIS

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Gallstone disease or cholelithiasis is one of the most common diseases in gastroenterology. According to different authors, the gallstone disease incidence among the population of the developed countries is within 8–15%. Gallstone disease is more often occurs among inhabitants of Europe, North and South America, less often – among inhabitants of Asia and Central Africa. In Ukraine almost 300 thousand people are registered annually with the disease, about 12–15 thousand cholecystectomies are made.

Predictors for course of the gallstone disease are age over 40 years, female gender, multiple pregnancies, genetic predisposition, lipid and carbohydrate metabolism disturbance, hyperadipositas, inflammatory processes in the gallbladder.

MATERIALS AND METHODS

In our case 60 patients with gallstone disease took part, aged 24 to 68 years, among them 11 (22%) men and 49 (78%) women. Duration of disease was from 2 months to 20 years. The diagnosis was determined as per complex clinical laboratory and instrumental methods of examination, according to the Clinical protocol of provision of care delivery for patients who have gallstone disease, approved by the Ministry of Health of Ukraine No. 271 of 13.06.2005.

For the reference basis of biochemical and immunological findings the data of the Laboratory of Immunology and Biochemistry of the Scientific and Practical Association "Rehabilitation" of Ministry of Health of Ukraine were taken.

The measures of lipid peroxidation and antioxidant defence were diagnosed in patients: isolated double bonds content in blood, diethenoid conjugate, malondialdehyde, catalase, superoxide dismutase. Mathematical treatment of the results was carried out using standard software packages Microsoft Windows XP, Microsoft Office.



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RESULTS AND DISCUSSION

During the clinical course of gallstone disease the following features were evidenced: general weakness, loss of appetite, esthesia of bitterness in the mouth, sicchasia, periodic occurrence of pain syndrome in the right hypochondrium, often associated with diet breaking. During objective examination the subicteriousness of sclera, tongue plaque, moderate disease in the right hypochondrium were noticed.

As per results of ultrasound examination of the abdominal cavity organs of patients, thickening of the walls of the gallbladder, in some cases its deformation, the presence of concretions in the gallbladder was noticed. The increase echolucency of the liver, pancreas and increase of their size was inspected.

During endoscopic examination in most patients coexisted esophagus and gastroduodenal abnormality

was observed: reflux esophagitis, erythematous and erosive gastropathy, duodenogastric reflux, stomach ulcer.

Double bonds content was $5,67 \pm 0,10$ U.rd.g/ml ($p < 0,05$), which was for 2.18 times above the norm ($2,61 \pm 0,14$ U.rd.g/ml). The concentration of diethenoid conjugate was equal to $2,62 \pm 0,18$ U.rd.g/ml ($p < 0,05$), which exceeded the norm ($1,27 \pm 0,08$ U.rd.g/ml) in 2,06 times. The ketodyens rate was $1,37 \pm 0,07$ U.rd.hg/ml ($p < 0,05$), exceeding the rate of $0,62 \pm 0,05$ U.rd.g/ml in 2.21 times. The increased concentrations of malondialdehyde was noticed - $7,54 \pm 0,25$ nmol/l ($p < 0,05$) — in 2.16 times higher compared to the norm ($3,49 \pm 0,21$ nmol/l). Reduction of antioxidant protection was observed: catalase activity was below of the normal rate ($72,2 \pm 0,8\%$) in 2.1 times and was $31,26 \pm 0,1\%$, the concentration of superoxide dismutase was equal to $1,88 \pm 0,4$ U/mg Hb, which is in 1.9 times lower than the normal rate ($4,14 \pm 0,36$ U/mg Hb).

SUMMARY

The clinical presentation of the patients with gallstone disease was characterized by asthenovegetative, diarrheal and pain syndrome, often accompanied by abnormal changes of the liver, pancreas, esophagus and gastroduodenal abnormality.

The measures of lipid peroxidation proved the enhancement of lipid peroxidation, which was characterized by the growth of double bonds, diethenoid

conjugate, ketodyens, and malondialdehyde. At the same time catalase and superoxide dismutase activity reduction was noticed, which may be evidence of antioxidant defense system wasting in patients with chronic calculous cholecystitis.

The results of studies show the need for a complex approach to treatment and preoperative assessment of patients with gallstone disease using antioxidant medication, but it is subject to further treatment and research.

REFERENCES

1. **ELWOOD D.R.** Cholecystitis / D.R. Elwood // Surg. Clin. North. – 2008. – V. 88, No 6. – P. 1241–1252.
2. **GEROK W.** Hepatologie (2 Auflage) / W. Gerok. – Munchen: Urban – Schwarzenberg, 1995. – 165 p.
3. **MIZSAUS B.** Diagnosis and treatment of cholecystitis / B. Mizsaus, P.E. Kulchi // Ves. Im. I. I. Grek. – 2004. – No 123 (8). – P. 48–51.
4. **NESLAND J.M.** Chronic cholecystitis / J.M. Nesland // Ultrastruct. Pathol. – 2004. – V. 28. – P. 121 – 123.
5. **PAPI C. T., CATARCI M., AMBROSIO L. D. ET AL.** Timing of cholecystectomy fo acute calculous cholecystitis: A meta-analysis // Am. J. Gastroenterol. 2004. Vol. 99. P. 145–147.
6. **UCHIAMA K.** Lony-tesum prognosis after treatment of patient with choledocholitiasis / K. Uchiama, H. Onisi, M. Tani // Ann. Surg. – 2008. – Vol. 238 (1). – P. 97–102.