Functional disorders in the sphincter of Oddi and possibly reflux associated diseases in the hepato-biliary-cholecysto-pancreatico-duodeno-gastro-esophageal region

Functional disorders in the sphincter of Oddi	Possibly reflux associated diseases
Type of reflux or dysfunction	Target organ – Gallbladder
Pancreaticobiliary reflux (pancreatic juice)	Chronic (enzymatic) cholecystitis. Chronic calculous cholecystitis. Intestinal metaplasia. Dysplasia. Gallbladder cancer.
Biliary type III of sphincter of Oddi dysfunction (spasm of sphincter of common bile duct)	Chronic (spastic aseptic) cholecystitis. Cholesterol gallstone disease. Chronic calculous cholecystitis. Metaplasia.
Duodenal-biliary reflux (duodenal juice) (± *Salmonella enterica* serovar Typhi)	Chronic (infectious) cholecystitis. Mixed or Pigment (brown) gallstone disease. Chronic calculous cholecystitis. Metaplasia.
Duodenal-biliary (acidic) reflux (duodenal juice and gastric juice) (± *Helicobacter pylori*)	Chronic (infectious) cholecystitis. Mixed or Pigment (brown) gallstone disease. Chronic calculous cholecystitis. Gastric metaplasia.
Type of reflux or dysfunction	Target organ – Pancreas
Biliopancreatic reflux (lithogenic bile)	Chronic biliary pancreatitis. Biliary metaplasia. Dysplasia. Pancreatic cancer.
Pancreatic type III of sphincter of Oddi dysfunction (spasm of sphincter of pancreatic duct)	Chronic (spastic aseptic) pancreatitis.
Duodenal-pancreatic alcohol reflux (duodenal juice and gastric juice and alcohol)	Chronic (alcoholic infectious) pancreatitis.
Duodenal-pancreatic reflux (duodenal juice) (± *Salmonella enterica* serovar Typhi)	Chronic (infectious) pancreatitis.
Duodenal-pancreatic (acidic) reflux (duodenal juice and gastric juice) (± *Helicobacter pylori*)	Chronic (acidic) pancreatitis. Metaplasia. Dysplasia. Pancreatic cancer.
Type of reflux or dysfunction	Target organ – Duodenum – Stomach – Esophagus
Duodenogastric reflux (duodenal juice)	Bile reflux gastritis. Atrophic antral gastritis. Intestinal metaplasia.
Duodenogastroesophageal reflux (duodenal juice and gastric juice)	Bile reflux gastritis. Gastroesophageal reflux disease. Chronic esophagitis. Gastric metaplasia. Dysplasia. Esophageal cancer.
Small intestinal bacterial overgrowth syndrome (duodenum) (duodenal hypertension)	Gallstone disease. Chronic calculous cholecystitis. Chronic pancreatitis.

Absorption function of a gallbladder, a functional status of the sphincter of Oddi, an anatomic configuration of hepatopancreatic ampulla of the sphincter of Oddi (Y-type, V-type or U-type) define development and prevalence of the certain type of pathology in each concrete patient with biliary diseases and pancreatic diseases.

Inactivation of chronic aseptic inflammation – Selective or nonselective COX-2 inhibitors.
Inactivation of spasm – Selective or nonselective spasmolytics.
Inactivation of *Helicobacter pylori* – Antibacterial drugs (Eradication).
Inactivation of *Salmonella enterica* serovar Typhi – Antibacterial drugs (Eradication).
Inactivation of lithogenic bile and toxic secondary hydrophobic bile acids – Ursodeoxycholic acid.
Inactivation of pancreatic juice – Pancreatic enzymes (?) and/or Ursodeoxycholic acid (?).
Inactivation of gastric juice (HCl) – Proton pump inhibitor (PPI) agents. Selective prokinetics.

Web-site: http://www.drturumin.com
E-mail: drjacobturumin@yahoo.com

1. **Selective COX-2 inhibitors** (celecoxib, nimesulide, etc.): celecoxib – 100 mg or 200 mg * 2 times per day during 5-7 days;
2. **Nonselective COX-2 inhibitors** (ibuprofen, diclofenac sodium, indomethacin, naproxen sodium, ketoprofen, flurbiprofen, etc.): ibuprofen – 200 mg or 300 mg or 400 mg * 3 times per day during 5-7 days;
3. **Selective spasmolytics** (pinaverium bromide, mebeverine hydrochloride, hymecromone, hyoscine butylbromide, etc.): hymecromone – 200 mg or 400 mg or 600 mg * 3 times per day during 5-7 days;
4. **Nonselective spasmolytics** (drotaverine hydrochloride, papaverine hydrochloride, fenpiverinium, etc.): drotaverine hydrochloride – 40 mg or 60 mg or 80 mg * 3 times per day during 5-7 days;
5. **Antibacterial drugs** (ciprofloxacin, clarithromycin, amoxicillin, metronidazole, erythromycin, doxycycline, co-trimoxazole, etc.): ciprofloxacin – 500 mg * 2 times per day during 5 days;
6. **Ursodeoxycholic acid:** ursodeoxycholic acid – 750 mg * 1 time before going to bed – 14-30-45 days.
7. **Pancreatic enzymes** (mezym forte, panzynorm forte, pancreoflat, festal, kreon, etc.): kreon 10000 – 1 capsule or 2 capsules * 2-4 times per day during meal during 7-14-30 days;
8. **Proton pump inhibitor (PPI) agents** (esomeprazole, lansoprazole, omeprazole, pantoprazole, rabeprazole, dexlansoprazole): rabeprazole – 20 mg * once daily – during 4-8 weeks.
9. **Selective prokinetics** (domperidone, cizapride, metoclopramide, etc.): domperidone – 10 mg * 3-4 times per day before meal and at bedtime during 14 days.

The universal algorithm of the pathogenetic treatment of symptomatic (with biliary pain) biliary diseases with concomitant functional disorders in the sphincter of Oddi:

1) selective COX-2 inhibitors (celecoxib or nimesulide, etc.):
celecoxib – 100 mg or 200 mg * 2 times per day during 5-7 days,
+
2) selective spasmolytics (hymecromone or mebeverine hydrochloride or hyoscine butylbromide or pinaverium bromide, etc.):
hymecromone – 200 mg or 400 mg or 600 mg * 3 times per day during 5-7 days;
+
3) antibacterial drugs (ciprofloxacin [for eradication of *Salmonella enterica ser. Typhi*]) or clarithromycin + amoxicillin or metronidazole [for eradication of *Helicobacter pylori*], etc.):
ciprofloxacin – 500 mg * 2 times per day during 5 days,

4) after 5 days of treatment (1+2+3):
ursodeoxycholic acid – 750 mg 1 time before going to bed – 30-45 days.

Абсорбционная функция желчного пузыря, функциональное состояние сфинктера Одди и анатомические особенности гепатопанкреатической ампулы (тип Y или тип V или тип U) сфинктера Одди определяют развитие и преобладание определенного типа патологии у каждого конкретного больного с заболеваниями желчевыводящих путей и/или поджелудочной железы.

Этот универсальный алгоритм позволяет впервые подобрать и предложить индивидуальный подход патогенетического лечения для каждого конкретного больного с заболеваниями желчевыводящих путей.

Патогенетическая коррекция метаболических и морфо-функциональных нарушений в желчном пузыре, печени и в желчевыводящих путях, в поджелудочной железе и в двенадцатиперстной кишке:

- у больных дисфункцией желчного пузыря позволяет снизить риск возникновения хронического некалькулезного холецистита без билиарного сладжа;
- у больных хроническим некалькулезным холециститом без билиарного сладжа позволит снизить риск возникновения хронического некалькулезного холецистита с билиарным сладжем;
- у больных хроническим некалькулезным холециститом с билиарным сладжем позволяет снизить риск образования желчных камней в желчном пузыре и возникновения хронического калькулезного холецистита;
- у больных хроническим калькулезным холециститом позволяет снизить риск возникновения острого калькулезного холецистита;
- у больных с постхолецистэктомическим синдромом или состоянием после перенесенной холецистэктомии позволяет снизить риск развития холедохолитиаза;

- ♦ у больных с синдромом избыточного бактериального роста (дуоденальная гипертензия), гипертонусом сфинктера гепатопанкреатической ампулы и панкреато-билиарным рефлюксом панкреатического сока в желчный пузырь позволяет снизить риск возникновения хронического некалькулезного (ферментативного) холецистита, хронического калькулезного холецистита и рака желчного пузыря;
- ♦ у больных с гипертонусом сфинктера общего желчного протока позволяет снизить риск возникновения III билиарного типа дисфункции сфинктера Одди, возникновения хронического некалькулезного (спастического асептического) холецистита и хронического калькулезного холецистита;
- ♦ у больных с синдромом избыточного бактериального роста (дуоденальная гипертензия), недостаточностью сфинктера гепатопанкреатической ампулы и дуодено-билиарным рефлюксом дуоденального сока позволяет снизить риск возникновения хронического холангита, хронического некалькулезного (инфекционного) холецистита и хронического калькулезного холецистита, пиг-

ментной желчнокаменной болезни;

- у больных с билиопанкреатическим рефлюксом литогенной желчи позволяет снизить риск возникновения хронического билиарного (желчного) панкреатита и рака поджелудочной железы;
- у больных с гипертонусом сфинктера панкреатического протока позволяет снизить риск возникновения III панкреатического типа дисфункции сфинктера Одди и возникновения хронического (спастического асептического) панкреатита;
- у больных с синдромом избыточного бактериального роста (дуоденальная гипертензия), недостаточностью сфинктера гепатопанкреатической ампулы и дуодено-панкреатическим рефлюксом дуоденального сока и/или дуоденального содержимого позволяет снизить риск возникновения хронического алкогольного («инфекционного») панкреатита, хронического («инфекционного») панкреатита и хронического («кислотного») панкреатита;

- у больных с дуоденогастральным рефлюксом дуоденального сока (смесь дуоденальной желчи и панкреатического сока) позволяет снизить риск возникновения желчного гастрита или атрофического гастрита антрального отдела желудка;
- у больных с дуоденогастроэзофагеальным рефлюксом дуоденального и желудочного сока (смесь дуоденальной желчи, панкреатического сока и желудочного сока) позволяет снизить риск возникновения желчного гастрита и желчного эзофагита.

Впервые предложенный данный патогенетически обоснованный метод лечения заболеваний желчевыводящих путей и поджелудочной железы позволяет:

- эффективно купировать болевой и диспепсический синдром в течение 1-3 дней;
- блокировать интенсивность хронического асептического воспаления в стенке желчного пузыря в течение 7-10 дней;
- способствовать полной дезагрегации и элиминации билиарного сладжа в течение 10-14 дней;
- восстанавливать накопительно-выделительную функцию печени в течение 10-14 дней;
- восстанавливать абсорбционную, концентрационную и эвакуаторную функции желчного пузыря в течение 10-14 дней;
- способствовать увеличению продолжительности ремиссии до 2-4 лет.

Таким образом, использование впервые предложенного универсального алгоритма лечения позволяет остановить рост заболеваемости желчевыводящих путей и поджелудочной железы, и уменьшить количество больных дисфункцией желчного пузыря, хроническим некалькулезным холециститом без билиарного сладжа, хроническим некалькулезным холециститом с билиарным сладжем, хроническим калькулезным холециститом и острым калькулезным холециститом, хроническим некалькулезным (ферментативным) холециститом, III билиарным типом дисфункции сфинктера Одди – хроническим некалькулезным (спастическим асептическим) холециститом, хроническим некалькулезным (инфекционным) холециститом, хроническим билиарным (желчным) панкреатитом, III панкреатическим типом дисфункции сфинктера Одди – хроническим (спастическим асептическим) панкреатитом, хроническим алкогольным («инфекционным») панкреатитом, хроническим («инфекционным») панкреатитом, хроническим («кислотным») панкреатитом, хроническим дуоденостазом (синдромом избыточного бактериального роста) и атрофическим гастритом антрального отдела желудка на 30-40%, и улучшить качество жизни больных после перенесенной холецистэктомии и уменьшить количество больных холедохолитиазом.

Функциональные расстройства в сфинктере Одди и их лечение

1. **Левин МД,** Мендельсон Г, Коршун З. Сфинктер Одди и его роль в патогенезе заболеваний желчно-панкреатической зоны. *Новости хирургии.* 2011; **19(6):** 139-145.
2. **Быстровская ЕВ.** Постхолецистэктомический синдром: патогенетические и терапевтические аспекты проблемы. *Медицинский совет.* 2012; **2:** 83-87.
3. **Ильченко АА.** Билиарный панкреатит. *Русский медицинский журнал.* 2012; **20(15):** 803-807.
4. **Ильченко АА.** Ферментативный холецистит. *Экспериментальная и клиническая гастроэнтерология.* 2009; **7:** 70-73.
5. **Селивёрстов П,** Скворцова Т, Тетерина Л, Чихачёва Е, Ситкин С, Радченко В. Функциональные расстройства билиарного тракта и их лечение. *Врач.* 2012; **3:** 9.
6. **Губергриц НБ,** Лукашевич ГМ. Сфинктер Одди – «наполеон» желчных и панкреатических протоков и его «мундир» – фатеров сосок. *Справочник поликлинического врача.* 2009; **9:** 52-61.
7. **Быстровская ЕВ,** Ильченко АА. Отдаленные результаты холецистэктомии. *Экспериментальная и клиническая гастроэнтерология.* 2008; **5:** 23-27.
8. **Губергриц НБ,** Лукашевич ГМ, Загоренко ЮА. Сфинктер Одди – «наполеон» желчных и панкреатических протоков и его «мундир» – фатеров сосок (анатомия, физиология, роль в развитии заболеваний поджелудочной железы, медикаментозная коррекция дисфункции). *Частная гастроэнтерология.* 2006; **1 (27)**: 56-67.
9. **Ильченко АА.** Дисфункциональные расстройства билиарного тракта. *Consilium medicum: Приложение Гастроэнтерология.* 2002; **1:** 20-23.
10. **Григорьев ПЯ.** Рекомендации (протоколы) диагностики и лечения больных с заболеваниями органов пищеварения. *Практикующий врач сегодня. Серия Гастроэнтерология.* 2002; **1:** 3-34.
11. **Калинин АВ.** Функциональные расстройства билиарного тракта и их лечение. *Клинические перспективы гастроэнтерологии, гепатологии.* 2002; **3:** 25-34.
12. **Яковенко ЭП.** Дисфункция сфинктера Одди, связанная с холецистэктомией (диагностика, лечение). *Практикующий врач.* 2000; **17:** 26-30.

Pancreaticobiliary reflux – Biliopancreatic reflux – Choledocho-pancreatic reflux – Duodenal-biliary reflux – Duodenal-pancreatic reflux

1. **Beltrán MA.** Current knowledge on pancreaticobiliary reflux in normal pancreaticobiliary junction. *Int J Surg.* 2012; **10(4):** 190-193.
2. **Beltrán MA.** Pancreaticobiliary reflux in patients with a normal pancreaticobiliary junction: Pathologic implications. *World J Gastroenterol* 2011; **17(8):** 953-962.
3. **Beltrán MA**, Contreras MA, Cruces KS. Pancreaticobiliary reflux in patients with and without cholelithiasis: is it a normal phenomenon? *World J Surg*. 2010; **34(12):** 2915-2921.
4. **Kamisawa T**, Suyama M, Fujita N, Maguchi H, Hanada K, Ikeda S, Igarashi Y, Itoi T, Kida M, Honda G, Sai J, Horaguchi J, Takahashi K, Sasaki T, Takuma K, Itokawa F, Ando H, Takehara H; Committee of Diagnostic Criteria of The Japanese Study Group on Pancreaticobiliary. Pancreatobiliary reflux and the length of a common channel. *J Hepatobiliary Pancreat Sci.* 2010; **17(6):** 865-870.
5. **Kamisawa T**, Honda G, Kurata M, Tokura M, Tsuruta K. Pancreatobiliary disorders associated with pancreaticobiliary maljunction. *Dig Surg.* 2010; **27(2)**: 100-104.
6. **van Geenen EJ**, van der Peet DL, Bhagirath P, Mulder CJ, Bruno MJ. Etiology and diagnosis of acute biliary pancreatitis. *Nat Rev Gastroenterol Hepatol*. 2010; **7(9):** 495-502.
7. **Horiguchi S,** Kamisawa T. Major duodenal papilla and its normal anatomy. *Dig Surg.* 2010; **27(2):** 90-93.
8. **Kamisawa T,** Takuma K, Anjiki H, Egawa N, Kurata M, Honda G, Tsuruta K, Sasaki T. Pancreaticobiliary maljunction. *Clin Gastroenterol Hepatol.* 2009; **7(11 Suppl)**: S84-S88.
9. **Xian GZ**, Wu SD, Chen CC, Su Y. Western blotting in the diagnosis of duodenal-biliary and pancreaticobiliary refluxes in biliary diseases. *Hepatobiliary Pancreat Dis Int*. 2009; **8(6):** 608-613.
10. **Toouli J.** Sphincter of Oddi: Function, dysfunction, and its management. *J Gastroenterol Hepatol*. 2009; **24 Suppl 3**: S57-S62.
11. **Sakamoto H**, Mutoh H, Ido K, Satoh S, Kumagai M, Hayakawa H, Tamada K, Sugano K. Intestinal metaplasia in gallbladder correlates with high amylase levels in bile in patients with a morphologically normal pancreaticobiliary duct. *Hum Pathol.* 2009; **40(12):** 1762-1767.
12. **Wang GJ**, Gao CF, Wei D, Wang C, Ding SQ. Acute pancreatitis: etiology and common pathogenesis. *World J Gastroenterol*. 2009; **15(12):** 1427-1430.
13. **Siqin D,** Wang C, Zhou Z, Li Y. The key event of acute pancreatitis: pancreatic duct obstruction and bile reflux, not a single one can be omitted. *Med Hypotheses.* 2009; **72(5):** 589-591.
14. **Kamisawa T**, Kurata M, Honda G, Tsuruta K, Okamoto A. Biliopancreatic reflux – pathophysiology and clinical implications. *J Hepatobiliary Pancreat Surg*. 2009; **16(1):** 19-24.
15. **Kamisawa T**, Anjiki H, Egawa N, Kurata M, Honda G, Tsuruta K. Diagnosis and clinical implications of pancreatobiliary reflux. *World J Gastroenterol.* 2008; **14(43):** 6622-6626.
16. **Kamisawa T**, Tu Y, Egawa N, Tsuruta K, Okamoto A, Matsukawa M. Pancreas divisum in pancreaticobiliary maljunction. *Hepatogastroenterology.* 2008; **55(81):** 249-253.
17. **Horaguchi J,** Fujita N, Noda Y, Kobayashi G, Ito K, Takasawa O, Obana T, Endo T, Nakahara K, Ishida K, Yonechi M, Hirasawa D, Suzuki T, Sugawara T, Ohhira T, Onochi K, Harada Y. Amylase levels in bile in patients with a morphologically normal pancreaticobiliary ductal arrangement. *J Gastroenterol.* 2008; **43(4):** 305-311.
18. **Zhang ZH**, Wu SD, Wang B, Su Y, Jin JZ, Kong J, Wang HL. Sphincter of Oddi hypomotility and its relationship with duodenal-biliary reflux, plasma motilin and serum gastrin. *World J Gastroenterol.* 2008; **14(25):** 4077-4081.
19. **Beltrán MA,** Vracko J, Cumsille MA, Cruces KS, Almonacid J, Danilova T. Occult pancreaticobiliary reflux in gallbladder cancer and benign gallbladder diseases. **J Surg Oncol.** 2007; **96(1):** 26-31.
20. **Kamisawa T,** Tu Y, Nakajima H, Egawa N, Tsuruta K, Okamoto A, Matsukawa M. Acute pancreatitis and a long common channel. *Abdom Imaging.* 2007; **32(3):** 365-369.
21. **Wu SD,** Yu H, Wang HL, Su Y, Zhang ZH, Sun SL, Kong J, Tian Y, Tian Z, Wei Y, Jin HX, Jin JZ. The relationship between Oddi's sphincter and bile duct pigment gallstone. Zhonghua Wai Ke Za Zhi. 2007; **45(1):** 58-61. *Article in Chinese*
22. **Sai JK,** Suyama M, Kubokawa Y, Nobukawa B. Gallbladder carcinoma associated with pancreatobiliary reflux. *World J Gastroenterol.* 2006; **12(40):** 6527-6530.
23. **Kamisawa T,** Okamoto A. Biliopancreatic and pancreatobiliary refluxes in cases with and without pancreaticobiliary maljunction: diagnosis and clinical implications. *Digestion.* 2006; **73(4):** 228-236.
24. **Woods CM**, Mawe GM, Toouli J, Saccone GT. The sphincter of Oddi: understanding its control and function. *Neurogastroenterol Motil.* 2005; **17 Suppl 1**: 31-40.
25. **Sai JK,** Suyama M, Nobukawa B, Kubokawa Y, Yokomizo K, Sato N. Precancerous mucosal changes in the gallbladder of patients with occult pancreatobiliary reflux. *Gastrointest Endosc.* 2005; **61(2):** 264-268.
26. **Itoi T,** Tsuchida A, Itokawa F, Sofuni A, Kurihara T, Tsuchiya T, Moriyasu F, Kasuya K, Serizawa H. Histologic and genetic analysis of the gallbladder in patients with occult pancreatobiliary reflux. *Int J Mol Med.* 2005; **15(3):** 425-430.
27. **Spicák J.** Etiological factors of acute pancreatitis. *Vnitr Lek.* 2002; **48(9):** 829-841. *Article in Czech.*

Duodenogastric reflux – Duodenogastroesophageal reflux – Cholecystectomy

1. **Chen SL**, Ji JR, Xu P, Cao ZJ, Mo JZ, Fang JY, Xiao SD. Effect of domperidone therapy on nocturnal dyspeptic symptoms of functional dyspepsia patients. *World J Gastroenterol*. 2010; **16(5):** 613-617.
2. **Stefănescu G**, Bălan G, Stanciu C. The relationship between bile reflux and symptoms in patients with gallstones before and after cholecystectomy. *Rev Med Chir Soc Med Nat Iasi*. 2009; **113(3):** 698-703. (*in Romanian*)
3. **Kunsch S,** Neesse A, Huth J, Steinkamp M, Klaus J, Adler G, Gress TM, Ellenrieder V. Increased duodeno-gastro-esophageal reflux (DGER) in symptomatic GERD patients with a history of cholecystectomy. *Z Gastroenterol.* 2009; **47(8):** 744-748.
4. **Santarelli L,** Gabrielli M, Candelli M, Cremonini F, Nista EC, Cammarota G, Gasbarrini G, Gasbarrini A. Post-cholecystectomy alkaline reactive gastritis: a randomized trial comparing sucralfate versus rabeprazole or no treatment. *Eur J Gastroenterol Hepatol.* 2003; **15(9):** 97975-97979.
5. **Fountos A,** Chrysos E, Tsiaoussis J, Karkavitsas N, Zoras OJ, Katsamouris A, Xynos E. Duodenogastric reflux after biliary surgery: scintigraphic quantification and improvement with erythromycin. *ANZ J Surg*. 2003; **73(6):** 400-403.
6. **Nakamura M**, Haruma K, Kamada T, Mihara M, Yoshihara M, Imagawa M, Kajiyama G. Duodenogastric reflux is associated with antral metaplastic gastritis. *Gastrointest Endosc.* 2001; **53(1):** 53-59.
7. **Manifold DK,** Anggiansah A, Owen WJ. Effect of cholecystectomy on gastroesophageal and duodenogastric reflux. *Am J Gastroenterol.* 2000; **95(10):** 2746-2750.
8. **Castedal M,** Björnsson E, Gretarsdottir J, Fjälling M, Abrahamsson H. Scintigraphic assessment of interdigestive duodenogastric reflux in humans: distinguishing between duodenal and biliary reflux material. *Scand J Gastroenterol.* 2000; **35(6):** 590-598.

Duodenogastric reflux – Duodenogastroesophageal reflux
Ursodeoxycholic acid treatment of bile reflux gastritis

1. **Thao TD**, Ryu HC, Yoo SH, Rhee DK. Antibacterial and anti-atrophic effects of a highly soluble, acid stable UDCA formula in Helicobacter pylori-induced gastritis. *Biochem Pharmacol.* 2008; **75(11):** 2135-2146.
2. **Piepoli AL,** Caroppo R, Armentano R, Caruso ML, Guerra V, Maselli MA. Tauroursodeoxycholic acid reduces damaging effects of taurodeoxycholic acid on fundus gastric mucosa. *Arch Physiol Biochem*. 2002; **110(3):** 197-202.
3. **Ozkaya M**, Erten A, Sahin I, Engin B, Ciftci A, Cakal E, Caydere M, Demirbas B, Ustun H. The effect of ursodeoxycholic acid treatment on epidermal growth factor in patients with bile reflux gastritis. Turk *J Gastroenterol* 2002; **13(4):** 198-202.
4. **Scarpa PJ,** Cappell MS. Treatment with ursodeoxycholic acid of bile reflux gastritis after cholecystectomy. *J Clin Gastroenterol* 1991; **13:** 601-603.
5. **Pazzi P,** Scalia S, Stabellini G. Bile reflux gastritis in patients without prior gastric surgery: Therapeutic effects of ursodeoxycholic acid. *Cur Ther Res* 1989; **45:** 476-680.
6. **Rosman AS.** Efficacy of UDCA in treating bile reflux gastritis. *Gastroenterology.* 1987; **92(1):** 269-272.
7. **Pazzi P,** Stabellini G. Effect of UDCA on biliary dyspepsia in patients without gallstones. *Cur Their Res* 1985; **37:** 685-690.
8. **Stefaniwisky AB,** Tint GS. Ursodoxycholic acid treatment of bile reflux gastritis. *Gastroenterology* 1985; **89:** 1000-1004.

Ursodeoxycholic acid treatment of pancreatitis

1. **Venneman NG**, van Erpecum KJ. Gallstone disease: Primary and secondary prevention. *Best Pract Res Clin Gastroenterol.* 2006; **20(6):** 1063-1073.
2. **Venneman NG,** vanBerge-Henegouwen GP, van Erpecum KJ. Pharmacological manipulation of biliary water and lipids: potential consequences for prevention of acute biliary pancreatitis. *Curr Drug Targets Immune Endocr Metabol Disord.* 2005; **5(2):** 193-198.
3. **Saraswat VA,** Sharma BC, Agarwal DK, Kumar R, Negi TS, Tandon RK. Biliary microlithiasis in patients with idiopathic acute pancreatitis and unexplained biliary pain: response to therapy. *J Gastroenterol Hepatol.* 2004; **19(10):** 1206-1211.
4. **Fischer S,** Müller I, Zündt BZ, Jüngst C, Meyer G, Jüngst D. Ursodeoxycholic acid decreases viscosity and sedimentable fractions of gallbladder bile in patients with cholesterol gallstones. *Eur J Gastroenterol Hepatol.* 2004; **16(3):** 305-311.
5. **Tsubakio K,** Kiriyama K, Matsushima N, Taniguchi M, Shizusawa T, Katoh T, Manabe N, Yabu M, Kanayama Y, Himeno S. Autoimmune pancreatitis successfully treated with ursodeoxycholic acid. *Intern Med.* 2002; **41(12):** 1142-1146.
6. **Testoni PA,** Caporuscio S, Bagnolo F, Lella F. Idiopathic recurrent pancreatitis: long-term results after ERCP, endoscopic sphincterotomy, or ursodeoxycholic acid treatment. *Am J Gastroenterol.* 2000; **95(7):** 1702-7.

Pancreatobiliary reflux – Intestinal metaplasia in gallbladder. Gallbladder cancer.

Biliopancreatic reflux – Pancreatic cancer (papillary, tubular or cystic adenocarcinoma). Intraductal papillary carcinoma. Intraductal tubular carcinoma.

1. **Kamisawa T,** Honda G, Kurata M, Tokura M, Tsuruta K. Pancreatobiliary disorders associated with pancreaticobiliary maljunction. *Dig Surg*. 2010; **27(2):** 100-4.
2. **Kamisawa T,** Takuma K, Anjiki H, Egawa N, Kurata M, Honda G, Tsuruta K, Sasaki T. Pancreaticobiliary maljunction. *Clin Gastroenterol Hepatol.* 2009**; 7(11 Suppl):** S84-S88.
3. **Sakamoto H**, Mutoh H, Ido K, Satoh S, Kumagai M, Hayakawa H, Tamada K, Sugano K. Intestinal metaplasia in gallbladder correlates with high amylase levels in bile in patients with a morphologically normal pancreaticobiliary duct. *Hum Pathol.* 2009; **40(12):** 1762-1767.
4. **Kasuya K,** Nagakawa Y, Matsudo T, Ozawa T, Tsuchida A, Aoki T, Itoi T, Itokawa F. p53 gene mutation and p53 protein overexpression in a patient with simultaneous double cancer of the gallbladder and bile duct associated with pancreaticobiliary maljunction. *J Hepatobiliary Pancreat Surg.* 2009; **16(3):** 376-381.
5. **Siqin D,** Wang C, Zhou Z, Li Y. The key event of acute pancreatitis: pancreatic duct obstruction and bile reflux, not a single one can be omitted. *Med Hypotheses.* 2009; **72(5):** 589-591.
6. **Funabiki T**, Matsubara T, Miyakawa S, Ishihara S. Pancreaticobiliary maljunction and carcinogenesis to biliary and pancreatic malignancy. *Langenbecks Arch Surg.* 2009; **394(1):** 159-169.
7. **Wang GJ,** Gao CF, Wei D, Wang C, Ding SQ. Acute pancreatitis: etiology and common pathogenesis. **World J Gastroenterol.** 2009; **15(12):** 1427-1430.
8. **Kamisawa T,** Anjiki H, Egawa N, Kurata M, Honda G, Tsuruta K. Diagnosis and clinical implications of pancreatobiliary reflux. *World J Gastroenterol*. 2008; **14(43):** 6622-6626.
9. **Kamisawa T,** Tu Y, Egawa N, Tsuruta K, Okamoto A, Matsukawa M. Pancreas divisum in pancreaticobiliary maljunction. *Hepatogastroenterology.* 2008; **55(81):** 249-253.
10. **Horaguchi J,** Fujita N, Noda Y, Kobayashi G, Ito K, Takasawa O, Obana T, Endo T, Nakahara K, Ishida K, Yonechi M, Hirasawa D, Suzuki T, Sugawara T, Ohhira T, Onochi K, Harada Y. Amylase levels in bile in patients with a morphologically normal pancreaticobiliary ductal arrangement. *J Gastroenterol.* 2008; **43(4):** 305-311.
11. **Inagaki M,** Goto J, Suzuki S, Ishizaki A, Tanno S, Kohgo Y, Tokusashi Y, Miyokawa N, Kasai S. Gallbladder carcinoma associated with occult pancreatobiliary reflux in the absence of pancreaticobiliary maljunction. *J Hepatobiliary Pancreat Surg.* 2007; **14(5):** 529-533.
12. **Kamisawa T,** Okamoto A. Biliopancreatic and pancreatobiliary refluxes in cases with and without pancreaticobiliary maljunction: diagnosis and clinical implications. *Digestion.* 2006; **73(4):** 228-236.
13. **Sai JK,** Suyama M, Kubokawa Y, Nobukawa B. Gallbladder carcinoma associated with pancreatobiliary reflux. *World J Gastroenterol*. 2006; **12(40):** 6527-6530.
14. **Adachi T,** Tajima Y, Kuroki T, Mishima T, Kitasato A, Fukuda K, Tsutsumi R, Kanematsu T. Bile-reflux into the pancreatic ducts is associated with the development of intraductal papillary carcinoma in hamsters. *J Surg Res.* 2006; **136(1):** 106-111.
15. **Itoi T,** Tsuchida A, Itokawa F, Sofuni A, Kurihara T, Tsuchiya T, Moriyasu F, Kasuya K, Serizawa H. Histologic and genetic analysis of the gallbladder in patients with occult pancreatobiliary reflux. *Int J Mol Med.* 2005; **15(3):** 425-430.
16. **Sai JK,** Suyama M, Nobukawa B, Kubokawa Y, Sato N. Severe dysplasia of the gallbladder associated with occult pancreatobiliary reflux. *J Gastroenterol.* 2005; **40(7):** 756-760.
17. **Sai JK,** Suyama M, Nobukawa B, Kubokawa Y, Yokomizo K, Sato N. Precancerous mucosal changes in the gallbladder of patients with occult pancreatobiliary reflux. *Gastrointest Endosc.* 2005; **61(2):** 264-268.
18. **Sano T,** Kamiya J, Nagino M, Uesaka K, Oda K, Kanai M, Nimura Y. Bile duct carcinoma arising in metaplastic biliary epithelium of the intestinal type: a case report. *Hepatogastroenterology.* 2003; **50(54):** 1883-1885.
19. **Matsumoto Y,** Fujii H, Itakura J, Matsuda M, Yang Y, Nobukawa B, Suda K. Pancreaticobiliary maljunction: pathophysiological and clinical aspects and the impact on biliary carcinogenesis. *Langenbecks Arch Surg.* 2003; **88(2):**122-131.
20. **Spicák J.** Etiological factors of acute pancreatitis. *Vnitr Lek.* 2002; **48(9):** 829-841. Article in Czech
21. **Talamini G.** Duodenal acidity may increase the risk of pancreatic cancer in the course of chronic pancreatitis: an etiopathogenetic hypothesis. *JOP. J Pancreas (Online)*. 2005; **6(2):**122-127.
22. **Kawiorski W**, Herman RM, Legutko J. Pathogenesis and significance of gastroduodenal reflux. *Przegl Lek.* 2001; **58(1):** 38-44. *Article in Polish*
23. **Johansen C,** Chow WH, Jorgensen T, Mellemkjaer L, Engholm G, Olsen JH. Risk of colorectal cancer and other cancers in patients with gallstones. *Gut* 1996; **39(3):** 439-443.
24. **Chow WH,** Johansen C, Gridley G, Mellemkjair L, Olsen JH, Fraumeni JF. Gallstones, cholecystectomy and risk of cancers of the liver, biliary tract and pancreas. *Br J Cancer* 1999; **79(3-4):** 640-644.
25. **Jung B,** Vogt T, Mathieudaude F, Welsh J, McCelland M, Trenkle T, Weitzel C, Kullmann F. Estrogen-responsive RING finger mRNA induction in gastrointestinal carcinoma cells following bile acid treat-

ment. *Carcinogenesis* 1998; **19(11):** 1901-1906.
26. **Delgiorno KE,** Hall JC, Takeuchi KK, Pan FC, Halbrook CJ, Washington MK, Olive KP, Spence J, Sipos B, Wright CV, Wells JM, Crawford HC. Identification and manipulation of biliary metaplasia in pancreatic tumors. *Gastroenterology*. 2013;
27. **Letelier P,** Brebi P, Tapia O, Roa JC. DNA promoter methylation as a diagnostic and therapeutic biomarker in gallbladder cancer. *Clin Epigenetics.* 2012; **4(1):** 1-11.
28. **Qu K,** Liu SN, Chang HL, Liu C, Xu XS, Wang RT, Zhou L, Tian F, Wei JC, Tai MH, Meng FD. Gallbladder cancer: a subtype of biliary tract cancer which is a current challenge in China. *Asian Pacific J Cancer Prev.* 2012; **13(4):** 1317-1320.
29. **Toledo C,** Matus CE, Barraza X, Arroyo P, Ehrenfeld P, Figueroa CD, Bhoola KD, del Pozo M, Poblete MT. Expression of HER2 and bradykinin B1 receptors in precursor lesions of gallbladder carcinoma. *World J Gastroenterol.* 2012; **18(11):** 1208-1215.
30. **Mazlum M,** Dilek FH, Yener AN, Tokyol C, Aktepe F, Dilek ON. Profile of gallbladder diseases diagnosed at Afyon Kocatepe University: a retrospective study. *Turkish J Path*. 2011; **27(1):** 23-30.
31. **Ono S,** Fumino S, Iwai N. Implications of intestinal metaplasia of the gallbladder in children with pancreaticobiliary maljunction. *Pediatr Surg Int.* 2011; **27(3):** 237-240.
32. **Khan MR,** Raza SA, Ahmad Z, Naeem S, Pervez S, Siddiqui AA, Ahmed M, Azami R. Gallbladder intestinal metaplasia in Pakistani patients with gallstones. *Int J Surg.* 2011; **9(6):** 482-485.
33. **Roa JC,** Tapia O, Cakir A, Basturk O, Dursun N, Akdemir D, Saka B, Losada H, Bagci P, Adsay NV. Squamous cell and adenosquamous carcinomas of the gallbladder: clinicopathological analysis of 34 cases identified in 606 carcinomas. *Modern Pathology.* 2011; **24(8):** 1069-1078.
34. **Lee SH**, Lee DS, You IY, Jeon WJ, Park SM, Youn SJ, Choi JW, Sung R. Histopathologic analysis of adenoma and adenoma-related lesions of the gallbladder. *Korean J Gastroenterol.* 2010; **55(2):** 119-126.
35. **Meirelles-Costa ALA,** Bresciani CJC, Perez RO, Bresciani BH, Siqueira SAC, Cecconello I. Are histological alterations observed in the gallbladder precancerous lesions? *Clinics.* 2010; **65(2):**143-150.
36. **Fernandes JE,** Franco MI, Suzuki RK, Tavares NM, Bromberg SH. Intestinal metaplasia in gallbladders: prevalence study. *Sao Paulo Med J.* 2008; **126(4):** 220-222.
37. **Stancu M,** Caruntu ID, Giusca S, Dobrescu G. Hyperplasia, metaplasia, dysplasia and neoplasia lesions in chronic cholecystitis – a morphologic study. *Rom J Morph Embry.* 2007; **48(4):** 335-342.
38. **Maesawa C,** Ogasawara S, Yashima-Abo A, Kimura T, Kotani K, Masuda S, Nagata Y, Iwaya T, Suzuki K, Oyake T, Akiyama Y, Kawamura H, Masuda T. Aberrant maspin expression in gallbladder epithelium is associated with intestinal metaplasia in patients with cholelithiasis. *J Clin Pathol.* 2006; **59(3):** 328-330.

Helicobacter pylori – Salmonella enterica serovar Typhi – Gallbladder cancer – Pancreatic cancer

1. **Risch HA,** Lu L, Wang J, Zhang W, Ni Q, Gao YT, Yu H. ABO blood group and risk of pancreatic cancer: a study in Shanghai and meta-analysis. *Am J Epidemiol.* 2013; **177(12):** 1326-1337.
2. **Zhou D,** Guan WB, Wang JD, Zhang Y, Gong W, Quan ZW. A comparative study of clinicopathological features between chronic cholecystitis patients with and without Helicobacter pylori Infection in gallbladder mucosa. *PLoS One.* 2013; **8(7):** e70265.
3. **Lee HK,** Kim H, Kim HK, Cho YS, Kim BW, Han SW, Maeng LS, Chae HS, Kim HN. The relationship between gastric juice nitrate/nitrite concentrations and gastric mucosal surface pH. *Yonsei Med J.* 2012; **53(6):**1154-1158.
4. **Risch HA.** Pancreatic cancer: Helicobacter pylori colonization, N-nitrosamine exposures, and ABO blood group. *Mol Carcinog.* 2012; **51(1):** 109-118.
5. **Gawin A,** Wex T, Ławniczak M, Malfertheiner P, Starzyńska T. Helicobacter pylori infection in pancreatic cancer. *Pol Merkur Lekarski.* 2012; **32(188):** 103-107. [Article in Polish]
6. **Trikudanathan G,** Philip A, Dasanu CA, Baker WL. Association between Helicobacter pylori infection and pancreatic cancer. A cumulative meta-analysis. *JOP*. 2011; **12(1):** 26-31.
7. **Nath G,** Gulati AK, Shukla VK. Role of bacteria in carcinogenesis, with special reference to carcinoma of the gallbladder. *World J. Gastroenterol.* 2010; **16(43):** 5395-5404.
8. **Tsuchida A,** Itoi T. Carcinogenesis and chemoprevention of biliary tract cancer in pancreaticobiliary maljunction. *World J Gastrointest Oncol.* 2010; **2(3):** 130-135.
9. **Karagin PH,** Stenram U, Wadström T, Ljungh Å. Helicobacter species and common gut bacterial DNA in gallbladder with cholecystitis. *World J Gastroenterol*. 2010; **16(38):** 4817-4822.
10. **Mishra RR,** Tewari M, Shukla HS. Helicobacter species and pathogenesis of gallbladder cancer. *Hepatobiliary Pancreat Dis Int.* 2010; **9(2):** 129-134.
11. **Tischler AD,** McKinney JD. Contrasting persistence strategies in Salmonella and Mycobacterium. *Curr Opin Microbiol.* 2010; **13(1):** 93-99.
12. **Chang AH,** Parsonnet J. Role of bacteria in oncogenesis. *Clinical Microbiology Reviews.* 2010; **23(4):** 837-857.
13. **Pandey M,** Mishra RR, Dixit R, Jaiswal R, Shukla M, Nath G. Helicobacter bilis in human gallbladder cancer: results of a case-control study and a meta-analysis. *Asian Pac J Cancer Prev.* 2010; **11(2):** 343-347.
14. **Kosaka T,** Tajima Y, Kuroki T, Mishima T, Adachi T, Tsuneoka N, Fukuda K, Kanematsu T. Helico-

bacter bilis colonization of the biliary system in patients with pancreaticobiliary maljunction. *Br J Surg.* 2010; **97(4):** 544-549.
15. **Bostanoğlu E,** Karahan ZC, Bostanoğlu A, Savaş B, Erden E, Kiyan M. Evaluation of the presence of Helicobacter species in the biliary system of Turkish patients with cholelithiasis. *Turk J Gastroenterol.* 2010; **21(4):** 421-427.
16. **Risch HA,** Yu H, Lu L, Kidd MS. ABO blood group, Helicobacter pylori seropositivity, and risk of pancreatic cancer: a case-control study. *J Natl Cancer Inst.* 2010; **102(7):** 502-505.
17. **Shimoyama T,** Takahashi R, Abe D, Mizuki I, Endo T, Fukuda S. Serological analysis of Helicobacter hepaticus infection in patients with biliary and pancreatic diseases. *J Gastroenterol Hepatol.* 2010; **25(Suppl 1):** S86-S89.
18. **Kucheriavyi IuA.** Chronic pancreatitis as acid-depended disease. *Eksp Klin Gastroenterol.* 2010; **9:** 107-115.
19. **Pandey M,** Shukla M. Helicobacter species are associated with possible increase in risk of hepatobiliary tract cancers. *Surg Oncol.* 2009; **18(1):** 51-56.
20. **Hamada T,** Yokota K, Ayada K, Hirai K, Kamada T, Haruma K, Chayama K, Oguma K. Detection of Helicobacter hepaticus in human bile samples of patients with biliary disease. *Helicobacter*. 2009; **14(6):** 545-551.
21. **Maurer KJ,** Carey MC, Fox JG. Roles of infection, inflammation, and the immune system in cholesterol gallstone formation. *Gastroenterology*. 2009; **136(2):** 425-440.
22. **Yucebilgili K,** Mehmetoğlu T, Gucin Z, Salih BA. Helicobacter pylori DNA in gallbladder tissue of patients with cholelithiasis and cholecystitis. *J Infect Dev Ctries.* 2009; **3(11):** 856-859.
23. **Hamada T,** Yokota K, Ayada K, Hirai K, Kamada T, Haruma K, Chayama K, Oguma K. Detection of Helicobacter hepaticus in human bile samples of patients with biliary disease. *Helicobacter*. 2009; **14(6):** 545-551.
24. **Elwood DR.** Cholecystitis. *Surg Clin North Am*. 2008; **88(6):** 1241-1252.
25. **Chen DF,** Hu L, Yi P, Liu WW, Fang DC, Cao H. Helicobacter pylori damages human gallbladder epithelial cells in vitro. *World J Gastroenterol*. 2008; **14(45):** 6924-6928.
26. **Abu Al-Soud W,** Stenram U, Ljungh A, Tranberg KG, Nilsson HO, Wadström T. DNA of Helicobacter spp. and common gut bacteria in primary liver carcinoma. *Dig Liver Dis.* 2008; **40(2):** 126-131.
27. **Abeysuriya V,** Deen KI, Wijesuriya T, Salgado SS. Microbiology of gallbladder bile in uncomplicated symptomatic cholelithiasis. *Hepatobiliary Pancreat Dis Int.* 2008; **7(6):** 633-637.
28. **Chen DF,** Hu L, Yi P, Liu WW, Fang DC, Cao H. H pylori exist in the gallbladder mucosa of patients with chronic cholecystitis. *World J Gastroenterol.* 2007; **13(10):** 1608-1611.
29. **Misra V,** Misra SP, Dwivedi M, Shouche Y, Dharne M, Singh PA. Helicobacter pylori in areas of gastric metaplasia in the gallbladder and isolation of H. pylori DNA from gallstones. *Pathology*. 2007; **39(4):** 419-424.
30. **Pandey M.** Helicobacter species are associated with possible increase in risk of biliary lithiasis and benign biliary diseases. *World J Surg Oncol.* 2007; **5(94):** 1-5.
31. **Bohr UR,** Kuester D, Meyer F, Wex T, Stillert M, Csepregi A, Lippert H, Roessner A, Malfertheiner P. Low prevalence of Helicobacter species in gallstone disease and gallbladder carcinoma in the German population. *Clin Microbiol Infect.* 2007; **13(5):** 525-531.
32. **Nilsson HO,** Stenram U, Ihse I, Wadstrom T. Helicobacter species ribosomal DNA in the pancreas, stomach and duodenum of pancreatic cancer patients. *World J Gastroenterol.* 2006; **12(19):** 3038-3043
33. **Maurer KJ,** Rogers AB, Ge Z, Wiese AJ, Carey MC, Fox JG. Helicobacter pylori and cholesterol gallstone formation in C57L/J mice: a prospective study. *Am J Physiol Gastrointest Liver Physiol.* 2006; **290(1):** G175-G182.
34. **Nilsson HO,** Pietroiusti A, Gabrielli M, Zocco MA, Gasbarrini G, Gasbarrini A. Helicobacter pylori and extragastric diseases – other Helicobacters. *Helicobacter.* 2005; **10(Suppl 1):** 54-65.
35. **Abayli B,** Colakoglu S, Serin M, Erdogan S, Isiksal YF, Tuncer I, Koksal F, Demiryurek H. Helicobacter pylori in the etiology of cholesterol gallstones. *J Clin Gastroenterol*. 2005; **39(2):** 134-137.
36. **Swidsinski A,** Schlien P, Pernthaler A, Gottschalk U, Bärlehner E, Decker G, Swidsinski S, Strassburg J, Loening-Baucke V, Hoffmann U, Seehofer D, Hale LP, Lochs H. Bacterial biofilm within diseased pancreatic and biliary tracts. *Gut.* 2005; **54(3):** 388-395.
37. **Maurer KJ,** Ihrig MM, Rogers AB, Ng V, Bouchard G, Leonard MR, Carey MC, Fox JG. Identification of cholelithogenic enterohepatic Helicobacter species and their role in murine cholesterol gallstone formation. *Gastroenterology*. 2005; **128(4):** 1023-1033.
38. **Murata H,** Tsuji S, Tsujii M, Fu HY, Tanimura H, Tsujimoto M, Matsuura N, Kawano S, Hori M. Helicobacter bilis infection in biliary tract cancer. *Aliment Pharmacol Ther*. 2004; **20(Suppl 1):** 90-94.
39. **Farshad Sh,** Alborzi A, Malek Hosseini SA, Oboodi B, Rasouli M, Japoni A, Nasiri J. Identification of Helicobacter pylori DNA in Iranian patients with gallstones. *Epidemiol Infect*. 2004; **132(6):** 1185-1189.
40. **Hazrah P,** Oahn KT, Tewari M, Pandey AK, Kumar K, Mohapatra TM, Shukla HS. The frequency of live bacteria in gallstones. *HPB (Oxford)*. 2004; **6(1):** 28-32.
41. **Lu Y,** Zhang BY, Shi JS, Wu LQ. Expression of the bacterial gene in gallbladder carcinoma tissue and bile. *Hepatobiliary Pancreat Dis Int.* 2004; **3(1):** 133-135.
42. **Silva CP,** Pereira-Lima JC, Oliveira AG, Guerra JB, Marques DL, Sarmanho L, Cabral MM, Queiroz DM. Association of the presence of Helicobacter in gallbladder tissue with cholelithiasis and cholecys-

titis. *J Clin Microbiol.* 2003; **41(12):** 5615-5618.
43. **Bulajic M,** Maisonneuve P, Schneider-Brachert W, Müller P, Reischl U, Stimec B, Lehn N, Lowenfels AB, Löhr M. Helicobacter pylori and the risk of benign and malignant biliary tract disease. *Cancer*. 2002; **95(9):** 1946-1953.
44. **Fukuda K,** Kuroki T, Tajima Y, Tsuneoka N, Kitajima T, Matsuzaki S, Furui J, Kanematsu T. Comparative analysis of Helicobacter DNAs and biliary pathology in patients with and without hepatobiliary cancer. *Carcinogenesis.* 2002; **23(11)**: 1927-1931.
45. **Fox JG.** The non-H pylori helicobacters: their expanding role in gastrointestinal and systemic diseases. *Gut*. 2002; **50(2):** 273-283.
46. **Matsukura N,** Yokomuro S, Yamada S, Tajiri T, Sundo T, Hadama T, Kamiya S, Naito Z, Fox JG. Association between Helicobacter bilis in bile and biliary tract malignancies: H. bilis in bile from Japanese and Thai patients with benign and malignant diseases in the biliary tract. *Jpn J Cancer Res*. 2002; **93(7):** 842-847.
47. **Monstein HJ,** Jonsson Y, Zdolsek J, Svanvik J. Identification of Helicobacter pylori DNA in human cholesterol gallstones. *Scand J Gastroenterol.* 2002; **37(1):** 112-119.
48. **Nilsson HO,** Mulchandani R, Tranberg KG, Stenram U, Wadström T. Helicobacter species identified in liver from patients with cholangiocarcinoma and hepatocellular carcinoma. *Gastroenterology.* 2001; **120(1):** 323-324.
49. **Harada K,** Ozaki S, Kono N, Tsuneyama K, Katayanagi K, Hiramatsu K, Nakanuma Y. Frequent molecular identification of Campylobacter but not Helicobacter genus in bile and biliary epithelium in hepatolithiasis. *J Pathol.* 2001; **193(2):** 218-223.
50. **Myung SJ,** Kim MH, Shim KN, Kim YS, Kim EO, Kim HJ, Park ET, Yoo KS, Lim BC, Seo DW, Lee SK, Min YI, Kim JY. Detection of Helicobacter pylori DNA in human biliary tree and its association with hepatolithiasis. *Dig Dis Sci.* 2000; **45(7):** 1405-1412.
51. **Fox JG,** Dewhirst FE, Shen Z, Feng Y, Taylor NS, Paster BJ, Ericson RL, Lau CN, Correa P, Araya JC, Roa I. Hepatic Helicobacter species identified in bile and gallbladder tissue from Chileans with chronic cholecystitis. *Gastroenterology*. 1998; **114(4):** 755-763.
52. **Kawaguchi M,** Saito T, Ohno H, Midorikawa S, Sanji T, Handa Y, Morita S, Yoshida H, Tsurui M, Misaka R, Hirota T, Saito M, Minami K. Bacteria closely resembling Helicobacter pylori detected immunohistologically and genetically in resected gallbladder mucosa. *J Gastroenterol.* 1996; **31(2):** 294-298.
53. **Gonzalez-Escobedo G,** Gunn JS. Identification of Salmonella enterica Serovar Typhimurium Genes Regulated during Biofilm Formation on Cholesterol Gallstone Surfaces. *Infect Immun.* 2013; **81(10):** 3770-3780.
54. **Gonzalez-Escobedo G,** Gunn JS. Gallbladder epithelium as a niche for chronic Salmonella carriage. *Infect Immun.* 2013; **81(8):** 2920-2930.
55. **Charles RC,** Sultana T, Alam MM, Yu Y, Wu-Freeman Y, Bufano MK, Rollins SM, Tsai L, Harris JB, Larocque RC, Leung DT, Brooks WA, Nga TV, Dongol S, Basnyat B, Calderwood SB, Farrar J, Khanam F, Gunn JS, Qadri F, Baker S, Ryan ET. Identification of Immunogenic Salmonella enterica Serotype Typhi Antigens Expressed in Chronic Biliary Carriers of S. Typhi in Kathmandu, Nepal. *PLoS Negl Trop Dis.* 2013; **7(8):** e2335.
56. **Safaeian M,** Gao YT, Sakoda LC, Quraishi SM, Rashid A, Wang BS, Chen J, Pruckler J, Mintz E, Hsing AW. Chronic typhoid infection and the risk of biliary tract cancer and stones in Shanghai, China. *Infect Agent Cancer.* 2011; **6(6):** 1-3.
57. **Gonzalez-Escobedo G**, Marshall JM, Gunn JS. Chronic and acute infection of the gallbladder by Salmonella Typhi: understanding the carrier state. *Nat Rev Microbiol.* 2011; **9(1):** 9-14.
58. **Ahmer BM**, Gunn JS. Interaction of Salmonella spp. with the Intestinal Microbiota. *Front Microbiol.* 2011; 2(101): .
59. **Gunn JS.** Salmonella host-pathogen interactions: a special topic. *Front Microbiol.* 2011; 2(191): 1-2.
60. **Knodler LA,** Vallance BA, Celli J, Winfree S, Hansen B, Montero M, Steele-Mortimer O. Dissemination of invasive Salmonella via bacterial-induced extrusion of mucosal epithelia. *Proc Natl Acad Sci USA*. 2010; **107(41):** 17733-17738.
61. **Crawford RW,** Rosales-Reyes R, Ramírez-Aguilar Mde L, Chapa-Azuela O, Alpuche-Aranda C, Gunn JS. Gallstones play a significant role in Salmonella spp. gallbladder colonization and carriage. *Proc Natl Acad Sci USA*. 2010; **107(9):** 4353-4358.
62. **Crawford RW,** Reeve KE, Gunn JS. Flagellated but not hyperfimbriated Salmonella enterica serovar Typhimurium attaches to and forms biofilms on cholesterol-coated surfaces. *J Bacteriol.* 2010; **192(12):** 2981-2990.
63. **Crawford RW,** Gibson DL, Kay WW, Gunn JS. Identification of a bile-induced exopolysaccharide required for Salmonella biofilm formation on gallstone surfaces. *Infect Immun.* 2008; **76(11):** 5341-5349.
64. **Prouty AM,** Gunn JS. Comparative analysis of Salmonella enterica serovar Typhimurium biofilm formation on gallstones and on glass. *Infect Immun.* 2003; **71(12):** 7154-7158.
65. **Prouty AM,** Schwesinger WH, Gunn JS. Biofilm formation and interaction with the surfaces of gallstones by Salmonella spp. *Infect Immun.* 2002; **70(5):** 2640-2649.
66. **Dutta U,** Garg PK, Kumar R, Tandon RK. Typhoid carriers among patients with gallstones are at increased risk for carcinoma of the gallbladder. *Am J Gastroenterol*. 2000; **95(3):** 784-787.

Acute and chronic biliary colic – Treatment of acute and chronic aseptic inflammation – Selective or nonselective COX-2 inhibitors

1. **Kumar A**, Deed JS, Bhasin B, Kumar A, Thomas S. Comparison of the effect of diclofenac with hyoscine-N-butylbromide in the symptomatic treatment of acute biliary colic. *ANZ J Surg* 2004; **74(7):** 573-576.
2. **Henderson SO,** Swadron S, Newton E. Comparison of intravenous ketorolac and meperidine in the treatment of biliary colic. *J Emerg Med* 2002; **23(3):** 237-241.
3. **Dula DJ,** Anderson R, Wood GC. A prospective study comparing i.m. ketorolac with i.m. meperidine in the treatment of acute biliary colic. *J Emerg Med* 2001; **20(2):** 121-124.
4. **Chaudhary A,** Gupta RL. Double blind, randomised, parallel, prospective, comparative, clinical evaluation of a combination of antispasmodic analgesic Diclofenac + Pitofenone + Fenpiverinium (Manyana vs Analgin + Pitofenone + Fenpiverinium (Baralgan) in biliary, ureteric and intestinal colic. *J Indian Med Assoc* 1999; **97(6):** 244-245.
5. **Golhar KB,** Gupta RL. Open labelled evaluation of injection Manyana (a combination of diclofenac + pitofenone + fenpiverinium) in ureteric, biliary and intestinal spasm – a preliminary report. *J Indian Med Assoc* 1999; **97(9):** 398-400.
6. **Al-Waili N,** Saloom KY. The analgesic effect of intravenous tenoxicam in symptomatic treatment of biliary colic: a comparison with hyoscine N-butylbromide. *Eur J Med Res* 1998; **3(10):** 475-479.
7. **Smucny JJ.** IM diclofenac for biliary colic. *J Fam Pract* 1997; **45(4):** 287-288.
8. **Akriviadis EA,** Hatzigavriel M, Kapnias D, Kirimlidis J, Markantas A, Garyfallos A. Treatment of biliary colic with diclofenac: a randomized, double-blind, placebo-controlled study. *Gastroenterology* 1997; **113(1):** 225-231.
9. **Schmieder G,** Stankov G, Zerle G, Schinzel S, Brune K. Observer-blind study with metamizole versus tramadol and butylscopolamine in acute biliary colic pain. *Arzneimittelforschung* 1993; **43(11):** 1216-1221.
10. **von Ritter C**, Niemeyer A, Lange V, Möhrle W, Richter WO, von Meyer L, Brandl H, del Pozo R, Jüngst D. Indomethacin decreases viscosity of gallbladder bile in patients with cholesterol gallstone disease. *Clin Invest* 1993; **71(11):** 928-932.
11. **Camp Herrero J,** Artigas Raventós V, Millá Santos J, Allende Honorato L, Domínguez Granados R, Moreno Carretero E. The efficacy of injectable flurbiprofen in the symptomatic treatment of biliary colic. *Med Clin (Barc)* 1992; **98(6):** 212-214.
12. **Anez MS,** Martínez D, Pacheco JL, González H, Rivera J, Pelaschier E, Uzcátegui L, Romero MD, Molina Z, Roditti de Montilla M. Indomethacin in the treatment of acute cholecystitis and biliary colic. *G E N* 1991; **45(1):** 32-37.
13. **Inoue T,** Mishima Y. The pathophysiological characteristics of bile from patients with gallstones: the role of prostaglandins and mucin in gallstone formation. *Jap J Surg* 1990; **20(1):** 10-18.
14. **Svanvik J,** Thornell E, Jivegard L. Treatment of biliary colic and acute cholecystitis with prostaglandin synthetase inhibitors. *Dig Dis Sci* 1990; **35(2):** 284.
15. **Goldman G,** Kahn PJ, Alon R, Wiznitzer T. Biliary colic treatment and acute cholecystitis prevention by prostaglandin inhibitor. *Dig Dis Sci* 1989; **34(6):** 809-811.
16. **Rossi PC,** Giudicelli N, Parenti G, Pacetti E. Sodium diclofenac in the treatment of biliary pain: a controlled study using hyoscine N-butylbromide. *Clin Ter* 1988; **126(6):** 405-410.
17. **Karachalios GN,** Tsimiklic S, Asimakis G, Helas G. Treatment of biliary colic with prostaglandin-synthetase inhibition: diclofenac sodium. *Singapore Med J* 1986; **27(3):** 207-209.
18. **Marsala F,** Cavrini P, Bufalino L, Gardini F. Treatment of acute pain of ureteral and biliary colic with naproxen sodium administered by the parenteral route. *Int J Clin Pharmacol Res* 1986; **6(6):** 495-500.
19. **Kaminski DL,** Deshpande Y, Thomas L, Qualy J, Blank W. Effect of oral ibuprofen on formation of prostaglandins E and F by human gallbladder muscle and mucosa. *Dig Dis Sci* 1985; **30(10):** 933-940.
20. **Magrini M,** Rivolta G, Movilia PG, Moretti MP, Liverta C, Bruni G. Successful treatment of biliary colic with intravenous ketoprofen or lysine acetylsalicylate. *Curr Med Res Opin* 1985; **9(7):** 454-460.
21. **Jönsson PE,** Erichsen C, Holmin T, Petersson BA. Double-blind evaluation of intravenous indomethacin and oxycone-papaverine in the treatment of acute biliary pain. *Acta Chir Scand* 1985; **151(6):** 561-564.
22. **Niinikoski J,** Nelimarkka O, Pekkola P. Intravenous indomethacin in biliary pain. A clinical investigation with metamizole as the control. *Ann Chir Gynaecol* 1984; **73(2):** 69-72.
23. **Broggini M,** Corbetta E, Grossi E, Borghi C. Diclofenac sodium in biliary colic: a double blind trial. *Br Med J (Clin Res Ed)*. 1984; **288(6423):** 1042.
24. **Matheson AJ**, Figgitt DP. Rofecoxib: a review of its use in the management of osteoarthritis, acute pain and rheumatoid arthritis. *Drugs.* 2001; **61(6)**: 833-865.
25. **Chen XW**, Cai JT. The impact of selective cycloxygenase-2 inhibitor celexibo on the formation of cholesterol gallstone. *Zhonghua Nei Ke Za Zhi.* 2003; **42(11)**: 797-799.
26. **Joshi GP**. Valdecoxib for the management of chronic and acute pain. *Expert Rev Neurother.* 2005; **5(1):** 11-24.
27. **Jayr C.** Analgesic effects of cyclooxygenase 2 inhibitors. *Bull Cancer*. 2004; **91 (Suppl 2):** S125-S131.
28. **Turumin JL**, Kozlova NM. The clinical aspects of the pathogenetic treatment of the patients with chronic acalculous cholecystitis. *Acta Gastroenterologica Belgica* 2007; **70 (Fasc. 1):** A34.
29. **Turumin JL,** Kozlova NM. Clinical effects of the pathogenetic treatment of patients with chronic acalculous cholecystitis. *Gut* 2007; **56(Suppl. 3):** 280 (G-449).
30. **Turumin JL,** Kozlova NM. The restoration of the functional and metabolic state of hepatobiliary system in the patients with chronic acalculous cholecystitis before and after pathogenetic treatment. *Acta Gastroenterologica Belgica* 2007; **70(Fasc. 1):** A32.
31. **Ilchenko IA,** Deliukina OV. Significance of biliary dysfunction in the pathogenesis of gallstone disease. *Eksp Klin Gastroenterol* 2011; **(7):** 70-8.

Ursodeoxycholic acid: liver and gallbladder, hepatic and gallbladder bile, etc

1. **Ikegami T**, Matsuzaki Y, Fukushima S, Shoda J, Olivier JL, Bouscarel B, Tanaka N. Suppressive effect of ursodeoxycholic acid on type IIA phospholipase A2 expression in HepG2 cells. *Hepatology*. 2005; **41(4)**: 896-905.
2. **Kano M**, Shoda J, Irimura T, Ueda T, Iwasaki R, Urasaki T, Kawauchi Y, Asano T, Matsuzaki Y, Tanaka N. Effects of long-term ursodeoxycholate administration on expression levels of secretory low-molecular-weight phospholipases A2 and mucin genes in gallbladders and biliary composition in patients with multiple cholesterol stones. *Hepatology*. 1998; **28(2)**: 302-313.
3. **Guarino MP**, Carotti S, Morini S, Perrone G, Behar J, Altomare A, Alloni R, Caviglia R, Emerenziani S, Rabitti C, Cicala M. Decreased number of activated macrophages in gallbladder muscle layer of cholesterol gallstone patients following ursodeoxycholic acid. *Gut*. 2008; **57(12)**: 1740-1741.
4. **Carotti S**, Guarino MP, Cicala M, Perrone G, Alloni R, Segreto F, Rabitti C, Morini S. Effect of ursodeoxycholic acid on inflammatory infiltrate in gallbladder muscle of cholesterol gallstone patients. *Neurogastroenterol Motil*. 2010; **22(8):** 866-873.
5. **Mizuno S**, Tazuma S, Kajiyama G. Stabilization of biliary lipid particles by ursodeoxycholic acid. Prolonged nucleation time in human gallbladder bile. *Dig Dis Sci*. 1993; **38(4)**: 684-693.
6. **Tazuma S**, Sasaki H, Mizuno S, Sagawa H, Hashiba S, Horiuchi I, Kajiyama G. Effect of ursodeoxycholic acid administration on nucleation time in human gallbladder bile. *Gastroenterology*. 1989; **97(1)**: 173-178.
7. **Jüngst C**, Sreejayan N, Zündt B, Müller I, Spelsberg FW, Hüttl TP, Kullak-Ublick GA, del Pozo R, Jüngst D, von Ritter C. Ursodeoxycholic acid reduces lipid peroxidation and mucin secretagogue activity in gallbladder bile of patients with cholesterol gallstones. *Eur J Clin Invest*. 2008; **38(9)**: 634-639.
8. **Fischer S**, Müller I, Zündt BZ, Jüngst C, Meyer G, Jüngst D. Ursodeoxycholic acid decreases viscosity and sedimentable fractions of gallbladder bile in patients with cholesterol gallstones. *Eur J Gastroenterol Hepatol.* 2004; **16(3)**: 305-311.
9. **Sauter GH**, Thiessen K, Parhofer KG, Jüngst C, Fischer S, Jüngst D. Effects of ursodeoxycholic acid on synthesis of cholesterol and bile acids in healthy subjects. *Digestion*. 2004; **70(2)**: 79-83.
10. **Fahey DA**, Carey MC, Donovan JM. Bile acid/phosphatidylcholine interactions in mixed monomolecular layers: differences in condensation effects but not interfacial orientation between hydrophobic and hydrophilic bile acid species. *Biochemistry*. 1995; **34(34)**: 10886-10897.
11. **Guarino MP**, Carotti S, Sarzano M, Alloni R, Vanni M, Grosso M, Sironi G, Maffettone PL, Cicala M. Short-term ursodeoxycholic acid treatment improves gallbladder bile turnover in gallstone patients: a randomized trial. *Neurogastroenterol Motil.* 2005; **17(5):** 680-686.
12. **Guarino MP**, Cong P, Cicala M, Alloni R, Carotti S, Behar J. Ursodeoxycholic acid improves muscle contractility and inflammation in symptomatic gallbladders with cholesterol gallstones. *Gut*. 2007; **56(6)**: 815-820.
13. **Mas MR**, Comert B, Mas N, Yamanel L, Ozotuk H, Tasci I, Jazrawi RP. Effects of long term hydrophilic bile acid therapy on in vitro contraction of gallbladder muscle strips in patients with cholesterol gallstones. *World J Gastroenterol.* 2007; **13(32)**: 4336-4339.
14. **Colecchia A**, Mazzella G, Sandri L, Azzaroli F, Magliuolo M, Simoni P, Bacchi-Reggiani ML, Roda E, Festi D. Ursodeoxycholic acid improves gastrointestinal motility defects in gallstone patients. *World J Gastroenterol.* 2006; **12(33)**: 5336-5343.
15. **Xiao ZL,** Biancani P, Carey MC, Behar J. Hydrophilic but not hydrophobic bile acids prevent gallbladder muscle dysfunction in acute cholecystitis. *Hepatology*. 2003; **37(6)**: 1442-1450.
16. **van de Heijning BJ**, van de Meeberg PC, Portincasa P, Doornewaard H, Hoebers FJ, van Erpecum KJ, Vanberge-Henegouwen GP. Effects of ursodeoxycholic acid therapy on in vitro gallbladder contractility in patients with cholesterol gallstones. *Dig Dis Sci*. 1999; **44(1)**: 190-196.
17. **Mendez-Sanchez N**, Brink MA, Paigen B, Carey MC. Ursodeoxycholic acid and cholesterol induce enterohepatic cycling of bilirubin in rodents. *Gastroenterology*. 1998; **115(3)**: 722-732.
18. **Beuers U**. Drug insight: Mechanisms and sites of action of ursodeoxycholic acid in cholestasis. *Nat Clin Pract Gastroenterol Hepatol*. 2006; **3(6)**: 318-328.
19. **Pemberton PW**, Aboutwerat A, Smith A, Warnes TW. Ursodeoxycholic acid in primary biliary cirrhosis improves glutathione status but fails to reduce lipid peroxidation. *Redox Rep*. 2006; **11(3)**: 117-123.
20. **Jeong HJ**, Kim CG. Pretreatment with ursodeoxycholic acid (UDCA) as a novel pharmacological intervention in hepatobiliary scintigraphy. *Yonsei Med J*. 2005; **46(3)**: 394-398.
21. **Lukivskaya OY**, Maskevich AA, Buko VU. Effect of ursodeoxycholic acid on prostaglandin metabolism and microsomal membranes in alcoholic fatty liver. *Alcohol.* 2001; **25(2)**: 99-105.
22. **Bouscarel B,** Ceryak S, Robins SJ, Fromm H. Studies on the mechanism of the ursodeoxycholic acid-induced increase in hepatic low-density lipoprotein binding. *Lipids*. 1995; **30(7)**: 607-617.
23. **Bomzon A,** Ljubuncic P. Ursodeoxycholic acid and in vitro vasoactivity of hydrophobic bile acids. *Dig Dis Sci.* 2001; **46(9)**: 2017-2024.
24. **Ljubuncic P**, Said O, Ehrlich Y, Meddings JB, Shaffer EA, Bomzon A. On the in vitro vasoactivity of bile acids. *Br J Pharmacol*. 2000; **131(3)**: 387-398.
25. **Sinisalo J**, Vanhanen H, Pajunen P, Vapaatalo H, Nieminen MS. Ursodeoxycholic acid and endothelial-dependent, nitric oxide-independent vasodilatation of forearm resistance arteries in patients with coronary heart disease. *Br J Clin Pharmacol.* 1999; **47(6)**: 661-665.
26. **Pak JM**, Adeagbo AS, Triggle CR, Shaffer EA, Lee SS. Mechanism of bile salt vasoactivity: dependence on calcium channels in vascular smooth muscle. *Br J Pharmacol*. 1994; **112(4)**: 1209-1215.
27. **Ohtake M**, Sandoh N, Sakaguchi T, Tsukada K, Hatakeyama K. Enhancement of portal blood flow by ursodeoxycholic acid in partially hepatectomized rats. *Surg Today*. 1996; **26(2)**: 142-144.
28. **Bomzon A**, Ljubuncic P. Bile acids as endogenous vasodilators? *Biochem Pharmacol*. 1995; **49(5)**: 581-589.
29. **Pak JM**, Lee SS. Vasoactive effects of bile salts in cirrhotic rats: in vivo and in vitro studies. *Hepatology*. 1993; **18(5)**: 1175-1181.

30. **Benedetti A**, Alvaro D, Bassotti C, Gigliozzi A, Ferretti G, La Rosa T, Di Sario A, Baiocchi L, Jezequel AM. Cytotoxicity of bile salts against biliary epithelium: a study in isolated bile ductule fragments and isolated perfused rat liver. *Hepatology*. 1997; **26(1)**: 9-21.
31. **Itoh S**, Kono M, Akimoto T. Psoriasis treated with ursodeoxycholic acid: three case reports. *Clin Exp Dermatol*. 2007; **32(4)**: 398-400.
32. **Günsar C**, Melek M, Karaca I, Sencan A, Mir E, Ortaç R, Canan O. The biochemical and histopathological effects of ursodeoxycholic acid and metronidazole on total parenteral nutrition-associated hepatic dysfunction: an experimental study. *Hepatogastroenterology*. 2002; **49(44)**: 497-500.
33. **Tomida S**, Abei M, Yamaguchi T, Matsuzaki Y, Shoda J, Tanaka N, Osuga T. Long-term ursodeoxycholic acid therapy is associated with reduced risk of biliary pain and acute cholecystitis in patients with gallbladder stones: a cohort analysis. *Hepatology*. 1999; **30(1)**: 6-13.
34. **Okoro N**, Patel A, Goldstein M, Narahari N, Cai Q. Ursodeoxycholic acid treatment for patients with postcholecystectomy pain and bile microlithiasis. *Gastrointest Endosc.* 2008; **68(1)**: 69-74.
35. **Guma C**, Viola L, Apestegui C, Pinchuk L, Groppa J, Michelini J, Martínez B, Bolaños R, Toselli L. Therapeutic efficacy of ursodeoxycholic acid in persistent gallbladder lithiasis and persistent biliary sludge: preliminary results of a multicenter experience. *Acta Gastroenterol Latinoam*. 1994; **24(4)**: 233-237.
36. **Ros E**, Navarro S, Bru C, Garcia-Pugés A, Valderrama R. Occult microlithiasis in «idiopathic» acute pancreatitis: prevention of relapses by cholecystectomy or ursodeoxycholic acid therapy. *Gastroenterology.* 1991; **101(6)**: 1701-1709.
37. **Testoni PA**, Caporuscio S, Bagnolo F, Lella F. Idiopathic recurrent pancreatitis: long-term results after ERCP, endoscopic sphincterotomy, or ursodeoxycholic acid treatment. *Am J Gastroenterol.* 2000; **95(7)**: 1702-1707.
38. **Borda F**, Oquiñena S, Borobio E, Vila J, Frauca A, Martínez B. Is pre-operative treatment with ursodeoxycholic acid useful in reducing relapses in acute biliary pancreatitis? *An Sist Sanit Navar*. 2003; **26(2)**: 225-229.
39. **Okazaki K**. Therapy for chronic pancreatitis and the prognosis. *Nihon Naika Gakkai Zasshi*. 2004; **93(1)**: 45-50.
40. **Saraswat VA**, Sharma BC, Agarwal DK, Kumar R, Negi TS, Tandon RK. Biliary microlithiasis in patients with idiopathic acute pancreatitis and unexplained biliary pain: response to therapy. *J Gastroenterol Hepatol*. 2004; **19(10)**: 1206-1211.
41. **Venneman NG**, van Berge-Henegouwen GP, van Erpecum KJ. Pharmacological manipulation of biliary water and lipids: potential consequences for prevention of acute biliary pancreatitis. *Curr Drug Targets Immune Endocr Metabol Disord.* 2005; **5(2)**: 193-198.
42. **Venneman NG**, van Erpecum KJ. Gallstone disease: Primary and secondary prevention. *Best Pract Res Clin Gastroenterol.* 2006; **20(6)**: 1063-1073.
43. **Tsubakio K**, Kiriyama K, Matsushima N, Taniguchi M, Shizusawa T, Katoh T, Manabe N, Yabu M, Kanayama Y, Himeno S. Autoimmune pancreatitis successfully treated with ursodeoxycholic acid. *Intern Med*. 2002; **41(12)**: 1142-1146.
44. **Okazaki K**. Ursodeoxycholic acid as an alternative therapy for autoimmune pancreatitis. *Intern Med*. 2002; **41(12)**: 1082-1083.
45. **Scarpa PJ**, Cappell MS. Treatment with ursodeoxycholic acid of bile reflux gastritis after cholecystectomy. *J Clin Gastroenterol* 1991; **13(5)**: 601-603.
46. **Realini S**, Reiner M, Frigerio G. Treatment of dyspeptic disorders, lithiasis and biliary dyskinesia with ursodeoxycholic acid. Analysis of a controlled multicenter study. *Schweiz Med Wochenschr*. 1980; **110(22)**: 879-880.
47. **Alvisi V**, Tralli M, Loponte A, D'Ambrosi A, Pavani F, Ruina M. Ursodeoxycholic acid in the treatment of dyspeptic-painful disorders of biliary origin: report of a controlled multicenter study. *Clin Ter*. 1982; **100(1)**: 21-33.
48. **Stefaniwsky AB**, Tint GS, Speck J, Shefer S, Salen G. Ursodoxycholic acid treatment of bile reflux gastritis. *Gastroenterology* 1985; **89(5)**: 1000-1004.
49. **Pazzi P**, Stabellini G. Effect of ursodeoxycholic acid (UDCA) on biliary dyspepsia in patients without gallstones. *Cur Their Res* 1985; **37**: 685-690.
50. **Rosman AS**. Efficacy of ursodeoxycholic acid (UDCA) in treating bile reflux gastritis. *Gastroenterology.* 1987; **92(1)**: 269-272.
51. **Scalia S,** Pazzi P, Stabellini G, Guarneri M. HPLC assay of conjugated bile acids in gastric juice during ursodeoxycholic acid (Deursil) therapy of bile reflux gastritis. J Pharm Biomed Anal. 1988; 6(6-8): 911-917.
52. **Pazzi P**, Scalia S, Stabellini G. Bile reflux gastritis in patients without prior gastric surgery: Therapeutic effects of ursodeoxycholic acid. *Cur Ther Res* 1989; **45**: 476-680.
53. **Scarpa PJ**, Cappell MS, Chen WY, Liao WC. Treatment with ursodeoxycholic acid of bile reflux gastritis after cholecystectomy. *J Clin Gastroenterol*. 1991; **13(5)**: 601-603.
54. **Mathai E**, Arora A, Cafferkey M, Keane CT, O'Morain C. The effect of bile acids on the growth and adherence of Helicobacter pylori. *Aliment Pharmacol Ther.* 1991; **5(6)**: 653-658.
55. **Piepoli AL**, Caroppo R, Armentano R, Caruso ML, Guerra V, Maselli MA. Tauroursodeoxycholic acid reduces damaging effects of taurodeoxycholic acid on fundus gastric mucosa. *Arch Physiol Biochem*. 2002; **110(3)**: 197-202.
56. **Ozkaya M**, Erten A, Sahin I, Engin B, Ciftçi A, Cakal E, Caydere M, Demirbaş B, Ustün H. The effect of ursodeoxycholic acid treatment on epidermal growth factor in patients with bile reflux gastritis. *Turk J Gastroenterol* 2002; **13(4)**: 198-202.
57. **Thao TD**, Ryu HC, Yoo SH, Rhee DK. Antibacterial and anti-atrophic effects of a highly soluble, acid stable ursodeoxycholic acid (UDCA) formula in Helicobacter pylori-induced gastritis. *Biochem Pharmacol*. 2008; **75(11)**: 2135-2146.