Biliary Diseases.
Laparoscopic Cholecystectomy. Postcholecystectomy Syndrome.
Treatment: Celecoxib and Ursodeoxycholic acid

Biliary diseases (gallbladder dysfunction, chronic acalculous cholecystitis, chronic calculous cholecystitis, gallstone disease, postcholecystectomy syndrome) are very widespread diseases of the digestive apparatus [1-8].

Currently in the U.S. there are approximately 30 million patients with cholelithiasis, and about 15 million patients recovering from surgery, which is 14.3% of the total population, in Canada – 25.0% (8.7 million), in Chile – 21.6-35.2% (4.8 million), in Peru – 14.3% (4.2 million), in South Africa – 10.0% (4.9 million), in Italy – 13.8% (8.3 million), in Sweden – 15.0-50.5% (2.4 million), in Denmark – 8.8-24.0% (about 1.0 million), in Norway – 21.9% (about 1.0 million), in the Great Britain – 7.5-21.7% (9.1 million), in Austria – 25.5% (2.1 million), in Germany – 19.7% (16.1 million), in Poland – 19.5% (7.4 million), in Romania – 10.9% (2.3 million), in France – 15.7% (10.3 million), in Russia – 5.0- 25.0% (20.1 million), in India – 6.1% (74.0 million), in China – 3.5% (47.1 million), in Japan – 3.2% (4.1 million), etc. [10-14]. Cholesterol cholelithiasis is 70-80% of the total number of gallstone disease [10-14].

Early diagnosis and treatment of pathology of biliary system is of great clinical importance because of the transformation of functional disorders of the biliary system in organic pathology – the gallbladder dysfunction → chronic cholecystitis acalculous without biliary sludge → chronic acalculous cholecystitis with biliary sludge → chronic calculous cholecystitis, which occurs as a result violation of colloidal stability of bile and join the inflammatory process [1-9].

Chronic calculous cholecystitis and cholesterol gallstone disease as diseases requiring surgical treatment, considered one of the main problems in gastroenterology. Laparoscopic cholecystectomy is considered the "gold" standard in the treatment of chronic calculous cholecystitis [15-23]. Annually in the U.S. operated by 750,000 patients [10-14], in Germany - 190,000 [10-14], Russia - 160.000 [4].

The absence of the gallbladder leads to functional biliary hypertension and increased hepatic and common bile duct [8, 24-31]. 3-5 years after cholecystectomy increases right and left hepatic ducts equity [8, 24-31].

Functional hypertension in the common bile duct contributes to the appearance of functional and hypertension in Wirsung's pancreatic duct with the development of the phenomena of chronic pancreatitis [8, 24-31]. At the same time period in some patients this is accompanied by the progression of chronic pancreatitis, sphincter of Oddi dysfunction and duodenogastric reflux [8, 24-45].

Duodenogastric reflux of mixture of duodenal bile with pancreatic juice promotes a chronic atrophic antral gastritis [8, 24-45].

From 40% to 60% of patients after cholecystectomy dyspeptic suffering from various disorders, from 20% to 40% of pains of different localization [32-45].

Up to 70% of patients after cholecystectomy have chronic effects of "bland" cholestasis, chronic cholestatic hepatitis and chronic compensatory bile acid-dependent apoptosis of hepatocytes [31-36].

Patients undergoing cholecystectomy had an increased prevalence of metabolic risk factors for cardiovascular disease, including type 2 diabetes mellitus, high blood pressure, and high cholesterol levels [46-50].

Part of patients after cholecystectomy with increased concentration of hydrophobic hepatotoxic co-carcinogenic deoxicholic bile acid in serum and/or feces with increased risk of colon cancer [51-60].

For the treatment of biliary sludge and dissolution of cholesterol gallstones is used ursodeoxycholic bile acid [61-64]. When using the ursodeoxycholic bile acid the dissolution efficiency varies from 20% to 70%, the dissolution time is from 6 to 24 months, and the recurrence of cholelithiasis is 10% per annum or 50% within 5 years [61-64].

Absorption and concentration and evacuation function of the gall bladder plays an important role in the physiology of the formation of gallbladder bile. The mechanism of formation of lithogenic gallbladder bile was due to lower absorption and concentration functions of the gallbladder. Reducing the concentration of bile acids in gallbladder bile associated with lower water absorption of the gallbladder mucosa. Increasing the concentration of cholesterol in phospholipid vesicles - a decrease in absorbance phospholipid vesicles [9, 65-70].

Pathogenesis of cholesterol gall stones include the presence of:

1) chronic "bland" intragallbladder cholestasis (reduced absorption, concentration and evacuation function of the gall bladder), contributing to the formation of lithogenic gallbladder bile, and

2) chronic "bland" intrahepatic cholestasis (reduced excretory function of the liver), may influence the formation of lithogenic hepatic bile. These factors contribute to the formation of cholesterol gallstones in the gall bladder [9, 65-70].

Absorption, concentration and evacuation function of the gall bladder plays an important role in the regulation of gallbladder-dependent and gallbladder-independent enterohepatic circulation of bile acids. The gallbladder in humans, accumulating bile acids and excluding them from the enterohepatic circulation, helps reduce the formation of secondary hydrophobic hepatotoxic bile acids (lithocholic and deoxycholic bile acids) and thus protects the liver, gastric mucosa, gallbladder, and colon cancer from exposure to them.

Absorption and concentration and evacuation function of the gallbladder, the functional state of the sphincter of Oddi and anatomical features of the sphincter of Oddi hepatopancreatic ampulla determine development and dominance of a certain type of pathology in each individual patient with biliary tract disease [9, 65-96].

Celecoxib, effectively blocking the inflammation in the gallbladder wall, significantly reduces the risk of cholesterol gallstones [97].

Ursodeoxycholic acid during chronic administration, blocking the inflammation in the gallbladder wall [98-101], dissolving the crystals of monohydrate cholesterol [102-103], reducing the gallbladder bile lithogenicity [104-108], restoring the evacuation function of the gallbladder [109-114], improving accumulative-excretory function of the liver [115-119], increasing blood flow to the liver [120-128] and reducing lithogenicity hepatic bile [115, 117], significantly reduces the risk of biliary sludge in the transformation of cholesterol gallstones [129], the risk of acute calculous cholecystitis and biliary colic [130-131], the risk of acute biliary pancreatitis and recurrent pancreatitis [130-135] in patients with cholelithiasis.

And also, ursodeoxycholic acid during chronic administration, restoring the "passage" of hepatic bile in the gall bladder and reducing the "passage" of hepatic bile into the duodenum, eliminates the mechanism of duodenal-gastric reflux of bile, reduces the risk of bile-reflux gastritis (atrophic antral gastritis) and the appearance of intestinal metaplasia in gastric antral [136-143].

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