

Pathogenetic treatment of functional gallbladder and sphincter of Oddi disorders (E1, E2 and E3), functional dyspepsia (B1a and B1b) and symptomatic biliary diseases with celecoxib and ursodeoxycholic acid (UDCA)

1. Treatment of gallbladder dysfunction (with biliary pain) with/without biliary type III of sphincter of Oddi dysfunction and prophylaxis of chronic acalculous cholecystitis – celecoxib – 100 mg 2 times per day – 5-7 days, next UDCA – 750 mg 1 time before going to bed – 14 days. Effectiveness of this treatment is 95% and a prolongation of remission period up to 18-24 months.
2. Treatment of chronic acalculous cholecystitis (with biliary pain) with/without biliary type III of sphincter of Oddi dysfunction and prophylaxis of chronic acalculous cholecystitis with biliary sludge, atrophic antral gastritis (duodenogastric reflux and bile reflux gastritis), chronic biliary pancreatitis (biliopancreatic reflux) and chronic spastic aseptic pancreatitis (pancreatic type III of sphincter of Oddi dysfunction) – celecoxib – 100 mg 2 times per day – 5-7 days, next UDCA – 750 mg 1 time before going to bed – 30 days. Effectiveness of this treatment is 95% and a prolongation of remission period up to 18-24 months.
3. Treatment of chronic acalculous cholecystitis with biliary sludge (with biliary pain) with/without biliary type III of sphincter of Oddi dysfunction and prophylaxis of chronic calculous cholecystitis, atrophic antral gastritis (duodenogastric reflux and bile reflux gastritis), chronic biliary pancreatitis (biliopancreatic reflux) and chronic spastic aseptic pancreatitis (pancreatic type III of sphincter of Oddi dysfunction) (fig. 41 a, b, c, d; fig. 41, 42, 43, 44) – celecoxib – 100 mg 2 times per day – 5-7 days, next UDCA – 750 mg 1 time before going to bed – 2 months. Effectiveness of this treatment is 95% and a prolongation of remission period up to 19.3±2.1 months.
4. Treatment of chronic calculous cholecystitis (with biliary pain) with/without biliary type III of sphincter of Oddi dysfunction and prophylaxis of acute calculous cholecystitis, atrophic antral gastritis (duodenogastric reflux and bile reflux gastritis), chronic biliary pancreatitis (biliopancreatic reflux) and chronic spastic aseptic pancreatitis (pancreatic type III of sphincter of Oddi dysfunction) – celecoxib – 100 mg 2 times per day – 5-7 days, next UDCA – 750 mg 1 time before going to bed – 3 months. Effectiveness of this treatment is 95% and a prolongation of remission period up to 18-24 months.
5. Treatment of postcholecystectomy syndrome (with biliary pain) with/without biliary type III of sphincter of Oddi dysfunction and prophylaxis of choledocholithiasis, atrophic antral gastritis (duodenogastric reflux and bile reflux gastritis), chronic biliary pancreatitis (biliopancreatic reflux) and chronic spastic aseptic pancreatitis (pancreatic type III of sphincter of Oddi dysfunction) – celecoxib – 100 mg 2 times per day – 5-7 days, next UDCA – 750 mg 1 time before going to bed – 2 months. Effectiveness of this treatment is 95% and a prolongation of remission period up to 18-24 months.
6. Treatment of chronic atrophic antral gastritis (duodenogastric reflux and bile reflux gastritis) (with biliary pain) and duodeno-gastroesophageal reflux (incompetence of Oddi's sphincter) – celecoxib – 100 mg 2 times per day – 5 days, next UDCA – 750 mg 1 time before going to bed – 14 days. Estimated effectiveness of this treatment is 90-95% and a prolongation of remission period up to 18-24 months.
7. Treatment of chronic biliary pancreatitis (biliopancreatic reflux) or chronic spastic aseptic pancreatitis (pancreatic type III of sphincter of Oddi dysfunction) (with biliary and/or pancreatic pain) – celecoxib – 100 mg 2 times per day – 7-10 days, next UDCA – 750 mg 1 time before going to bed – 30 days. Estimated effectiveness of this treatment is 90-95% and a prolongation of remission period up to 18-24 months.

The pathogenetic correction of metabolic and morpho-functional disturbances in the gallbladder and liver in patients with gallbladder dysfunction helps decrease the risk of appearance of the chronic acalculous cholecystitis, in patients with chronic acalculous cholecystitis helps decrease the risk of appearance of the chronic calculous cholecystitis (fig. 41, 42, 43, 44), in patients with chronic calculous cholecystitis helps decrease the risk of appearance of the acute calculous cholecystitis, in patients with postcholecystectomy syndrome helps decrease the risk of appearance of the choledocholithiasis.

Pathogenetic treatment with Celecoxib will help diminish the duration of disease period and the quantity of patients with biliary diseases by 30-40%. Also, the remission period will be increased up to 18-24 months.

The conducted pathogenetic treatment of patients with chronic acalculous cholecystitis with biliary sludge promotes more effective controlling of biliary pain and inflammation in gallbladder wall, the restoration of excretion function of liver, the recovery of ejection fraction of gallbladder, and the restoration of the portal blood flow.

The pathogenetic treatment of patients with biliary diseases must include COX-2 inhibitors (celecoxib) and UDCA.

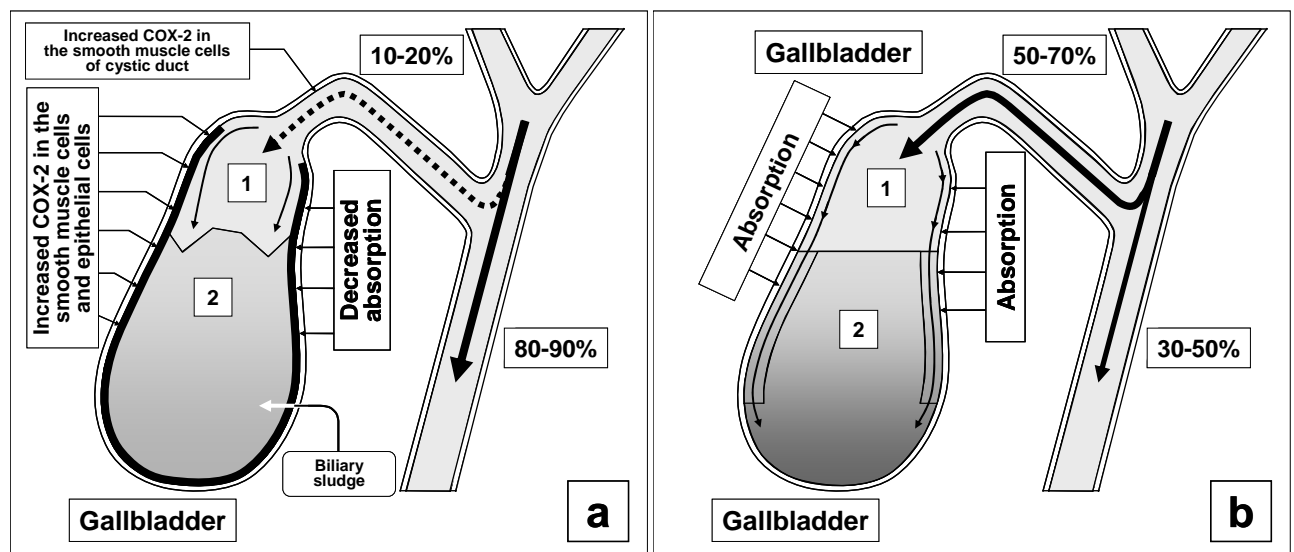


Fig. 41. "Passive" passage of hepatic bile into the gallbladder and into the duodenum in patients with chronic acalculous cholecystitis with biliary sludge before (a) and after (b) treatment with celecoxib and UDCA. 1 = hepatic bile; 2 = gallbladder bile.

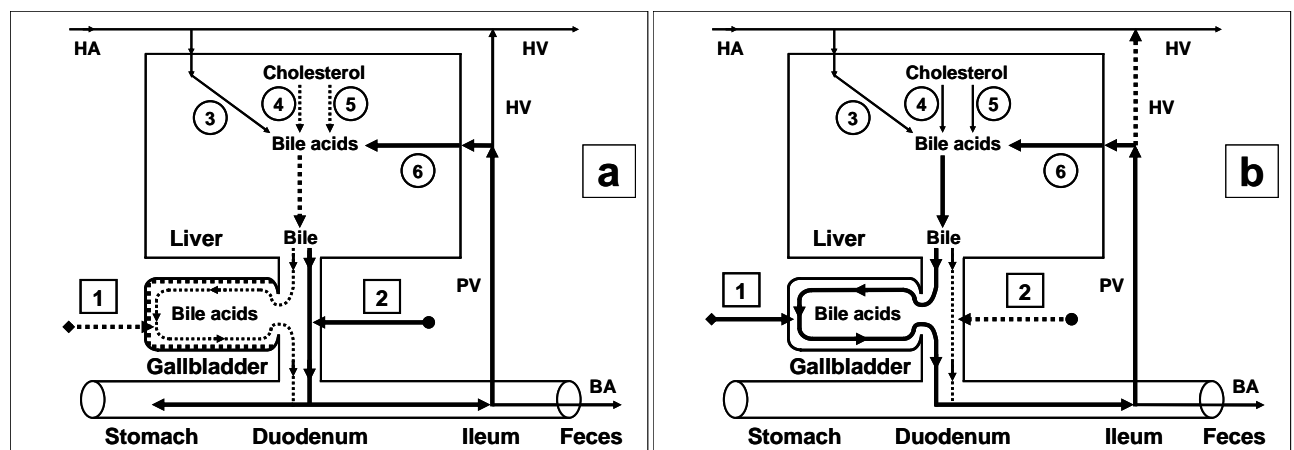


Fig. 42. Enterohepatic circulation of bile acids in patients with chronic acalculous cholecystitis with biliary sludge before (a) and after (b) treatment with celecoxib and UDCA. 1 = gallbladder-dependent enterohepatic circulation of bile acids; 2 = gallbladder-independent enterohepatic circulation of bile acids; 3 = bile acids entering the liver through the hepatic artery; 4 = synthesis of cholic acid: cholesterol-7 α -hydroxylase; 5 = synthesis of chenodeoxycholic acid: cholesterol-27-hydroxylase; 6 = bile acids entering the liver through the portal vein. BA = bile acids; HA = hepatic artery; HV = hepatic vein; PV = portal vein.

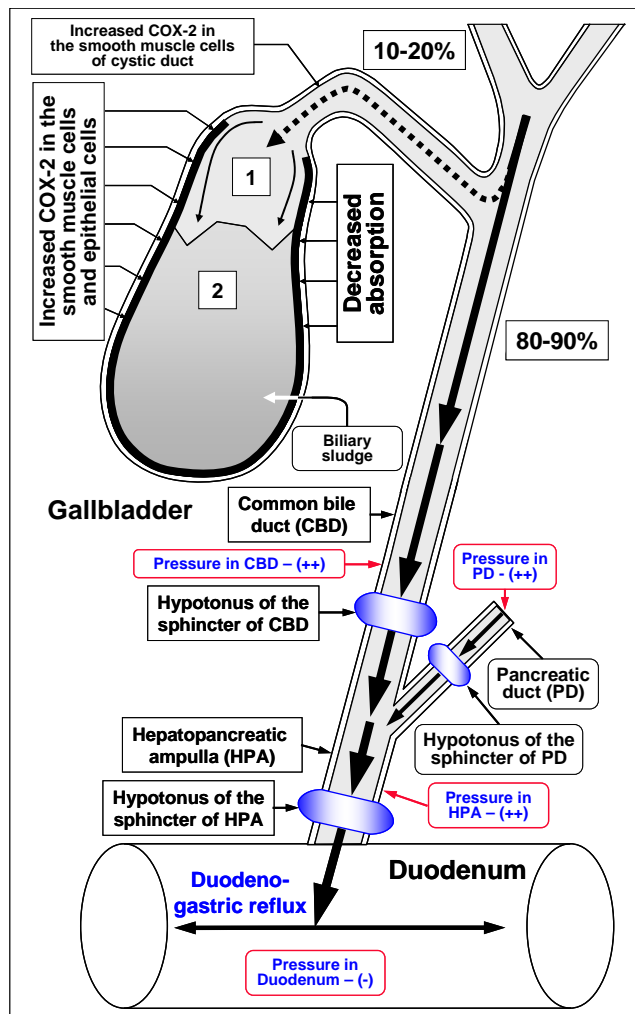


Fig. 41a. Passive passage of hepatic bile into the gallbladder and passive passage of hepatic bile and pancreatic juice into the duodenum lumen **in patients with chronic acalculous cholecystitis with biliary sludge, sphincter of Oddi hypomotility and duodenogastric reflux (chronic bile reflux gastritis)**. 1 = unconcentrated hepatic bile; 2 = low concentrated GB.

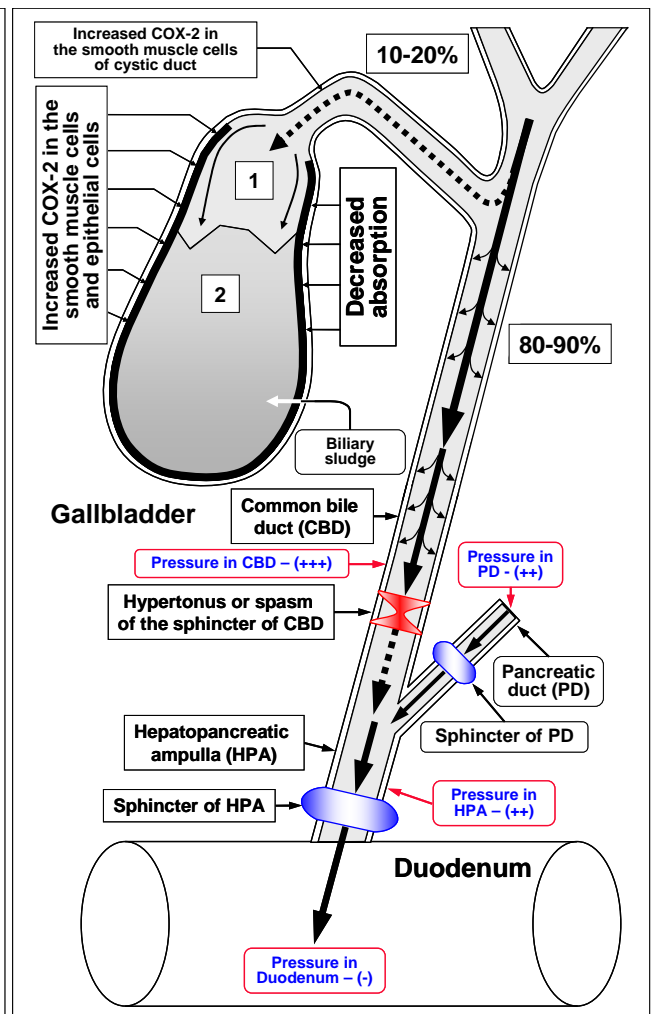


Fig. 41b. Passive passage of hepatic bile into the gallbladder and passive passage of hepatic bile and pancreatic juice into the duodenum lumen **in patients with chronic acalculous cholecystitis with biliary sludge and biliary type III of sphincter of Oddi dysfunction (chronic spastic aseptic cholecystitis)**. 1 = unconcentrated hepatic bile; 2 = low concentrated gallbladder bile.

Celecoxib is a selective inhibitor of COX-2. Inhibiting COX-2 activity in the smooth muscle cells of the gallbladder wall and cystic duct it brings relief of the biliary pain within 3-5 days, restoration of the evacuation function of the gallbladder and the gallbladder-dependent output of the biliary cholesterol, "active" and "passive" passage of the hepatic bile into the gallbladder, and decrease in the gallbladder-independent enterohepatic circulation of bile acids, biliary cholesterol and biliary bilirubin.

Celecoxib, a selective inhibitor of COX-2, inhibiting COX-2 activity in the epithelial cells of the gallbladder mucosa causes inhibition in glycoprotein mucin hypersecretion into the gallbladder lumen, decrease in concentration of glycoprotein biliary mucin in gallbladder bile and gallbladder bile viscosity, which prevents formation of biliary sludge.

Low COX-2 activity in the epithelial cells of the gallbladder mucosa helps in restoration of the absorption function of the gallbladder (absorption of water and biliary cholesterol), which results in increase in concentration of total bile acids and decrease in concentration of biliary cholesterol in gallbladder bile.

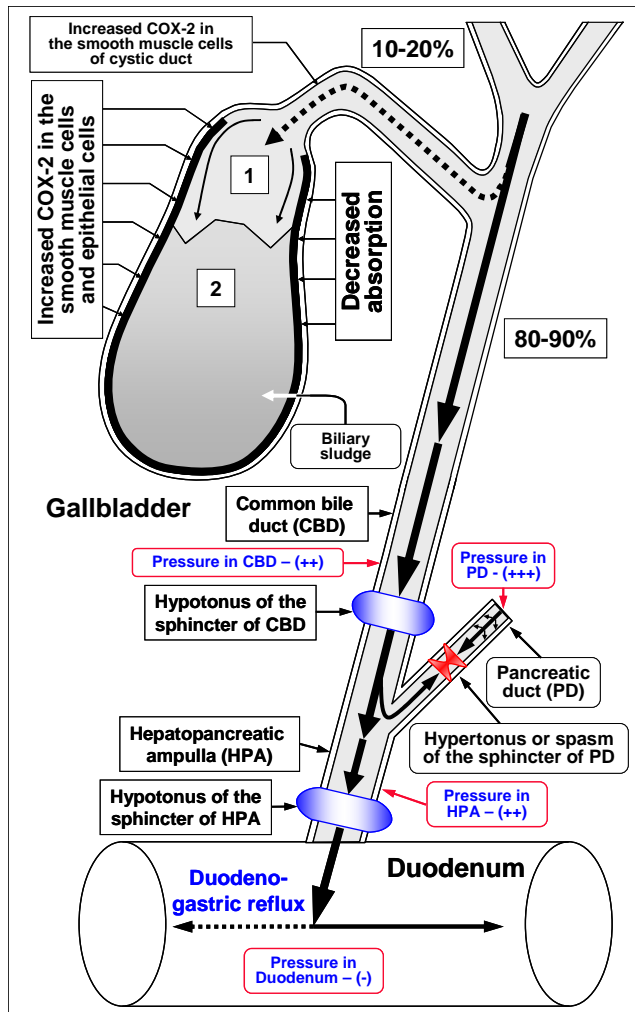


Fig. 41c. Passive passage of hepatic bile into the gallbladder and passive passage of hepatic bile and pancreatic juice into the duodenum lumen **in patients with chronic acalculous cholecystitis with biliary sludge and pancreatic type III of sphincter of Oddi dysfunction (chronic spastic aseptic pancreatitis)**. 1 = unconcentrated hepatic bile; 2 = low concentrated GB.

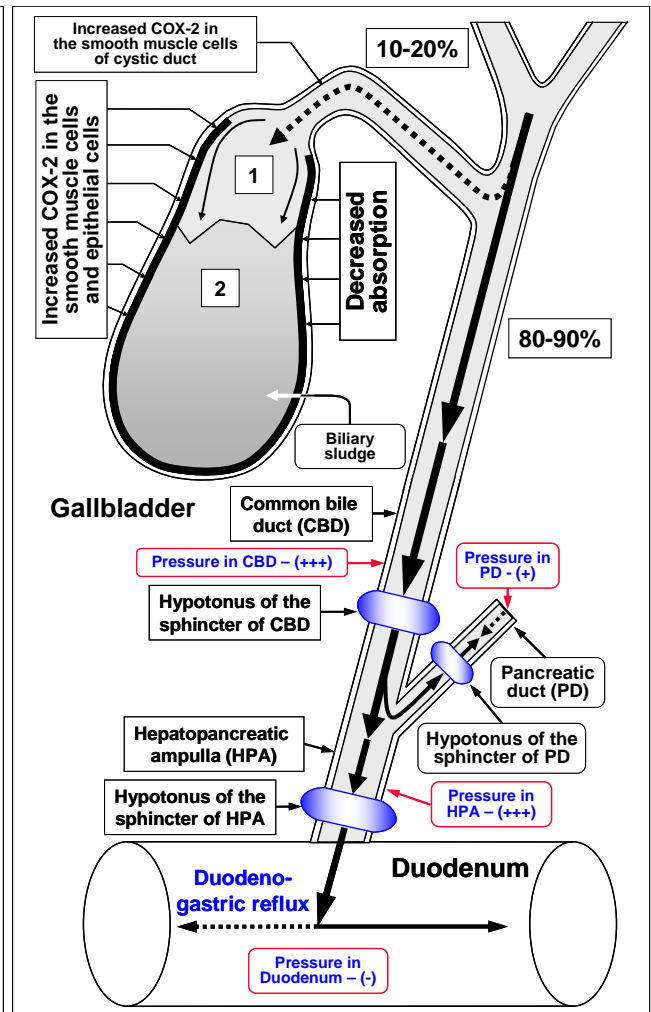


Fig. 41d. Passive passage of hepatic bile into the gallbladder and passive passage of hepatic bile and pancreatic juice into the duodenum lumen **in patients with chronic acalculous cholecystitis with biliary sludge, sphincter of Oddi hypomotility and biliopancreatic reflux (chronic biliary pancreatitis)**. 1 = unconcentrated hepatic bile; 2 = low concentrated gallbladder bile.

Ursodeoxycholic acid (UDCA) is a hydrophilic hepatoprotective bile acid. It helps in dissolving the cholesterol monohydrate crystals in the gallbladder, decrease in lithogenicity of gallbladder and hepatic bile, disappearance of the chronic "bland" intrahepatic cholestasis (i.e. results in restoration of the accumulation and excretion functions of liver).

Celecoxib and ursodeoxycholic acid (UDCA), blocking main pathogenetic mechanisms of gallstones formation, contribute to elimination of biliary sludge in 100% of cases, and lower the repeated risk of biliary sludge formation, and, respectively, reduce risk of gallstone formation in the gallbladder (1-66).

Celecoxib is a selective inhibitor of COX-2. Inhibiting COX-2 activity in the smooth muscle cells of the biliary tract and the sphincter of Oddi it brings relief of the biliary pain within 3-5 days, restoration of the **passage of the hepatic bile into the duodenum**.

Celecoxib is a selective inhibitor of COX-2, inhibiting COX-2 activity in the epithelial cells of the biliary tract mucosa causes decrease in secretion of glycoprotein mucin into the biliary tract lumen, concentration of the glycoprotein biliary mucin in the hepatic bile and viscosity of hepatic bile, which prevents formation of biliary sludge and gallstones in the common hepatic duct and common bile duct. Low COX-2 activity in the epithelial cells and the smooth muscle cells of the biliary tract helps in lowering **the risk of choledocholithiasis development**.

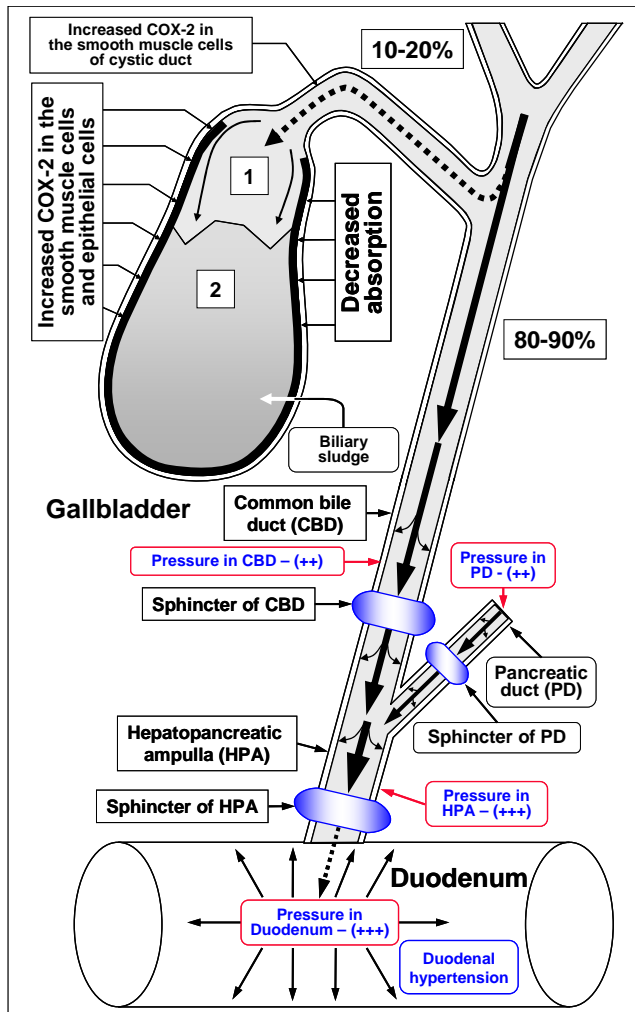


Fig. 41e. Passive passage of hepatic bile and pancreatic juice into the duodenum lumen **in patients with chronic acalculous cholecystitis with biliary sludge and small intestinal bacterial overgrowth syndrome (duodenal hypertension – the increase of intraluminal pressure in the duodenum)**. 1 = uncon hepatic bile; 2 = low concentrated gallbladder bile.

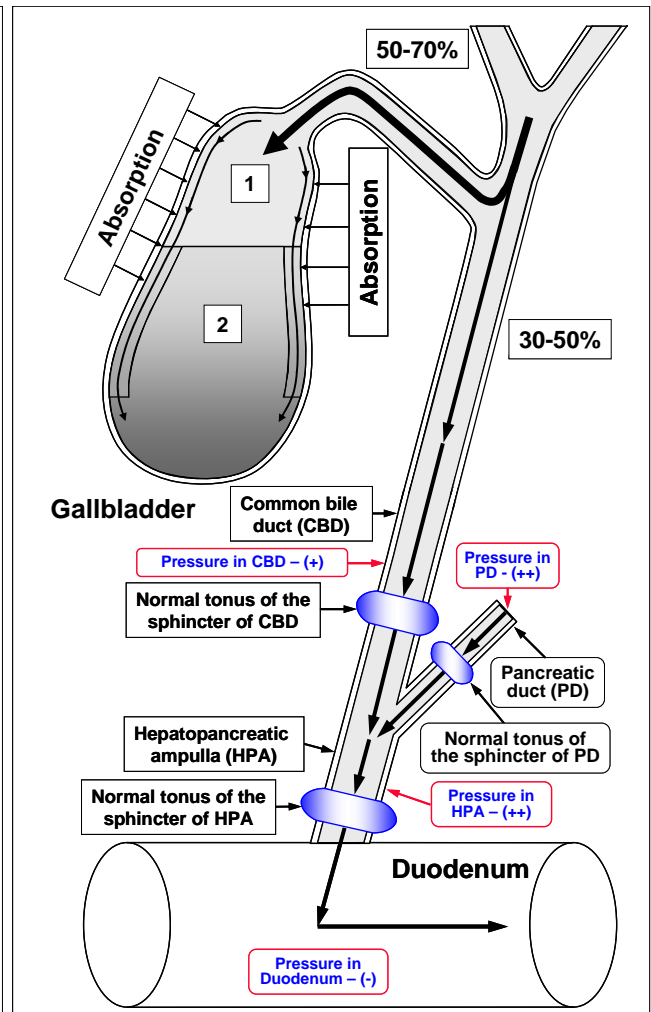


Fig. 41f. Passive passage of hepatic bile into the gallbladder and passive passage of hepatic bile and pancreatic juice into the duodenum lumen **in patients with chronic acalculous cholecystitis with biliary sludge after treatment with Celecoxib and UDCA (normal motility of the sphincter of Oddi)**. 1 = uncon hepatic bile; 2 = normal concentrated GB.

Ursodeoxycholic acid (UDCA) is a hydrophilic hepatoprotective bile acid. It helps in dissolving the cholesterol monohydrate crystals in the biliary tract, decrease in lithogenicity of hepatic bile, disappearance of the chronic “bland” intrahepatic cholestasis (i.e. results in the restoration of the accumulation and excretion functions of liver), and in some patients helps in dissolving the biliary sludge in the biliary tract.

Ursodeoxycholic acid (UDCA) is a hydrophilic hepatoprotective bile acid, decreasing aggressive properties of bile, prevents development of **chronic atrophic antral gastritis (duodenogastric reflux and bile reflux gastritis)** and **duodeno-gastroesophageal reflux (incompetence of Oddi's sphincter)**, **chronic biliary pancreatitis (biliopancreatic reflux)** or **chronic spastic aseptic pancreatitis (pancreatic type III of sphincter of Oddi dysfunction)**.

Celecoxib and Ursodeoxycholic acid (UDCA), pathogenetically blocking main mechanisms of gallstone formation, help in prophylactics of gallstone formation in the biliary tract, and lower the risk of development of **choledocholithiasis and chronic biliary pancreatitis** (1-66).

Attention!!! Information for patients:

Before using this scheme of treatment please check the contraindications (below) and side effects of using pharmacological preparations of **Celecoxib** and **ursodeoxycholic acid**, and obtain your doctor's permission.

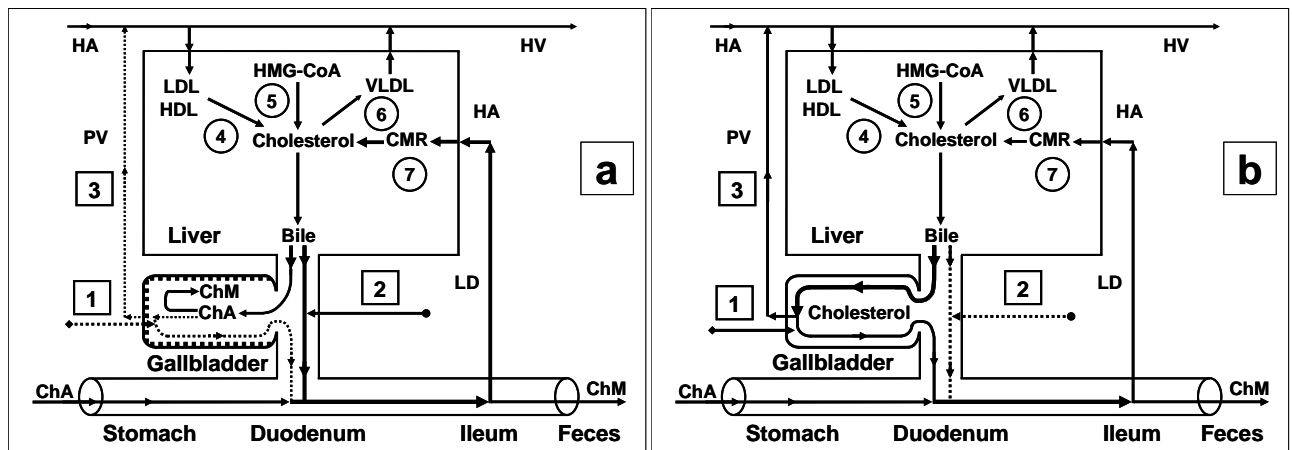


Fig. 43. Exchange of cholesterol in patients with chronic acalculous cholecystitis with biliary sludge before (a) and after (b) treatment with celecoxib and UDCA.

1 = gallbladder-dependent output of biliary cholesterol; **2** = gallbladder-independent output of biliary cholesterol; **3** = gallbladder-hepatic circulation of biliary cholesterol; **4** = hydrolysis of cholesterol esters entered the hepatocytes with HDL and LDL; **5** = synthesis of cholesterol; **6** = synthesis of cholesterol esters for VLDL; **7** = hydrolysis of cholesterol esters entered the hepatocytes with CMR.

ChA = cholesterol anhydrous; **ChM** = cholesterol monohydrate; **HA** = hepatic artery; **HV** = hepatic vein; **PV** = portal vein; **LD** = lymphatic duct.

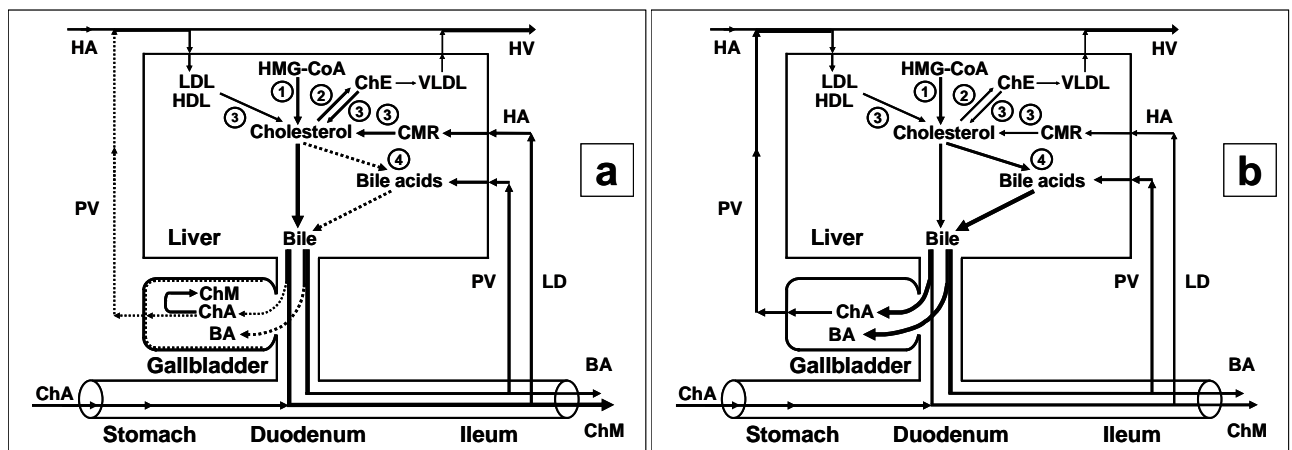


Fig. 44. Exchange of cholesterol and bile acids in patients with chronic acalculous cholecystitis with biliary sludge before (a) and after (b) treatment with celecoxib and UDCA.

1 = synthesis of cholesterol; **2** = synthesis of cholesterol esters for VLDL; **3** = hydrolysis of cholesterol esters entered the hepatocytes with HDL and LDL, and hydrolysis of cholesterol esters entered the hepatocytes with CMR; **4** = synthesis of bile acids.

ChE = cholesterol esters; **ChA** = cholesterol anhydrous; **ChM** = cholesterol monohydrate; **BA** = bile acids; **HA** = hepatic artery; **HV** = hepatic vein; **PV** = portal vein; **LD** = lymphatic duct.

Contraindications for Celecoxib:

- allergic reactions (nettle-rash, bronchial spasm) to acetylsalicylic acid or other NSAIDs (in anamnesis);
- 3rd trimester of pregnancy;
- high sensitivity to sulphonamides;
- high sensitivity to any component of the preparation.

Contraindications for ursodeoxycholic acid (UDCA):

- high sensitivity to the preparation;
- acute inflammatory diseases of the gallbladder and the bile ducts;
- ulcerative colitis;
- Crone's disease.

This web page does not bear any legal responsibility for usage of the treatment schemes, given here, without consulting your doctor.

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