Main syndromes

1. **Pain syndrome (depends on the type of dyskinesia)**
   Localizes in the right subcostal region, in point of projection of the bottom of gall-bladder (the Makenzy point). It arises up after fat and fried food, in 3-5 hours later eating, irradiates into the right shoulder, under the right subscapularic region, in the region of heart (Botkyn’ symptom or cholecysto-cardial symptom)
   It can be the severe, sharp brief or dull aching, required emergency care
   Mechanism of pain appearance:
   - increase of internal pressure in the gall-bladder,
   - spasm of the gall-bladder muscles,
   - expansion walls of gall-bladder,
   - increasing pressure in extra- and intrahepatic and biliary channels (compression by the stones in the area of large duodenal papilla).

2. **Biliary dyspepsy** - bitter taste in the mouth at mornings, vomiting with bile without relief, intolerance of fat and fried food, regurgitation (belching) by air, nausea, heartburn.

3. **Intestinal dyspepsy** - related to the unstable selection of bile - alternation of diarrheas with constipations, flatulence, abdominal swelling.

4. **Syndrome of premenstrual tension at women** – biliary diskinesia symptoms appear last week before menses

5. **Astheno-neurotic (vegetative) syndrome** – bad mood, irritation, nervousness, weakness, fatigue

Data of physical examination
- Jaundice -yellowish skin and mucous, tracks from scratching due to skin itch (sign of intrahepatic holestasis, calculesis)
- Pigmentation in right subcostal region (tracks from a hot-water bottle)
- At general examination a gall-bladder is not determinated and can be visible at examination and palpation if patient has:
  1. gallstones
  2. gall-bladder cancer
  3. hydropsy of gall-bladder
  4. empiema (abscess) of gall-bladder
  5. cancer of pancreas head (the Kurvuasie’s symptom)

Provocative symptoms allow exposing pathology of gall-bladder
the Kerr’s sign (pain at deep palpation of gall-bladder bottom)
the Ortner’s sign (pain at percussion over the right costal arch
the Lepene-Vasylenko’s sign (pain at percussion on the front wall of stomach on the right parallel to the right costal arch)
the Mussy-Georgyevskiy’s sign (frenicus) - pain at deep palpation between the legs of right m.sternocleidomastoideus
the Merphy’s sign (pain and breaking (stop) of inspiration during deep palpation of projection point of the gall-bladder bottom)

Investigations:
Full blood analysis (leukocytosis, shift to the left at leukocytal formula, increasing ESR)
Duodenal intubation with bile examination (6-staging chromatic duodenal intubation)
- 6-staging chromatic duodenal intubation
1 stage is the basal secretion of bile (duration 20-25 minutes, amount 20-25 ml)
2 stage is the stage of hold-up of biliary excretion due to closed Oddi’s sphincter (duration 2-7 minutes, amount – 0 ml)
3 stage is the stage of closed Lyutkens’s and opened Oddi’s sphincter, excretion bile from bile duct (duration – 3-6 minutes, amount 3-6 ml is portion A)
4 stage is a cystic bile, excretion bile from gall bladder (duration 20-30 minutes, amount 30-60 ml is portion B)
5 stage is an intrahepatic bile, excretion bile from common hepatic duct, secreting during examination in liver (duration 20-25 minutes, amount 20-25 ml is portion C)
6 stage is a remaining cystic bile, final contraction of gall bladder in 2-2,5 hours of examination (duration – 10-15 minutes, amount 10-15 ml).

Ultrasound examination of the liver, bile ducts and gall bladder in a rest and after bile-expelling breakfast.
Radiologic investigation
- Plain abdominal X-ray examination (it is possible to see stone in a gall-bladder and bile ducts)
- Oral cholecystography - oral contrasting X-Ray examination (patient accepts the contrasting material in pills)
- IV cholecystography - infusion intravenous contrasting X-Ray examination (the contrasting material is entered intravenously)
- Retrograde duodenocholecystocholangiopancreatography (a contrast is entered through a catheter entered by fybrogastroduodenoscope)

CHRONIC CHOLECYSTITIS is the chronic inflammatory disease of gall-bladder related with functional disorders (dyskynesia and dyscholia)

DIAGNOSTICS
- Clinical symptoms (see upper)
- positive provocative symptoms of palpation (6 symptoms mentioned above)
Duodenal intubation - the change of time and amount of 4 stages of cystic bile (portion B) – in a norm: amount 40-70 ml, time of selection 20-30 minutes.
1. decline of specific gravity of bile (norm value– 1016 ±1)
2. change of pH of bile into sour reaction (norm value – 7,3 ± 0,1)
3. decline of maintenance of bile acids in a cystic bile
4. increase of concentration of cholesterol in a cystic bile (norm value 8,04 ± 0,72 mmol/l)
5. decline of cholato-cholesterol coefficient (norm value - 29 ± 2)
6. increase of concentration of bilirubin (norm value 3,8 ± 0,38 mmol/l)
7. increase of concentration of sialic acids (norm value 130 ± 12 units)
8. determination of the C-reactive protein (norm is negative)
9. (+) bacteriological culture of cystic bile (in a norm a bile is sterile)

Results of ultrasound examination:
1. increasing thickness of gall-bladder wall more than 4 mm (< 4 mm in a norm)
2. (+) sonografic Merphy’s sign
3. increasing gall-bladder sizes more than 5 sm is higher than upper boder of norm for this age
4. presence of shade from the gall-bladder walls
   presence of paravisceral echo-negative shade (exudate)

**Gall-Stone Disease or Cholelithiasis**

Risk factors is “sign of 5 “F” – Female, Forty age, Fertile, Fat (obesity) Fair (complexion)

**Reasons of development**
- infection
- stagnation of bile in a gall-bladder
- congenital anomalies
- features of food
- heredity
- adynamy, decreased physical activity

A main pathological sign is forming of stones in the gall bladder (calcium, cholesterol, bilirubin, mixed)

Stones can be silent (if they are located in a body and bottom of gall bladder) and active (if they are located in the bladder neck and ducts).

The clinical signs appear only if stones become active. A main symptom (syndrome) is a hepatic (biliary) colic.

**Symptoms and signs of biliary colic:**
- intensive increased pain in right subcostal region, with a tendency to distribution
- a reason of appearing - use of fat, fried food, alcohol, after physical exercise, jolting jorney
- the pain is appeared in 3-4 hours after eating (more frequent in a night-time)
- irradiation – upwards, in a right shoulder, in a right clavicula, in a right subscapular region, sometimes – in the region of heart (the Botkin’s symptom) lake as angina pectoris
- vomiting with bile does not relief patient’s condition
- fever, chill, trembling, anxiety,
- vegetative storm (diarrhea, constipation, swelling of stomach)
- Jaundice

**Investigation of gallstones:**
1. Ultrasonography reflects stones in the gall bladder with 96% accuracy.
2. Endoscopic retrograde cholangiopancreatography
3. Plain abdominal X-ray identify calcified but not cholesterol stones with 15% accuracy.
4. Oral cholecystography shows stones in the gallbladder and biliary duct obstruction.