

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

Medical Faculty

Department of Internal Medicine #2 with postgraduate training

APPROVED
Vice-rector for scientific and pedagogical work
Eduard BURIACHKIVSKYI
« » September 2024



METHODICAL GUIDE
for independent applicant's work (IAW) in educational discipline

International Faculty, V-th course

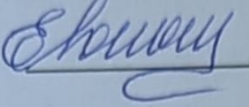
Educational discipline: **Internal Medicine**

Theme: **Basics of diagnostics, treatment and prophylaxis of main gastro-intestinal tract diseases**

Approved

At the meeting of the Department of Internal Medicine #2 with postgraduate training

Protocol № 1 dated «02» September 2024

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Methodical guide for ISW

Theme: Basics of diagnostics, treatment and prophylaxis of main gastro-intestinal tract diseases (Theme №№ 18-26), curation of the patient with grounding the diagnosis - 12 hours.

Goal: to prepare a specialist who is able to perform professional activities, applying the acquired knowledge, skills and abilities in general and professional training according to a certain list of symptoms, syndromes and emergencies in gastro-intestinal tract diseases that require special tactics of patient management, laboratory and instrumental investigation, medical manipulations for solving problems in the field of medicine, health care and further education.

Skills:

- analyze complaints, anamnesis and data of physical examination of a patient with gastro-intestinal tract diseases;
- explain the pathogenetic mechanisms of symptoms and syndromes in patients with gastro-intestinal tract diseases;
- classify the existing syndromes of the patient and their clinical significance;
- interpret the data of laboratory and instrumental investigation of a patient with gastro-intestinal tract diseases;
- offer a program of differential diagnosis and treatment program of a patient with gastro-intestinal tract diseases;
- draw ratio diagrams of syndromes revealed in the patient;
- conduct a medical history of a patient with gastro-intestinal tract disease.

Basic concepts:

1. Barrett's esophagus
2. Functional dyspepsia
3. Chronic gastritis: non-atrophic, atrophic (diffuse and multifocal)
4. Erosion, ulcers, peptic ulcer, gastric ulcer and duodenal
5. Celiac Disease
6. Irritable Bowel Syndrome
7. Ulcerative colitis. Crohn's disease
8. Toxic dilatation of the bowel
9. Bile sludge
10. Cholelithiasis, choledocholithiasis
11. Cytolysis syndrome, cholestasis syndrome
12. Syndrome of small and large liver failure
13. Portal hypertension. Ascites

Plan

I. Theoretical questions for the lesson:

1. The main syndromes of gastroenterological diseases
2. Examination methods in gastroenterology
3. GERD: erosive and non-erosive. Diagnostic Criteria
4. Functional dyspepsia. Chronic gastritis: clinical features of various types, laboratory values and instrumental methods of diagnosis. diagnostic Criteria
5. Peptic ulcer and other gastric and duodenal ulcers: clinical picture considering the localization of the ulcer. Complications of peptic ulcer disease
6. Celiac disease and other enteropathies. Methods of laboratory and instrumental diagnostics.
7. Nonspecific colitis (UC and Crohn's disease): clinical manifestations, endoscopic techniques and radiological diagnosis. Irritable bowel syndrome: diagnostic criteria
8. Gallstone disease: clinical presentation, radiographic and ultrasonic methods of diagnosis. Chronic cholecystitis: clinical manifestations, diagnostic criteria. Functional biliary disorders: clinical features and diagnostic criteria for different types of dysfunctions
9. Chronic hepatitis: clinical and laboratory syndromes, diagnostic differences etiological variants, activity and degree of fibrosis
10. Cirrhosis of the liver: clinical presentation, stage of disease, laboratory and instrumental diagnostics. Diagnosis of portal hypertension and other complications
11. Chronic pancreatitis: clinical features and diagnosis of various etiological forms, morphological and functional-pathogenetic options.

II. Content of theme**1. Learn how to interpret endoscopic study of the digestive tract (the topics № 20-28)**

Endoscopic examination is performed by an instrument having the form of a tube, and equipped with a camera and light source - an endoscope. Are distinguished esophagogastroduodenoscopy (EFGDS), which is the study of the upper gastrointestinal tract up to the duodenum, and colonoscopy - a study of the large intestine.

A. The clinical interpretation of the results of EFGDS (the topics № 20, 21, 22, 23, 27)**Diagnostic indications for EFGDS:**

- Dyspepsia, especially in patients over 45 years old
- Hematemesis or melena (establishing the source of bleeding in the upper gastrointestinal tract)
- Acute and chronic pain in the upper abdomen
- Chronic diarrhea (with a biopsy of the distal portions of the duodenum for the diagnosis of celiac disease)
- Unexplainable losing of body weight
- Anemia
- Clarification the localization of foreign bodies

Contraindications to of EFGDS:

Absolute:

- Esophageal disease, in which it is impossible to hold the endoscope
- Acute myocardial infarction with complications
- Stroke
- Acute heart failure
- Respiratory failure 3rd degree
- Shock
- Suspected perforation of organ
- Viral hepatitis and other acute viral conditions

Relative

- Pregnancy
- Glaucoma
- Acute upper respiratory tract infection
- Unstable Angina
- Thyrotoxicosis



Photo 1: gastric antrum pale pink color and the pylorus

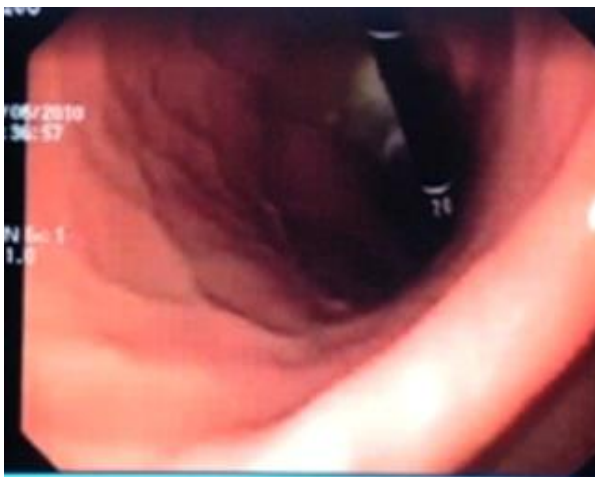


Photo 2: The so-called angle of the stomach. Visible part of the endoscope



Photo 3: Gastric Cardia

**Classification of gastroesophageal reflux disease (GERD) in endoscopic criteria
[By Savari – Miller with modification Tygat G.N.J. Et al.,1990]**

The degree of importance	Criterion
0	Esophageal mucosa without pathological changes. Gastroesophageal junction clearly expressed
I	Diffuse or focal erythematous esophagitis. Gastroesophageal junction smoothed
II	Erosive esophagitis (solitary or multiple surface defects mucosal folds usually linear, sometimes with exudate, occupying at least 10% of the mucosal surface of the distal segment of the esophagus within 5 cm area
III	Drain erosion covered with exudate or necrotic masses. Merging, erosion occupy more than 10% of the mucosal surface of the distal esophagus within 5 cm area, but do not cover it circularly
IV	Circularly located drain erosion and exudative-necrotic lesions beyond 5 cm zone, settling in the distal segment of the esophagus
V	Deep ulceration and erosion of the various departments of the esophagus. Stricture of the esophagus and deformation

There are 2 stages of GERD, characterize the erosiv-inflammatory process of the mucous membrane:

Step A - moderate hyperemia of the mucous membrane of the esophagus;
Step B - visible defects (erosion), coated with fibrin.

Fibroesofagogastroduodenoscopy criteria of chronic gastritis

For antral gastritis (type B) is characterized by the following symptoms: redness, swelling of the mucous membrane of the department, well-defined submucosal hemorrhages and erosion, hyperplasia folds, exudation, antral spasm.

Fundic gastritis is characterized by the following signs: pallor of the mucous membrane of the stomach body, thinning and smoothness in the body and antrum, spotty redness, increased wounds of mucosa.

Modern of EFGDS is not just limited to visual inspection of gastroduodenal mucosa. Under the proposed and adopted the mid-90s world of upper endoscopy protocols, each of EFGDS must be accompanied by a biopsy for several purposes: determining the presence of Hp infection by rapid urease test directly in the endoscopy room, as well as biopsies from different parts of the stomach for the morphological study of the mucous membrane.

Protocol of EFGDS #1

PREPROCEDURE DIAGNOSIS: Abdominal pain and anemia.

POSTPROCEDURE DIAGNOSES: (1) Duodenal ulcer. (2) Giant duodenal diverticulum. (3) Hiatal hernia and Schatzki ring.

PROCEDURE PERFORMED: Esophagogastroduodenoscopy with biopsy.

ENDOSCOPIST: Michael Jones, M.D.

ASSISTANT: Jane Doe, L.P.N.

REFERRING PHYSICIAN: George Washington, M.D.

ANESTHESIA: Demerol 25 mg IV push, Versed 3 mg IV push.

INSTRUMENT USED: GIF-160 video chip endoscope.

EXTENT OF EXAMINATION: Second portion of the duodenum.

DESCRIPTION OF PROCEDURE AND FINDINGS: Informed consent was obtained. The video gastroscope was introduced into the esophagus, stomach, and duodenum with the following findings:

1. The vocal cords and larynx were normal.
2. The esophagus was completely normal, except for a Schatzki ring at the bottom part at 37 cm.
3. Between 37 and 40 cm, a small-sized hiatal hernia is noted. Retroflexed view shows no other abnormality other than this hiatal hernia.
4. Stomach is completely normal.
5. Duodenal bulb is impressive for ulcer with good depth. This is a 1-cm sized, clean-based, benign-appearing ulcer. Biopsies were taken from the antrum for *Helicobacter pylori*.

6. Second portion of the duodenum around the papilla shows a giant diverticulum which is very thin-walled. Internal organs could be seen through this thin wall.

DIAGNOSTIC IMPRESSION: The patient's symptoms are probably from the duodenal ulcer. This may have been contributed to by the aspirin.

PLAN:

1. Hold aspirin, if possible.
2. Prevacid 30 mg every day.
3. Return to see me in about 2-3 weeks.
4. If *Helicobacter pylori* is positive, she will require treatment.

Protocol of EFGDS #2

PROCEDURE PERFORMED: Esophagogastroduodenoscopy with esophageal variceal banding.

PHYSICIAN: John Doe, MD

INDICATION: Hematemesis in the setting of alcohol abuse in a patient with known history of esophageal varices.

POSTOPERATIVE FINDINGS:

1. Grade 2 to 3 distal esophageal varices between 36 and 40 cm with weal sign, status post successful deployment of 3 esophageal bands.
2. Portal gastropathy.
3. Gastroesophageal junction at 40 cm from the incisors.

MEDICATIONS: Versed 10 mg IV, fentanyl 75 mcg IV.

IMMEDIATE COMPLICATIONS: None.

PROCEDURE IN DETAIL: Informed consent was obtained. The patient was explained the risks and benefits of this procedure, including but not limited to, bleeding, infection, perforation, need for surgery and cardiopulmonary complications. The patient indicated his understanding of the above and signed the consent form. The patient was deemed to be ASA class II and therefore a candidate for conscious sedation. The patient was placed in the left lateral decubitus position. Mouthpiece was inserted and secured. After occurrence of conscious sedation, endoscope was introduced in the mouth and passed under direct visualization without difficulty to the fourth portion of the duodenum. Endoscope was then slowly withdrawn and mucosal circumference was inspected. Examination of the duodenal mucosa and entire examined portions was unremarkable.

Examination of the gastric mucosa revealed erythema of the antrum. There was increase in area of gastric and some mucosal hemorrhages in the body and fundus of the stomach. On retroflexion, there was no evidence of gastric varices. The GE junction was at 40 cm from the incisors. Between 36 and 40 cm from the incisors, there were varices distally in the esophagus that were grade 2 to 3 with a weal mark noticed. There was no active bleeding. The remainder of the esophageal examination was unremarkable. The endoscope was withdrawn and then the esophageal banding

kit was done in the usual manner. The endoscope was then reintroduced in the mouth under direct visualization, advanced to the distal esophagus and 3 bands were successfully deployed. The patient tolerated the procedure well. There were no immediate complications.

RECOMMENDATIONS:

1. Start nadolol 40 mg daily, hold for systolic blood pressures less than 90.
2. Daily PPI treatment.
3. Stop alcohol.

Protocol of EFGDS #3

PATIENT NAME	PATIENT ID	DOB	AGE	SEX	EXAM DATE	PHYSICIAN	REFERRAL
Amy W Armstrong	AMYARM000	6/25/1968	47	F	01-05-2016	John W. Hart, M.D.	Keith Johnson, M.D.

INDICATION : Functional dyspepsia - K30
 Abnormal findings on diagnostic imaging of other parts of digestive tract - R93.3
 Dysphagia, although currently resolved on PPI and also s/p balloon dilation of a Schatzki's ring to 20 mm about 4 months ago - R13.10

CONSENT : Informed consent was obtained from the patient after providing any opportunity for questions.

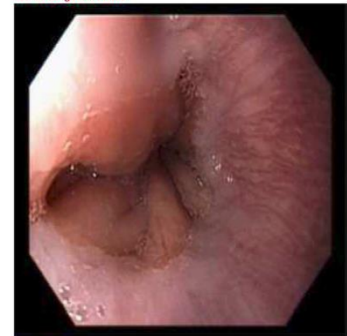
PREPARATION : EKG pulse, blood pressure and oxygen saturation monitored.

INSTRUMENT : Olympus GIFH180 SN# 2909885

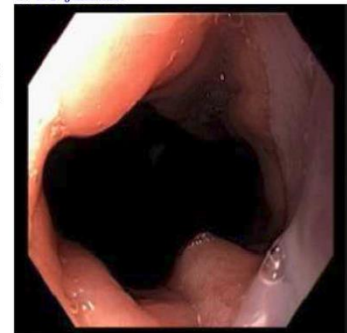
ANESTHESIA : As per anesthesia

PROCEDURE : Appropriate time-out protocol was followed: the correct patient, the correct procedure and the correct equipment in the room were confirmed. The Gastroscope was gently passed through the incisoral orifice into the oral cavity and under direct visualization the esophagus was intubated. The endoscope was passed down the esophagus, through the stomach and into the 2nd Portion. Color, texture, mucosa and anatomy of esophagus, stomach and duodenum were carefully examined with the scope. The patient tolerated the procedure well and there were no complications. After completion of the examination, patient was transferred to the recovery room.

a. EG-Junction



b. EG-Junction



c. Retroflexed view



FINDINGS

- Oropharynx - Normal
- Esophagus - Mild distal esophagitis
 Lower : Biopsy taken for GERD symptoms
- EG-Junction - Biopsy done r/o Barrett's esophagus.
- Cardia - Normal
- Fundus - Normal
- Body - Normal
- Antrum - Gastritis, unspecified, without bleeding
- Pylorus - Normal

2. The clinical interpretation of the results of colonoscopy (to the topic № 23, 24)

Fibrocolonoscopy - method of diagnosing diseases of the large intestine with an endoscope. The study is performed by putting the endoscope through the anus and holding it for the full depth of the colon (about 1-1.5 meters).



Indications and contraindications for colonoscopy

<u>Indications</u>	<u>Contraindications</u>
1	2
-Anemia (acute or chronic gastrointestinal bleeding, occult blood	-Suspicion of perforation, or a high risk of perforation (a toxic bowel dilatation

<p>in the stool</p> <ul style="list-style-type: none"> -Inflammatory bowel disease -Chronic abdominal pain -Diarrhea lasting more than 1 week -Constipation, flatulence, -Suspected polyps or cancer, including colorectal cancer screening 	<p>with UC or Crohn's disease, 2-3 weeks after acute diverticulitis)</p> <ul style="list-style-type: none"> -Shock, hemodynamic instability, severe arrhythmias -A 3-month period after myocardial infarction due to the risk of arrhythmias
<ul style="list-style-type: none"> -Family history of bowel cancer -Changes in bowel identified in other studies 	<p>Ascites with unknown etiology, peritoneal dialysis, artificial heart valves, immunodeficiency, septicemia and infectious disease in a patient (relative contraindications, colonoscopy is possible under the cover of antibiotics)</p>

Endoscopic examination with morphological study of biopsy specimens - "gold standard" of diagnosis - carried out in all cases to verify the diagnosis of ulcerative colitis and Crohn's disease. If you suspect a toxic bowel dilatation colonoscopy should not be conducted.

Endoscopic features ulcerative colitis

Mild form	Moderate form	Severe form
<ul style="list-style-type: none"> -Diffuse hyperemia - Lack of vascular pattern - Erosion - Individual surface areas of ulceration - Inflammation limited to the rectum 	<ul style="list-style-type: none"> - "granular" mucous - Petechiae - Contact bleeding - Undrainable ulcerated surface areas of irregular shape, covered with mucus, fibrin, pus Predominantly left-sided lesions 	<ul style="list-style-type: none"> - Intensive necrotizing inflammation - Purulent exudate - Spontaneous hemorrhage, microabscesses - pseudopolyps Often the ultimate defeat of the colon



Photo. Endoscopic picture of ulcerative colitis.

Endoscopic features of Crohn's disease: patchy, asymmetric, transmural granulomatous inflammation of any part of the intestinal tube, "cobblestones", which is often transmural.

3. Mastering the skills of interpretation data of X-ray (to the themes № 22, 23, 24, 28)**A. Gastric X-ray examination (to the theme № 22)**

Earlier X-ray of the stomach was recommended as one of the main diagnostic methods. Currently, the diagnosis of unexplored dyspepsia is essentially lost its meaning. This is due to the fact that its diagnostic value does not exceed 80% and, moreover, accompanied by a radiation dose of 5 rem in (this is the annual dose of radiation exposure for nuclear plant worker).

The main indications for gastric X-ray are suspected violation of gastric emptying, inability to perform of EFGDS.



Picture. roentgenogram of the stomach cicatricial pyloric stenosis on the basis of ulcer disease: stomach expanded hypotonic contains mucus (1) the pylorus sharply narrowed (2).

Figure of gastric pylorus in case of organic narrowing characterized by pronounced atony phenomena, the form of a semi-full stomach is spherical with an easily emerging horizontal level. This figure is located medially, and it is usually not noticeable peristaltic movements. Above the horizontal level of contrast mass usually found grayish shade same horizontal level as the food taken a day before. Circumscribed figure stomach occurs in chronic gastric dilatation, coming as a result of the slow narrowing of pylorus. This form is always organic origin.

In other cases, usually in the rapidly developing constrictions pylorus parts picture

shadowy figure stomach is different: in the first place here is a violation of the motor function of the stomach, as pronounced peristalsis, sometimes shadowy figure separating the stomach into several portions, and most importantly, the presence antiperistalsis (ie peristaltic waves with opposite direction from the pylorus to the cardia). Despite increasing the peristaltic movements of the stomach, usually observed at the beginning of the digestive system, the end (after 2-5 hours) as we find a great balance in the stomach contrasting mixture located medially or even the right of the midline. Finding this residue may occur after 5-19 hours and more.

B. X-ray examination of the small intestine (the topic 23)

Passage of barium suspension through the small intestine or enteroclysis (method of "intestinal enema") performed for suspected small bowel pathology. For a long time, until there were modern video endoscopes and video capsule endoscopy, barium x-ray study of the passage through the small intestine was the main diagnostic method for suspected small bowel pathology.

Enhanced X-ray of the small intestine enteroclysis when barium or Gastrografin via intubation tube is injected directly into the duodenum or jejunum, more informative method diagnosis the diseases of the small intestine, such as a lymphoma, stricture, diverticulosis, Crohn's disease.

Typically, X-ray study reveals organic changes (tumors, strictures, fistulas, diverticulums, etc.). As a rule, small mucosal changes, such as atrophy of the intestinal villi, aphthae or vascular anomalies (eg, angiodysplasia, is a common cause of bleeding) in conventional radiographic contrast study invisible.

C. Irrigoscopy (theme 24)

X-ray examination of the colon by its retrograde filling of contrast barium meal. Irrigoscopy allows us to study the relief of the mucosa and the motor-evacuation function of the colon, identify segmental and focal lesions, position and size, the presence of additional bowel loops, the consistency of the ileocecal space. Unfortunately, the diagnostic value of irrigoscopy is lower than endoscopy. Often the interpretation of theirrigoscopy data is difficult, which can give false-positive or false-negative results (the ability to "to miss" the tumor with torsion loops of intestine, especially in the area of the sigmoid colon; difficulties in distinguishing tumors and fecal stones, spasm and strictures of intestine). Small structural changes (angiodysplasia, inflammation, atrophy, small polyps 2-5 mm in size) X-ray examination did not reveal. A further limitation of irrigoscopy is also a high radiation dose, which limits the possibility of its use in young people, especially women. Therefore, in all cases, if it's possible, should be given to endoscopic methods of research.

Radiographic signs of ulcerative colitis

The acute form	The chronic form
<ul style="list-style-type: none"> - Normal (not excluded proctitis) - "Grain" mucous - The absence of fecal shadows in the 	<ul style="list-style-type: none"> - Increasing the recto-rectal space - "Grain" mucous - Loss haustration

intestinal lumen

- Single or multiple ulcerative defects
- Spotted relief mucous
- Soft spiky protrusions on the contours of the gut
- The islands of unchanged mucous
- Toxic dilation (diameter greater than 6.7 cm)

- "Tubular" colon
- pseudopolyps

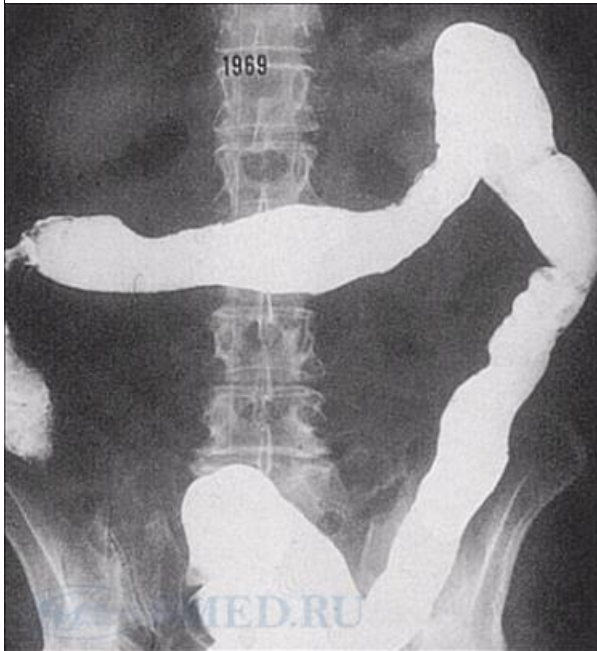


Fig. On radiographs represented sections of the large intestine. Contours are smoothed, disappeared haustration. Intestine narrowed, rigid. This picture of severe ulcerative colitis.

4. Sonographic examination of the digestive tract and abdominal organs (themes № 25-28)

Ultrasound: a method is based on the ability of the ultrasound reflected from the boundaries of tissues with different acoustic impedance and the formation the diagnose based on the image of the studied organs. Ultrasound is one of the most informative methods for diagnosis of diseases of the gallbladder, liver, pancreas, spleen, kidney, pelvic organs.

Diseases that can be detected or eliminated by sonography:

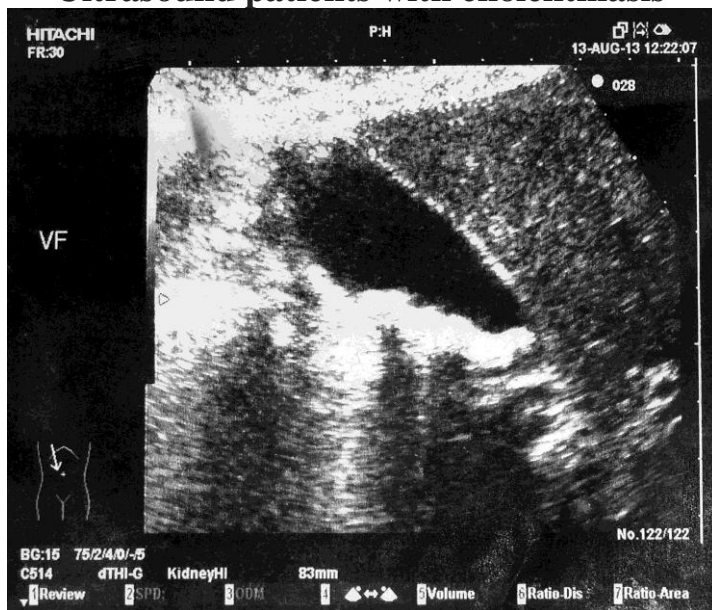
- Cholelithiasis
- Cholestasis
- Hepatic steatosis
- Cirrhosis of the liver
- Benign and malignant liver tumors

- Diseases of the pancreas
- Changes in the spleen
- Ascites
- Kidney disease
- Diseases of the bladder and prostate

Ultrasound criteria for diagnosis of gallstone disease:

- the presence of dense echo structures;
- gallstones;
- disabled gall bladder;
- stones near the sludge;
- stone of cystic duct;
- gallbladder wall thickened to 4 mm or more.

Ultrasound patients with cholelithiasis



Patient: DOE, JANE	Exam Date:	06/07/2010
MRN : 9876	DOB:	02/09/1971
Referring Physician: DR. DAVID LIVESEY	FAX:	(305) 418-8166

US OF THE GALLBLADDER

CLINICAL HISTORY: RUQ pain.

TECHNIQUE: Realtime sonographic images were obtained in multiple projections.

COMMENTS:

The visualized liver is of uniform echo texture without evidence of mass or defect. There is no intra or extrahepatic biliary ductal dilatation. The common bile duct measures up to 4 mm. The gallbladder is physiologically distended with multiple calculi. The gallbladder wall is thickened measuring 6 mm however there is no pericholecystic fluid.

Reported positive murphy's sign.

The visualized portions of the pancreas are unremarkable.

IMPRESSION:

Multiple gallstones with a thickened gallbladder wall and reported positive Murphy's sign. These findings are concerning for acute or chronic cholecystitis. Please correlate clinically.

Ultrasound diagnostic criteria non calculous cholecystitis:

- thickening of the gallbladder wall (more than 4 mm) and its deformation
- violation of contractility and the evacuation of the gallbladder;
- change the shape and size of the gallbladder;
- the presence of constrictions in the neck;
- inhomogeneous cavity of the gallbladder.

Ultrasound criteria for diagnosis of chronic hepatitis:

- hepatomegaly, liver edge is uneven, small focal structure inhomogeneity, the alternation of high and low echogenicity (spotting);
- expansion of the hepatic veins

Ultrasound criteria for diagnosis of cirrhosis:

- enlargement of the liver varying degrees (may decrease due to atrophy), the presence of uneven contour of the ventral surface of the liver, broad hyperechogenicity, in the parenchyma revealed dense ribbon-like structure;
- vascular disorders (decreased blood supply from what the veins are not very different from the surrounding tissue, small vessels are not determined by increasing the diameter of the portal vein more than 15 mm, splenic vein - more than 10 mm, recanalization of the umbilical vein, spontaneous vascular shunts);
- splenomegaly;
- definition of ascites.

Ultrasound criteria for diagnosis of chronic pancreatitis:

- structure pancreas heterogeneous (alternating areas of different echogenicity);

- expansion of pancreatic and bile ducts;
- increase or decrease the size of the prostate (later);
- formation of cysts or calcifications.

5. Learn how to research data interpretation of the secretory function of the stomach - pH monitoring (to themes № 20, 21, 22)

Currently, the study of acid-forming function of the stomach is not given a high priority, which previously. However, there are a number of disease states where the establishment of characteristics of gastric secretion is necessary.

Indications for the study of gastric acidity

- Hp-negative often recurrent peptic ulcers
- Multiple gastroduodenal ulcers
- Symptomatic peptic ulcers
- Peptic ulcers that are resistant to modern antisecretory therapy
- Chronic atrophic (hypoacid, anatsidnyh) gastritis
- GERD (primarily - refractory)
- Functional dyspepsia
- Determination the action of acid reduce medical preparations

Intragastric pH-metry.

Our country has spread express method stepwise express pH-metry in which the conclusion of the acidity of the stomach is made by computer data processing pH recorded in 40 locations throughout the depth of the stomach. And because the results are presented both in absolute numbers and in graphical form, it gives a clear opportunity to doctor to conclude the secretory function of the stomach, receiving quality (normal acidity, Hyperacidity, hypoacid) and quantitative (reflecting which part of the stomach is working in a particular mode acidity) indicators.

Daily or many hours (usually 6-8 hours) intragastric pH monitoring using currently is considered as the "gold" standard for diagnosis of acid. In a normal phase basal secretion in the stomach, the pH is 1.5-2.0 and 1.1-1.2 after histamine stimulation.

Limiting parameters of gastric acid-functional intervals during topographic microprobe gastric pH-metry (Chernobroviy V.M. 1988)

pH	Functional intervals	Stage of acidity
0,9 – 1,2	5	Expressed hyperacidity
1,3 – 1,5	4	Minimal hyperacidity
1,6 – 2,2	3	Normacidity
2,3 – 3,5	2	Minimal hypoacidity
3,6 – 6,9	1	Expressed hypoacidity

7,0 – 7,5	0	Anacidity
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*Normative values of key indicators and acid-secretory function of the stomach
(depending on the phase and intensity of the stimulus secretion)*

The main indicators of gastric secretion	An empty stomach	In basal conditions	Submaximal stimulation	Maximal stimulation
The volume of gastric contents, ml	Up to 50	50 - 100	100 - 120	120 - 200
Total concentration of hydrochloric acid titer units	Up to 40	40 - 60	60 - 100	100 - 120
Hour total flow rate of hydrochloric acid mmol /h or mEq / hour	Up to 2	2 - 6	6 - 12	12 - 24

6. Mastering interpretation of microbiological and biochemical bile analysis data (a topic №25)

Bile test. The method of fractional multiple moment sensing is used to evaluate the functional state of the biliary tract, enabling to diagnose the pathology in different parts of the biliary tract. Laboratory examination of the bile helps to clarify the nature of the pathological process. In multiple stage fractional probing bile need to be collected in separate tubes every 5 or 10 minutes, flow time of each portion of bile, its amount need to be fixed. For bile from the gallbladder portion (portion B) a stimulator 33% magnesium sulfate solution (about 50 ml) is usually used as it causes a contraction of the gallbladder.

Bile amount and phases of biliary excretion

Phase I - bile A - the contents of the duodenum before the introduction of the stimulus. Within 20-40 minutes 15-45 ml of bile should be excreted. Decreased amount of bile, which was excreted at this phase, indicates its hypo-secretion observed in cholecystitis. Hypersecretion is possible after cholecystectomy, in partial remission, with cholecystitis relapse, nonfunctioning gallbladder, in hemolytic jaundice. Excretion of a lighter bile could be observed if liver parenchyma is damaged, if common bile duct passability is disrupted. Intermittent secretion indicates Oddi's sphincter hypertension (duodenitis, angiocholitis, gallstones, cancer). Portion A may be absent in the midst of hepatitis A.

Phase II (sphincter of Oddi is closed) - the time from the introduction of the stimulus to the bile A secretion - 3-6 minutes. Phase II reducing may be caused by hypotension of Oddi's sphincter or increased pressure in the common bile duct. Its extension may be caused by hypertrophy of Oddi's sphincter or duodenal papilla

stenosis. Slowing bile passing through the cystic duct, in particular in cholelithiasis, can also cause a phase elongation.

Phase III - bile A – the content of the common bile duct; for 3-4 min 3-5 ml bile allocated. Extension of phase III up to 5 minutes may occur if there's a gallbladder atony or its blockage of spastic or organic origin (gallstones).

The amount of bile A fraction decreases in severe liver damage and increases with the expansion of the common bile duct.

Phase IV - bile B - gallbladder contents. Within 20-30 minutes 20-50 ml of bile excretes. Acceleration of bile flow suggests hypermotor gallbladder dyskinesia while maintaining its normal volume. Prolonged bile excretion or interrupted with an increased amount are observed in hypomotor gallbladder dyskinesia. Decreased amount of secreted bile indicates a decrease in the volume of the gallbladder, in particular when it is sclerotic changes, cholelithiasis. The fraction of bile is absent in: blockage of the cystic duct stone or neoplasm; violation of the contractility of the gall bladder due to inflammatory changes; loss of ability to concentrate gallbladder bile due to inflammatory changes; the lack of so-called cystic reflex, i.e. emptying of the gallbladder in response to stimulants.

Phase V - «hepatic» - bile, a portion A; flows continuously until the probe is inserted. Slower leakage can be in the lesion of the hepatic parenchyma. The complete absence of all bile portions if probing in the correct position of the probe in the duodenum may be due to compression of the common bile duct with stone or neoplasm or termination of biliary function in severe lesions of the liver parenchyma.

Physical and chemical bile properties.

Normal bile: color of bile: “A” portion - golden yellow; “B” portion – dark yellow, greenish yellow, brown; “C” portion - bright yellow.

Color changes of “A” portion: dark yellow – mixing with “B” portion, hemolytic jaundice; bright yellow - liver parenchyma injury, viral hepatitis, cirrhosis, occlusion, outer compression (enlarged pancreatic head) or spasm of Oddi sphincter; blood stain – duodenal ulcer, papillary tumor, hemorrhagic syndrome; greenish color (transparent bile) – infection, bile congestion.

Color changes of “B” portion: pale, white bile - chronic atrophic bladder inflammation; very dark color - bile stagnation, hemolysis.

Color changes of “C” portion: pale bile - viral hepatitis, cirrhosis; dark staining (pleochromic) - hemolytic jaundice; green – bile duct inflammation, cholangitis; blood staining - stomach, duodenal ulcer, pancreatic, gastric malignant tumors.

Normally, all portions of bile transparent. Diffuse opacity may be caused by hydrochloric acid. Cloudy “A” portion is associated with increased gastric acidity, pyloric failure, duodenogastric reflux. Duodenitis leads to flakes. Cloudy “B” portion is associated with cholecystitis. Cholangitis and cholecystocholangitis cause mucus flakes.

Normally portion A has a neutral or alkaline pH. Portions B and C are alkaline. A portion of the acid reaction is an inflammatory process in the duodenum. Acidic pH

reflects inflammation of corresponding bile ducts, while duodenal reflux may acidify “A” portion.

In healthy individual the relative density of “A” portion is 1,003-1,016 g/ml; “B” portion - 1,016-1,032 g/ml; “C” portion - 1,007-1,011 g/ml. Relative density of “A” portion is by “B” portion admixture, hemolytic jaundice, liver failure, viral hepatitis, cirrhosis, disturbances of bile flow into the duodenum. “B” portion thickening is increased with bile stasis, cholelithiasis, biliary dyskinesia; density is reduced with loss of gallbladder concentration ability. “C” portion thickens in hemolytic jaundice and decreases with bilirubin secretion reduction (hepatitis, cirrhosis).

In a healthy person “A” portion contains 17,4-52,0 mmol / L of bile acids, “B” portion - 57,2-184,6 mmol / l, “C” portion - 13,0-57,2 mmol / l. Rise of bile acids in “C” portion is caused by cholic acid hypersecretion, on the other hand hepatocyte secretory insufficiency reduces bile acids concentration. Normal “A” portion contains 1,3-2,8 mmol / l of cholesterol, “B” portions - 5,2-15,6 mmol / l, “C” portion - 1,1-3,1 mmol / l. Its rise occurs in cholecystitis, cholelithiasis, while concentration falls in gallbladder concentration failure. Bile bilirubin values are given in the table.

Normal bilirubin amount in different portions of the bile

Bile portion	Van den Berg method g / l	Yendrashek method mmol / l
A	< 0.25	0,17-0,34
B	> 2-4	6-8
C	> 0.25	0,17-0,34

Bilirubin amount in the bile decreases in obstructive jaundice, infectious hepatitis, cirrhosis, calculous cholecystitis and increases in hemolytic jaundice, Addison-Birmer's anemia, malaria.

Microscopic examination of the bile.

Normal bile contains cellular elements. Sometimes there is a small amount of cholesterol crystals and calcium bilirubinate. Mucus in the form of small flakes is an evidence of the biliary tract catarrh, it's also observed in duodenitis. Red blood cells don't have a diagnostic value, because they often appear due to the probing injury. White blood cells that found in small flakes of mucus in conjunction with the epithelium of the bile ducts or gallbladder have a diagnostic value. The presence of leucocytes only in portion A is characteristic for duodenitis in inflammatory processes in the major bile ducts. Detection leukocytes mainly in portions, with their presence in lower portions A and C indicates the localization of the inflammatory process in the gall bladder. A significant amount of leukocytes in all fractions of bile occurs in debilitated elderly patients with septic cholangitis and liver abscesses. Eosinophils are found in cholangitis and worm infestation.

High villous columnar epithelium is characteristic for samples of patients with cholecystitis; small prismatic cells of hepatic passages or high columnar epithelium of

the common bile duct - for cholangitis. Large cylindrical cells with villi and cuticle indicate abnormalities in the duodenum. Atypical cells are found in the duodenal content in malignancy.

Significant cholesterol crystals amount are found in changing of colloidal stability of bile (gall stones). They tend to accumulate along with other crystal elements of bile - microlites of calcium salts (calcium bilirubinate), fatty and bile acids. Normally, crystalline elements are missing. Their presence indicates a violation of normal colloidal properties of bile, i.e., the pathological process of cholelithiasis.

Normal bile is sterile. In parasitic diseases vegetative forms of Giardia, helminth eggs are found in bile (opistorhoz, fastsilëz, clonorchiasis, dicroceliasis, strongyloidiasis, trihostrongiloidoz).

7. Mastering interpretation skills of digestive tract(liver function tests) blood test (to topic 25-27)

Biochemical and serological studies in hepatology

- Studies of protein metabolism (serum proteins, protein fraction proteins "acute-phase", thymol test)
- The study of lipid metabolism (total cholesterol and its fractions, triglycerides)
- Studies of carbohydrate metabolism (sugar test with load, galactose, D-xylose)
- The study of trace elements
- Liver function tests:
 - The study of pigment of liver function (bilirubin)
 - The study of enzymes (ALT, AST, HE, ALP, GGT and others)
 - Protein-sediment samples
- Markers of viral hepatitis
- Markers of regeneration and tumor growth

Basic laboratory syndromes criteria of liver damage

1. Cytolysis syndrome

Indicator enzymes:

- ALT ↑
- AST ↑
- Aldolase ↑
- Glutamatdehydrogenase ↑
- Ornithine-Carbtransferase ↑
- LDH (5th fraction) ↑
- Iron ↑
- Vitamin B12 ↑
- Free and conjugated bilirubin ↑

2. Cholestasis syndromeExcretory enzymes:

- Alkaline phosphatase ↑
- 5-nucleotidase ↑
- Gamma-glutamyl ↑
- Cholesterol ↑
- Associated bilirubin ↑
- Bile acids ↑

3. The immune inflammation syndrome

- Total protein ↑
- Gamma-globulin (absolute and relative) IgG, IgA, Ig M ↑
- Sediment samples ↑
- Rheumatoid Factor (+)
- Antibodies to mitochondria holes (+) (primary cirrhosis of the liver)
- Wasserman (+)
- ANA, SMA (+) (autoimmune chronic hepatitis I a type)
- Anti-LKM (+) (autoimmune chronic hepatitis Type II)
- SLA, LP (+) (autoimmune chronic hepatitis Type III)

4. Synthetic liver function deficiency syndromeEndocrine enzymes:

- Cholinesterase ↓
- Ceruloplasmine ↓
- Cholesterol ↓
- Total protein ↓
- Albumin ↓
- Gamma globulin ↓
- Prothrombin ↓
- Fibrinogen ↓

Abnormal results of stress tests (bromsulfale new and I, and others.)

5. Hepatic hyperasotemia syndrome (in liver failure or shunting of blood circulation in the liver)

- Ammonia ↑
- Total amine nitrogen ↑
- Phenols ↑
- Indicane ↑
- Essential amino acids ↑

Remarks:

ANA - antinuclear antibodies

SMA - antibodies to smooth muscle cells

Anti-LKM - antibodies to liver and kidney microsomes

SLA - antibodies to soluble liver antigen

LP - anti-bodies to the hepato-pancreatic antigens

Biochemical criteria for chronic hepatitis activity and their approximate correspondence to morphological criteria activity

Biochemical Activity	ALT levels in the blood	Morphological Activity
Not found	Normal	Normal liver or chronic hepatitis with minimal activity, rarely - a more pronounced activity, in particular HCV infection
Mild	Increased less than 3 times	Mild
Moderate	Increased in 3 - 10 times	Moderate
Severe	Increased more than 3 times	Manifest

The degree of liver cirrhosis activity (by S. D. Podomova, 1993)

Serum components	Moderate activity	High activity
α_2 globulins, %	Increased to 13	Over 13
γ -globulins, %	Increased to 27 - 30	Over 30
Thymol test	Increased to 8 - 9	Over 9
ALT	Increased 1.5 - 2 times	Increased 3 times

The degree of liver cirrhosis severity (Wilde criteria, 1964, Pugh modification, 1973)

Digital equivalent, points	Blood bilirubin, mg / 100 ml	Serum Albumin, g / 100 ml	Prothrombin index, %	Hepatic encephalopathy / stage	Ascites
1	<2	> 3.5	80 - 100	No	No
2	2 - 3	2.8 - 3.5	79 - 60	I - II	Soft (episodical), well-corrected by medications
3	> 3	<2.8	<60	III - IV	Intense refractory (resistant to drug therapy after paracentesis, progresses)

					rapidly)
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Biochemical blood tests results - liver function tests

Example 1 Patient D., 20 years old

Indicators	Level	Norm
Total protein, g / l	72	65-85 g / l
Bilirubin direct, umol/l	1.1	0,9-4,3 umol/l
Bilirubin indirect, umol/l	38.1	6 1 4 7 1 umol/l
ALT, U/l	20	1 - 4 5 U/l
AST U/l	26	1 - 40 U/l
Total cholesterin , mmol / l	3.8	3,6-6,5 mmol/l
Amylase U / L	35	23-100 U/l
Alkaline of phosphors and pelvis, U/l	87	m – up to 115U/l

According to the study it can be assumed functional hyperbilirubinemia (Gilbert's syndrome), in favor of which testifies to an isolated increase in indirect bilirubin, as well as male gender and young age of the patient.

Example 2 Patient A., 45 years old

Indicators	Level	Norm
Bilirubin total s, umol/l	128	0, 85 -20.5 umol/l
Bilirubin direct, umol/l	94	0,9-4,3 umol/l
Bilirubin indirect, umol/l	34	6. 4-17.1 umol/l
ALT, U/l	52	1 - 4 5 U/l
AST U/l	24	1 - 40 U/l
GGT U/l	47	w -9-39 U/l
Total cholesterin , mmol/l	6.8	3,6-6,5 mmol/l
Amylase U/l	40	23-100 U/l
Alkaline phosphatase U/l	120	w – up to 105 U/l

Biochemical test indicates the presence of cholestasis syndrome in patient (elevated levels of alkaline phosphatase, bilirubin (more due to direct fraction), and total cholesterol. It can be assumed obstructive jaundice on the background of cholelithiasis.

Example 3 Patient E., 57 years old

Indicators	Level	Norm
Bilirubin total, umol/l	51	0, 85 -20.5 umol/l

Bilirubin direct, umol/l	34	0,9-4,3 umol/l
Bilirubin indirect, umol/l	17	6. 4-17.1 umol/l
ALT, U/l	235	1 - 4 5 U/l
AST U/l	146	1 - 40 U/l
Total cholesterin, mmol / l	4.2	3,6-6,5 mmol/l
Thymol test, units SH	7	up to 4 units SH
Alkaline phosphatase, U/l	200	w - 105 U/l
C-reactive protein	+++	

According to biochemical research we can suggest liver disease, acute hepatitis or exacerbation of chronic hepatitis B. It is indicated by a significant rise of transaminases (especially ALT by 5 times, indicating a moderate activity degree of the inflammatory process), hyperbilirubinemia (primarily due to direct fraction), increased thymol test and the presence of CRP. Thus, there are three syndromes as: cytolytic, cholestatic and mesenchymal-inflammatory.

Example 4 Patient T., 50 years old

Indicators	Level	Norm
Total protein, g/l	50	65-85 g/l
Bilirubin total, umol/l	69.5	0, 85 -20.5 umol/l
Bilirubin direct, umol/l	56	0,9-4,3 umol/l
Bilirubin indirect, umol/l	13.5	6. 4-17.1 umol/l
ALT, U/l	35	1 - 4 5 U/l
AST U/l	28	1 - 40 U/l
PTI%	62	85-110%
Creatinine, a m mol / l	70	m - 53-97 mmol/l
Total cholesterin, mmol / l	5.8	3,6-6,5 mmol/l
Thymol test, units SH	3.5	up to 4 units SH
Albumin, g / l	41	35-50 g / l
γ -globulins,%	19%	12-22%
GGT U/l	240	m - 11-61 U/l
Alkaline of phosphors and pelvis,U / L	264	m - 115 U/l
Fibrinogen, g / l	16	2.4 g/l

According to the biochemical studies of the patient, a mild cholestatic syndrome (increased levels of alkaline phosphatase, GGT, total bilirubin and cholesterol), and hepatocellular insufficiency syndrome, which is expressed in the

reduction of indicators such as IPT, total protein and albumin, fibrinogen, are revealed. Based on this, it can be assumed cirrhosis.

8. Mastering interpretation skills of blood and feces enzyme-linked immunosorbent assay (to topic 21, 22, 23, 24,28)

A. Identification of Helicobacter pylori (to topic 21, 22)

Since the colonization of *H. pylori* causes a systemic immune response, IgA and IgG classes antibodies appear against various bacterial antigens in the serum of infected human (usually 3-4 weeks after infection). Typically, antibodies (serum IgG, IgA, IgM, secretory IgA, IgM in saliva or gastric contents) are determined by enzyme immunoassay (ELISA). Serological determination of serum *H. pylori* antibodies is the easiest, least expensive and most accessible method and is used for primary screening.

Notable lack of serological test, sharply limiting its application, is that even after a successful drug eradication antibody levels although falls, but the qualitative serological response, a kind of "serological scar" remains positive for a number of years, so to evaluate the effectiveness of treatment or diagnosis reinfection, this reaction is not suitable.

B. Fecal occult blood (to topics 22, 23, 24)

Linked immunosorbent assay method allows quantitative determination of human hemoglobin (FHb). The study is based on a combination of monoclonal and polyclonal antibodies for specific detection with higher sensitivity of human hemoglobin. The sensitivity of the test of 25 ng / ml. In the results of this test are not influenced by substances present in food, or the patient's condition at the time of sample collection. Consequently, patients are not required to comply with any diet or refuse to use drugs before delivery of the analysis. As a result of normal physiological processes daily about 2 ml of blood into the intestine. To avoid false positive results due to this, the sensitivity specially chosen so as to detect only the amount of hemoglobin in excess of the physiological.

Questions for self control

1. What are the criteria taken into account in the endoscopic classification of GERD?
2. What are the invasive and non-invasive methods are used for the diagnosis of Helicobacter pylori infection?
3. What research is currently used as a "gold standard" for diagnosis of stomach and duodenum peptic ulcer disease?
4. Which diagnostic methods are used to determine the acid-forming function of the stomach? What are their normal parameters?
5. What methods are used for verification the small and large bowel disease?
6. What are the endoscopic signs of ulcerative colitis and Crohn's disease?

7. What are the diagnostic standards of chronic calculous cholecystitis and functional biliary dysfunctions?
8. List the biochemical syndromes in liver disease.
9. What methods are defined the severity of the liver fibrosis?
10. What research has the most accurately describes the insufficiency of exocrine pancreatic function?

Tasks for independent work in preparation for meaningful classes Chapter "Fundamentals of diagnosis, treatment and prevention of major diseases of the digestive system."

№	Theme	Hours
	Preparation to practical lessons, including: <ul style="list-style-type: none"> ✓ Capture of interpretation of digestive tract endoscopy data skills ✓ Capture of interpretation of digestive tract X-ray and ultrasound of abdominal cavity data skills ✓ Capture of interpretation of gastric secretory function (pH-metry) data skills ✓ Capture of interpretation of microbiological and biochemical investigation of bile data skills ✓ Capture skills data of laboratory methods (liver function test) ✓ Capture skills data of immune enzymes investigations of blood and stool 	9
2.	Curation of the patient with grounding the diagnosis	1
3.	Individual work: <ul style="list-style-type: none"> ✓ Report of abstract on practical lesson ✓ Report at clinical conferences ✓ Report history of case on practical lesson ✓ Writing of theses, articles 	
TOTAL		10

Indicative map for selfpreparation of the student with writing history:

Main tasks	Comments
1	2
Using the outline of the disease history (DH), write the results of the patient examination with gastroenterological diseases	<ul style="list-style-type: none"> - DH provides a brief description of all the necessary sections, with a detailed description and analysis of digestive system and other systems pathogenically combined with the disease - Before formulating the preliminary diagnosis, patient's syndromes should be identified and decoded. - In terms of patient's examination plan, not only the name of the survey method should be specified, but also the expected changes in the results, or to formulate what purpose it is appointed. - Prescription list should correspond to the shape of the

	<p>stationary prescription list; activity mode</p> <ul style="list-style-type: none"> - Diet, medications prescription by plan: intravenous, intramuscular, oral, local, physical therapy. <p>Medications are written in Latin (form - Tab, Sol, Supp, a single dose in mg or g, the path and the rate of the introduction in English), all drugs are issued by the international title.</p> <ul style="list-style-type: none"> - The study should include the clinical interpretation with allocation of laboratory and instrumental syndromes, which will later be used to support the clinical diagnosis - The differential diagnosis should be presented in the form of differential diagnosis program by the scheme: Leading syndrome, look alike diseases, the comparison example of a leading syndrome in a patient with potentially look alike pathological condition - Justification of clinical diagnosis of the main disease and its complications - The formulation of a clinical diagnosis by the scheme: <ul style="list-style-type: none"> - <i>Main disease</i> - <i>Complications of the main disease</i> - <i>Comorbidities</i>
	<p>Epicrisis (must include recommendations for the correction of patient lifestyle, diet, medication)</p>

III Tests for self-control

1. The reason of GERD may be:

- A. Dolichocolon.
- B. Hernia of esophageal diaphragm hole. +
- C. Overdose of antacids.
- D. Lack of fiber in food.
- E. All of above.

2. What is not a GERD complication?

- A. Bleeding.
- B. Esophageal adenocarcinoma.
- C. Stricture.
- D. Acute intestinal obstruction. +
- E. Erosion of esophageal mucous.

3. What degree of reflux esophagitis if : one (or more) erosion longer than 5 mm, limited by the boundaries of one fold?

- A. A.

B. B. +

C. C.

D. D.

E. E.

4. Which drugs do not block the secretion of hydrochloric acid?

A. Famotidine.

B. Rabeprazole.

C. Atropine. +

D. Maalox.

E. Gastrocepine.

5. Which method is not informative in the GERD diagnosis?

A. PPI-test.

B. Upper endoscopy.

C. CT. +

D. impedance -metry.

E. Complete blood count.

6. Famotidine is:

A. Prokinetic.

B. Antacid.

C. H₂ -receptor histamine blockers. +

D. Peripheral M-cholinolitics.

E. Antiviral drug

7. In the treatment of duodenogastral reflux in GERD you can include:

A. H₂ blocker at night. +

B. Enzyme preparations.

C. Ursodeoxycholic acid.

D. Laxatives drugs.

E. Probiotics.

8. What method of diagnosis is optimal as a screening for GERD?

A. PPI-test +

B. Upper endoscopy.

C. X-ray.

D. Ultrasound.

E. ECG.

9. What PPI is used for faster achievement acid-inhibitor effect, sufficient for GERD ?

A. Esomeprazole. +

B. Pantoprazole.

C. Rabeprazole.

D. Lanzoprazol.

E. Omeprazole

10. Patient, 42 y.o. Complaints: difficulty in swallowing food, pain in the lower part of the sternum, sometimes at night with food regurgitation, which is eaten in the evening. Lost weight over 4 months to 2 kg. On examination revealed no pathology. On ECG - a

slight depression of ST segment in III lead. X-ray: esophageal peristalsis is absent, a significant expansion of the esophagus to the cardiac department, where the esophagus is narrowed in the form of the beak. A blood test – normal. Your diagnosis?

- A. Achalasia of the esophagus.
- B. Cancer of the esophagus.
- C. Scleroderma with esophagitis.
- D. Esophagus diverticulum.
- E. Diaphragmatic hernia. +

11. The “symptoms of anxiety” include:

- A. Unmotivated weight loss.
- B. Feeling of weakness and anxiety. +
- C. Unmotivated iron deficiency anemia.
- D. Family history of gastric cancer.
- E. Lymphadenopathy.

12. Organic dyspepsia is:

- A. Peptic duodenal ulcer.
- B. Stomach cancer.
- C. Postprandial distress syndrome. +
- D. Erosive duodenopathy.
- E. Cholelithiasis.

13. Male, 20 years, complaints: squeezing epigastric pain, heartburn, belching sour.

Objective: a satisfactory condition. On palpation pain in the epigastric region. Fibrogastroduodenoscopy with the morphology of biopsy specimens revealed no pathology. What drug is most effective?

- A. Omeprazole. +
- B. Almagel.
- C. De-nol.
- D. Gastrotsepin.
- E. Metoclopramide.

14. Male 67 years old, the complaint of loss of appetite, tightness in the epigastrium after meals, belching air, nausea. In the study of gastric secretion revealed achily. Fibrogastroduodenoscopy - gastric mucosa thinned, atrophic. Your diagnosis?

- A. Gastritis A. +
- B. Stomach cancer.
- C. Chronic diskinetetic colitis.
- D. Chronic gastroduodenitis.
- E. Gastritis with intestinal metaplasia

15. Patient 35y.o., abuse alcohol. Complaints: epigastric pain alternation 1-1.5 hours after meal. Fibrogastroduodenoscopy - in the stomach antrum expressed hyperemia, increased vulnerability of the mucosa. The most common cause of revealed pathology?

- A. H. Pilory infection.
- B. Presence of antibody to parietal cells.
- C. Alimentary factor.

D. Toxic effect of alcohol.

E. Stress.

16. Patient 55 years, complaints: aching epigastric pain, nausea and heartburn. These complaints appeared after treatment with indomethacin. Objective: abdomen is soft, pain in epigastric region. Liver and spleen are not enlarged. What should do first?

A. Cancel indomethacin. +

B. Prescribe a hunger for 2 days.

C. Wash out the stomach.

D. Prescribe antacids.

E. Prescribe drugs, acting on H. Pilory.

17. Patient was diagnosed Chronic hypoacidic gastritis and moderate anemia. Chronic fundal gastritis type A was suspected. Chose the mechanism of development this gastritis:

A. Autoimmune gastritis type A. +

B. Chronic gastritis type B.

C. Chronic gastritis type C.

D. Chronic gastritis, pangastritis.

E. chronic gastroduodenitis, exacerbation.

18. Patient suffers from gastritis. For last 6 month complaints with epigastral pain, nausea, lack of appetite, weight loss, aversion to meat. Objective: low nutrition, above the left clavicle palpable lymph node. Which disease should be excluded first?

A. Stomach cancer. +

B. Cancer of pancreas.

C. Stomach ulcer disease.

D. Chronic gastritis.

E. Cancer of gall bladder.

19. The patient complains on epigastric pain, nausea, weakness, vomiting, feeling of fullness in the stomach. From history: last night was in a cafe. Objective: pale skin, tongue coated with gray patina, salivation. During palpation - epigastric pain. Ps 100 bpm, BP 110/60 mmHg. Primary diagnosis?

A. Acute gastritis. +

B. Duodenum ulcer disease.

C. Stomach ulcer disease.

D. Chronic gastritis.

E. Acute pancreatitis.

20. Patient 52 y.o., for 10 years suffers from autoimmune gastritis A. During planned examination complaints on periodic nausea, heaviness in epigastric region after meal. Last exacerbation – 6 month ago. Follow-up the diet, smokes 10 cigarettes per day. What methods of gastric cancer prevention are needed in this case?

A. Stop smoking. +

B. Periodical antacids intake.

C. Periodical anti H.Pilory drugs intake.

D. Periodical Gastrotsepin intake.

E. Periodical H₂-hystamine blockers intake.

21. Male 27 years turned to the doctor due to exacerbation of peptic ulcer disease. During gastroscopy test for the presence of abnormal flora is taken. More likely to be found:

- A. Helicobacter.+
- B. Staphylococcus.
- C. Candida.
- D. Chlamydia.
- E. Giardia.

22. Patient 42 y.o., suffers from duodenal ulcer disease for 20 years. Complaints: constant heaviness in stomach after meal, rancid belching, vomiting with eaten before meals, weight loss. Objective: tissue turgor reduced. Abdomen soft, no symptoms of irritation of the peritoneum, the sound of "splash" in the epigastrium. Defecation 1 time per 3 days. What complication of ulcer disease occurred?

- A. Covered ulcer perforation.
- B. Stomach cancer.
- C. Ulcerative stenosis of the output of the stomach. +
- D. Ulcer penetration.
- E. Chronic pancreatitis

23. Male, 24 years, complaints: epigastric pain after 1-1,5 hours after meal and at night, frequent vomiting with relief. Sever smoker. Objective: during palpation muscles defence, pain in the right above novel. In stool – reaction for occult blood is positive. What is most likely diagnosis?

- A. Chronic cholecystitis.
- B. Chronic gastritis.
- C. Chronic pancreatitis.
- D. Chronic colitis.
- E. Ulcer disease. +

24. Male 18 years old, at the first time was diagnosed duodenum ulcer disease. Test for H. Pilory positive. pH of gastric juice – 1,0. What scheme of treatment is most effective?

- A. Clarithromycin + omeprazole. +
- B. Amoxicillin + Cvamatel.
- C. De-Nol + oxacillin.
- D. De-Nol + trihopol.
- E. Omeprazole+ cimetidine.

25. Patient 35y.o. Complaints: weakness, weight loss, aversion to meat, heaviness in stomach. Objective: pale skin, duffuse pain in epigastric region. CBC: Hb 82 g/l, ESR 52 mm/h; positive reaction for occult blood in stool. Fibrogastroduodenoscopy - in the stomach fundus - ulcer with infiltrative shaft. What is most likely diagnosis?

- A. Stomach ulcer.
- B. Stomach cancer. +
- C. Duodenal ulcer.

- D. Chronic gastritis.
E. Chronic pancreatitis.
26. Patient with duodenum ulcer disease was revealed the presence of H. Pilory. During combined therapy, stool became black-green colour. Name the drug, which caused this change.
- A. Metronidazole.
B. Omeprazole.
C. De-Nol. +
D. Amoxicillin.
E. Actovegin.
27. Patient with duodenum ulcer disease complaints on pain after meal with irradiation to the back. Weight loss till 6 kg for 6 month. Endoscopy – bulbus ulcer with deformation. How you can explain these complaints?
- A. Penetration. +
B. Perforation.
C. Duodenostasis.
D. Pylorostenosis.
E. Malignization.
28. Patient suffers from ulcer disease. For last 6 month complaints with epigastral pain, nausea, lack of appetite, weight loss, aversion to meat. Objective: low nutrition, above the left clavicle palpable lymph node. Which disease should be excluded first?
- A. Stomach cancer. +
B. Cancer of pancreas.
C. Chronic hepatitis.
E. Chronic gastritis.
D. Cancer of gall bladder.
29. The patient complaints on intensive epigastric pain, occurred 1-1,5 hour after meal. For 11 years suffers from ulcer disease. Objective: palpation - pain in the right epigastral region. Ps 70 bpm, BP 120/80 mmHg. What indicators of intragastral pH-metry in the stomach fundus are more characteristic of the patient's disease?
- A. pH =1,0-2,0. +
B. pH =3,0-4,0.
C. pH =4,0-5,0.
D. pH =5,0-6,0.
E. pH =6,0-7,0.
30. Surgical treatment due to peptic ulcer is indicated in:
- A. Always with a purpose to reducing secretion .
B. Only in complicated cases. +
C. Stomach ulcer.
D. H.Pilory-negative ulcer.
E. H.Pilory-positive ulcer.
31. Malabsorption is:
- A. Absorption disturbance. +

- B. Alimentary disturbance.
 - C. Splitting disturbance.
 - D. All of above.
 - E. None of above.
32. Chronic anemia is a clinical appearing and complication of what syndrome?
- A. Maldigestion.
 - B. Malnutrition.
 - C. Malabsorbtion.
 - D. All of above. +
 - E. None of above.
33. The most precise method of small intestinum mucous evaluation is:
- A. Upper endoscopy.
 - B. X-raying.
 - C. X-raying with contrast.
 - D. Videocapsule endoscopy. +
 - E. Colonoscopy.
34. Basic treatment of celiac disease is:
- A. Severe gluten free diet.
 - B. Gluten free diet + prednison.
 - C. Gluten free diet + spasmolitic.
 - D. All of above.
 - E. Grounded medicament treatment every separate patient + gluten free diet. +
35. Changes of small intestinum mucous are characterized:
- A. Complete atrophy of villi .
 - B. Atrophy of villi and cripts hyperplasy.
 - C. Lympho-plasmacyte infiltration.
 - D. Eosinophyle infiltration.
 - E. B + C. +
36. Malabsorbtion is caused by:
- A. Celiac disease.
 - B. Chronic pancreatitis.
 - C. Cron's disease.
 - D. All of above. +
 - E. None of above.
37. Patient 48 y.o., complaints: periodic intensive pain n right hypochondrium with the irradiation to the back, nausea, frequent liquid stool, weight loss on 12 kg for 12 month. Objective: low nutrition, intensive pain in Dejarden's point. Liver +1 sm. Defecation 3-4 times per day with fatty mix. In urine: diastase – 16 U. What diagnosis is most likely?
- A. Chronic pancreatitis. +
 - B. Chronic hepatitis.
 - C. Chronic enterocolitis.
 - D. Gluten enteropathy.
 - E. Autoimmune gastritis.

38. Patient 34 y.o., complaints: pain in ileosacral region from the right, frequent diarrhea with blood, arthralgias, increased body temperature. Abdomen is soft, painful in ileocecal region. On X-ray – on relief of mucous revealed the contrast spots, ileocecal narrow crossing. What diagnosis is most likely?
- A. Gluten enteropathy.
 - B. Cron's disease. +
 - C. Ulcer colitis.
 - E. Pseudomembranose colitis.
 - D. Tuberculosis ileitis.
39. The patient 14 y.o., complaints on general weakness, weight loss. The condition worsened after taking a lot of wheat flakes. This happened from the childhood. Objective: low nutrition, delay in physical development. The reason of the disease in this case is:
- A. Gluten enteropathy. +
 - B. Intestinal worm invasion.
 - C. Chronic pancreatitis.
 - D. Intestinal disbacteriosis.
 - E. Lactose deficit.
40. A patient 38 y.old, complains of pains in paraumbilical region, in inferolateral parts of stomach, bloating, tummy rumbling, increasing after meal, decreasing after the defecation act. Stool 1 time a day, similar to scybalous. Disturbed by tearfulness, insomnia. Was examined, no pathology during colonoscopy. Diagnosis: irritable intestine syndrome with prevalence of pains syndrome and meteorism. What symptoms of a patient is evidence of favour of this disease?
- A. Insomnia, tearfulness.
 - B. Pains on paraumbilical region.
 - C. Pains in inferolateral parts of stomach, bloating, tummy rumbling. +
 - D. Bloating.
 - E. Tummyrumbling.
41. A patient 29 y.old complains of a pronounced meteorism, tenesmus, stool solid 1 time a day with much mucus. Given symptoms have been disturbing for 3 months, increase on the background of stress situations. Sclera's are subicteric. Tongue is coated with a white fur on the root. During palpation abdomen is bloated, segments of a large intestine are spasmed, painful. What objective data is evidence in favour of affection of a large intestine?
- A. Subicteritiousness of sclera.
 - B. Tongue is coated with a white fur.
 - C. Segments of a large intestine are spasmed, painful.+
 - D. Tenesmus.
 - E. Stool solid 1 time a day with much mucus.
42. A 35 y.o. woman consulted a doctor about occasional pains in paraumbilical and iliac region that reduce after defecation or passage of gases. Defecation takes place up to 6 times a day, stool is not solid, with some mucus in it. Appetite is normal, she has

not put off weight. First such symptoms appeared 1,5 year ago, but colonoscopy data reveals no organic changes. Objectively: abdomen is soft, a little bit painful in the left iliac region. Blood and urine are normal. What is the preliminary diagnosis?

- A. Irritable bowels syndrome +
- B. Celiac disease
- C. Crohn's disease
- D. Pseudomembranous colitis
- E. Dispancreatism

43. A 20-year-old woman has a 3-4 month history of bloody diarrhoea; stool examination proved negative for ova and parasites; stool cultures negative for clostridium, campylobacter and yersinia; normal small bowel series; edema, hyperemia and ulceration of the rectum and sigmoid colon seen on sigmoidoscopic examination.

Select the most likely diagnosis:

- A. Ulcerative colitis +
- B. Gastroenteritis
- C. Carcinoid syndrome
- D. Zollinger-Ellison syndrome
- E. Granulomatous colitis \

44. A 54 year old male patient complains about permanent dull pain in the mesogastral region, weight loss, dark blood admixtures in the feces, constipations. He put off 10 kg within a year. In blood: erythrocytes: $3,5 \cdot 10^{12}/l$, Hb- 87 g/l, leukocytes - $12,6 \cdot 10^9/l$, stab neutrophil shift, ESR- 43 mm/h. What is the most probable diagnosis?

- A. Cancer of transverse colon +
- B. Gastric ulcer
- C. Chronic colitis
- D. Chronic pancreatitis
- E. Stomach cancer

45. A 43-year-old female patient complains of unstable defecation with frequent constipations, abdominal swelling, headache, sleep disturbance. Body weight is unchanged. What disease are these clinical presentations typical for?

- A. Irritable colon syndrome +
- B. Chronic enteritis
- C. Chronic pancreatitis
- D. Chronic atrophic gastritis
- E. Colorectal cancer

46. A 43 y.o. male complains of stomach pain, which relieves with defecation, and is accompanied by abdominal winds, rumbling, the feeling of incomplete evacuation or urgent need for bowel movement, constipation or diarrhea in alternation. These symptoms have lasted for over 3 months. No changes in laboratory tests. What is the most likely diagnosis?

- A. Irritable bowel syndrome +
- B. Spastic colitis
- C. Colitis with hypertonic type dyskinesia

D. Chronic enterocolitis, exacerbation phase

E. Atonic colitis

47. A patient has clinical signs of colitis. During irrigography the disappearance of haustra, ulcerative defects in the form of barium deposits and crenation of contours, pseudopolyps were revealed. In favor of what diagnosis is it evidence?

A. Ischemic colitis.

B. Crohn's disease.

C. Nonspecific ulcerative colitis. +

D. Lymphocytic colitis.

E. Collagenic colitis.

48. A patient 54 y.old, complains of frequent, liquid stool with a mucous admixture, food debris, meteorism. The indicated symptoms increase on the background of nervousness. Notices dryness and peeling of skin, burning sensation on a tongue tip, fragility of nails and falling out of hair. Diagnosis: malabsorption syndrome. Result of what examination confirms this syndrome?

A. Colonoscopy. +

B. Irrigoscopy.

C. Proctoscopy.

D. D-xylose test.

E. Biopsy of a mucous membrane.

49. A patient has diagnosis: nonspecific ulcerative colitis with light course. Choose medicines for the basic treatment:

A. Mesalazin, budesonide. +

B. Antibiotics, prednisolone.

C. Antibiotics, sulphonamid.

D. Cytostatics.

E. Probiotics.

50. A 50 year old woman complained of attacks of right subcostal pain after fatty meal she has been suffering from for a year. Last week the attacks repeated every day and became more painful. What diagnostic study would you recommend?

A. Ultrasound examination of the gallbladder +

B. Liver function tests

C. X-ray examination of the gastrointestinal tract

D. Ultrasound study of the pancreas

E. Blood cell count

51. A 60-year-old woman, mother of 6 children, developed a sudden onset of upper abdominal pain radiating to the back, accompanied by nausea, vomiting, fever and chills. Subsequently, she noticed yellow discoloration of her sclera and skin. On physical examination the patient was found to be febrile with T 38,9°C, along with right upper quadrant tenderness. The most likely diagnosis is:

A. Choledocholithiasis +

B. Benign biliary stricture

C. Malignant biliary stricture

- D. Carcinoma of the head of the pancreas
E. Choledochal cyst
52. The complications of acute cholecystitis which require surgical intervention are as follows EXCEPT:
- A. Jaundice +
 - B. Empyema of the gall-bladder
 - C. Emphysematous gall-bladder
 - D. Gall-bladder perforation
 - E. Cholangitis conditioned by the presence of stones in the bile tract
53. A 37-year-old patient has sudden acute pain in the right epigastric area after having fatty food. What method of radiological investigation is to be used on the first stage of examining the patient?
- A. Ultrasonic +
 - B. Roentgenological
 - C. Radionuclid
 - D. Magnetic-resonance
 - E. Thermographic
54. A 50-year-old patient complains about having pain attacks in the right subcostal area for about a year. He pain arises mainly after taking fattening food. Over the last week the attacks occurred daily and became more painful. On the 3rd day of hospitalization the patient presented with icteritiousness of skin and scleras, light-colored feces and dark urine. In blood: neutrophilic leukocytosis $-13,1 \cdot 10^9$, ESR- 28 mm/h. What is the most likely diagnosis?
- A. Chronic calculous cholecystitis +
 - B. Chronic recurrent pancreatitis
 - C. Fatty degeneration of liver
 - D. Chronic cholangitis, exacerbation stage
 - E. Hypertensive dyskinesia of gallbladder
55. A patient 48 y.o., complains of dull pain in a right hypochondrium after meal, especially fatty, fried, smoked. Considers himself a sick person for 12 years. During objective examination abdomen is slightly bloated, painful in a right hypochondrium. Liver at the edge of a costal margin, painless. Spleen isn't palpable. Positive symptoms of Kehr, Murphy, Ortner are found. What disease should one think of?
- A. Ulcerative disease of a duodenum, active phase.
 - B. Chronic pancreatitis in phase of exacerbation.
 - C. Chronic gastritis in phase of exacerbation.
 - D. Chronic cholecystitis in phase of remission.
 - E. Chronic cholecystitis in phase of exacerbation.+
56. A patient 38 y.old, had US of a gallbladder whose walls are thickened, echogenicity is increased, double-contour of a gallbladder in a lumen – biliary sludge. What are these changes evidence of?
- A. Hypermotor dyskinesia of a gallbladder.
 - B. Hypomotor dyskinesia of a gallbladder.

C. Chronic inflammation of a gallbladder.+

D. Tumour of a gallbladder.

E. Empyema of a gallbladder.

57. A patient had the following results during US of organs of abdominal cavity: gallbladder isn't enlarged. Echo suspension is detected. A chronic cholecystitis is suspected. What disease should the differential diagnostics be done with?

A. Gallbladder empyema.

B. Tumour of a gallbladder.+

C. Cholelithiasis.

D. Hydrops of gallbladder.

E. Cholesterosis of a gallbladder.

58. A patient 37 y.old, has diagnosis: chronic noncalculous cholecystitis with genetically-hypertonic dyskinesia of a gallbladder. What group of medicines should be indicated for this patient?

A. Blockers of H₂-histamine receptors.

B. Proton pumps inhibitors.

C. Enzymatic drugs.

D. Myotropic spasmolytics.

E. Cholekinetics.+

59. A patient has a chronic noncalculous cholecystitis in the phase of exacerbation. Complains with intensive pain in a right hypochondrium, nausea, vomiting, rise of temperature to 38,5⁰C. Blood: leukocytes — 18 G/l, stab— 15%, ESR — 30 mm/h; total bilirubin — 22 μmol/l, direct bilirubin — 4,2 μmol/l. Development of what disease of a patient can be suspected?

A. Gangrene of a gallbladder.

B. Obstructive jaundice.

B. Chronic hepatitis.

D. Gallbladder empyema.+

E. Chronic pancreatitis.

60. Patient suffering from a chronic viral C hepatitis, complains of a significant cutaneous itching. What's the pathogenesis of this complaint?

A. Allergy.

B. Neurasthenia.

C. Cholestasis.+

D. Intoxication.

E. Portal systemic encephalopathy.

61. Patient K. complains of heaviness, dull nagging pains in the right hypochondrium, increasing after physical exertion, having no clear connection with taking of food. No attacks of intensive pains in abdomen. General weakness, cutaneous itching, periodical icteritiousness of skin. What disease is the most probable?

A. Chronic acalculous cholecystitis.

B. Chronic pancreatitis.

C. Chronic hepatitis. +

D. Hemolytic anemia.

E. Chronic calculous cholecystitis.

62. 47 y.o. patient complains of intensive skin itching, jaundice, bone pain. The skin is hyperpigmented. There are multiple xanthelasma palpebrae. The liver is +6 cm enlarged, solid with acute edge. The blood analysis revealed total bilirubin - 160 $\mu\text{mol/L}$, direct - 110 $\mu\text{mol/L}$, AST - 2,1 mmol/L , ALT - 1,8 mmol/L , alkaline phosphatase - 4,6 mmol/L , cholesterol - 9,2 mmol/L , antimitochondrial antibodies M2 in a high titer. What is the probable diagnosis?

A. Primary biliary liver cirrhosis +

B. Primary liver cancer

C. Chronic viral hepatitis B

D. Acute viral hepatitis B

E. Alcoholic liver cirrhosis

63. A 40 y.o. patient was admitted to the gastroenterology with skin itching, jaundice, discomfort in the right subcostal area, generalized weakness. On examination: skin is jaundiced, traces of scratches, liver is +5 cm, spleen is 6x8 cm. In blood: alkaline phosphatase - 2,0 $\text{mmol}/(\text{hour}\cdot\text{L})$, general bilirubin - 60 $\mu\text{mol/L}$, cholesterol - 8,0 mmol/L . What is the leading syndrome in the patient?

A. Cholestatic +

B. Cytolytic

C. Mesenchymal inflammatory

D. Asthenic

E. Liver-cells insufficiency

64. A 40-year-old man is ill with autoimmune hepatitis. Blood test: IgA/G ratio 0,8, bilirubin - $\mu\text{mol/L}$, transaminase : ALT - 73 U/l, AST - 52 U/l. What is the most effective means in treatment from the given below?

A. Glucocorticoids, cytostatics +

B. Antibacterial medication

C. Hepatoprotectors

D. Antiviral medications

E. Hemosorption, vitamin therapy

65. Patient B., 38 years, has been abusing alcohol for half a year. During palpation a moderate liver enlargement is detected, spleen is not enlarged. No free fluid in the abdominal cavity. During a biochemical analysis of blood there is: ALT, AST, bilirubin, blood triglycerides — normal; insignificant increase of γ -glutamyltranspeptidase. During sonography — moderate enlargement of liver, structure is homogeneous, increased echogenicity. Your diagnosis?

A. Chronic alcoholic hepatitis with minimal activity.

B. Fatty hepatosis of alcohol etiology. +

C. Alcoholic liver cirrhosis.

D. Nonspecific reactive hepatitis.

E. Liver amyloidosis.

66. Patient's illness was diagnosed as a chronic hepatitis with manifestations of cholestasis with a mild activity. Which of the prescriptions is indicated for the patient?
- A. Cholagogues.
 - B. Glucocorticoids.
 - C. Vitamins.
 - D. Ursodeoxycholic acid. +
 - E. Hepatoprotectors based on phospholipids.
67. Patient G. is suspected of having transition of a chronic hepatitis into hepatic cirrhosis. This suspicion could be based on:
- A. Detection of positive markers of hepatitis C virus.
 - B. Detection of bilirubinemia.
 - C. Detection of hypercholesterolemia.
 - D. Detection of diffuse changes of the liver at sonography. +
 - E. Detection of esophageal varicose veins dilatation.
68. Patient C. has a chronic hepatitis. What pain characteristic is more typical of this disease?
- A. Cramping pains in the right part of abdomen.
 - B. Stinging pains in the right hypochondrium.
 - C. Compressing pains in epigastric region and right hypochondrium.
 - D. Nagging pains, heaviness in the right hypochondrium. +
 - E. Burning sensation in the upper part of abdomen.
69. Patient R. has alcoholic cirrhosis of the liver with significant portal hypertension. Choose the medicine for treatment of a portal hypertension.
- A. Verospiron. +
 - B. Sulfanilamide.
 - C. Medicines of a nitrofurantoin range.
 - D. Glucocorticosteroids.
 - E. Hepatoprotectors.
70. Patient with hepatic cirrhosis has lethargy, weakness, nausea, disturbance of sleep at night time and sleepiness at day, sweetish smell from mouth. Manifestation of what syndrome is this?
- A. Cholestatic.
 - B. Hyperazotemia. +
 - C. Cytolytic.
 - D. Portal hypertension.
 - E. Hypersplenism.
71. Patient suffering from a chronic hepatitis had a regular examination where change of liver palpatory properties was detected: it has become denser, than 5-6 months ago, edge became sharp, but size of liver hasn't changed. What can the change of results of liver palpation be evidence of?
- A. Development of portal hypertension.
 - B. Increasing of necrosis of hepatocytes.
 - C. Joining of cholestasis.

- D. Transformation of chronic hepatitis into hepatic cirrhosis. +
E. Hepatotoxic influence of medicines.
72. 47 y.o. patient complains of intensive skin itching, jaundice, bone pain. The skin is hyperpigmented. There are multiple xanthelasma palpebrae. The liver is +6 cm enlarged, solid with acute edge. The blood analysis revealed total bilirubin -160 $\mu\text{mol/L}$, direct - 110 $\mu\text{mol/L}$, AST- 2,1 mmol/L , ALT- 1,8 mmol/L , alkaline phosphatase - 4,6 mmol/L , cholesterol- 9,2 mmol/L , antimitochondrial antibodies M2 in a high titer. What is the probable diagnosis?
- A. Primary biliary liver cirrhosis +
B. Primary liver cancer
C. Chronic viral hepatitis B
D. Acute viral hepatitis B
E. Alcoholic liver cirrhosis
73. A 40 y.o. patient was admitted to the gastroenterology with skin itching, jaundice, discomfort in the right subcostal area, generalized weakness. On examination: skin is jaundiced, traces of scratches, liver is +5 cm, spleen is 6x8 cm. In blood: alkaline phosphatase - 2,0 $\text{mmol}/(\text{hour} \cdot \text{L})$, general bilirubin - 60 $\mu\text{mol/L}$, cholesterol - 8,0 mmol/L . What is the leading syndrome in the patient?
- A. Cholestatic +
B. Cytolytic
C. Mesenchymal inflammatory
D. Asthenic
E. Liver-cells insufficiency
74. Patient with liver cirrhosis has the following in blood: erythrocytes — 2,8 T/L, leukocytes — 3,3 G/L, thrombocytes — 100000 in 1ml of blood. Of which syndrome is it typical?
- A. Cytolytic.
B. Cholestatic.
C. Hyperazotemia.
D. Hypersplenism.+
E. Portal hypertension.
75. A 48-year-old patient complains of heaviness in the right hypochondrium, itching of the skin. He had been treated in infectious diseases hospital repeatedly due to jaundice and itch. On physical exam: meteorism, ascitis, dilation of abdominal wall veins, protruded umbilicus, spleen enlargement. What can be diagnosed in this case?
- A. Liver cirrhosis +
B. Cancer of the liver
C. Cancer of the head of pancreas
D. Gallstones
E. Viral hepatitis B
76. Patient's illness was diagnosed as cirrhosis of liver with manifestations of cholestasis with a mild activity. Which of the prescriptions is indicated for the patient?
- A. Cholagogues.

- B. Glucocorticoids.
C. Vitamins.
D. Ursodeoxycholic acid. +
E. Hepatoprotectors based on phospholipids.
77. Patient G. is suspected of having transition of a chronic hepatitis into hepatic cirrhosis. This suspicion could be based on:
A. Detection of positive markers of hepatitis C virus.
B. Detection of bilirubinemia.
C. Detection of hypercholesterolemia.
D. Detection of diffuse changes of the liver at sonography.+
E. Detection of esophageal varicose veins dilatation.
78. Patient P., 60 years old, suffers from hepatic cirrhosis in the outcome of a viral C hepatitis. The detection of the disease stage according to Child-Pugh was done to reveal indications for the liver transplantation. Sum of points — 9. What stage of hepatic cirrhosis does the patient have?
A. Stage A-I.
B. Stage A-II.
C. Stage A-III.
D. Stage B. +
E. Stage C.
79. Patient R. has alcoholic cirrhosis of the liver with significant portal hypertension. Choose the medicine for treatment of a portal hypertension.
A. Verospiron. +
B. Sulfanilamide.
C. Medicines of a nitrofurane range.
D. Glucocorticosteroids.
E. Hepatoprotectors
80. A patient having a chronic pancreatitis for many years, was tested and an increase of sugar up to 6,8 mmol/l in blood was found. What can these changes be explained?
A. Intoxication syndrome.
B. Incretory insufficiency of a pancreas. +
C. Calcinosi of a pancreas.
D. Malabsorption and maldigestion syndrome.
E. Cachexia.
81. A woman, 42 y.old, entered the gastroenterological department with a chronic relapsing pancreatitis in an exacerbation stage, suffering from the disease for 3 years. But during a physical examination and by the data of US, a hepatosplenomegaly and ascites were found for the first time. With the appearance of what syndrome can the course of this disease be explained?
A. Pain abdominal syndrome.
B. Endocrine damage syndrome.
C. Exocrine insufficiency syndrome.
D. Portal vein compression syndrome.+

E. Toxic syndrome.

82. A patient 42 y.o., having gallbladder disease in the history, began to have sudden pain in the left hypochondria, after meal, frequent watery stool, alternating with constipations, with undigested food in faces. Skin and visible mucous membranes are of regular color, T – 36,7⁰C, pulse – 68 bpm, BP – 130/80 mmHg, palpation – pain in the left hypochondria and epigastric region. Presence of what disease does these changes show?

- A. Biliary pancreatitis. +
- B. Exacerbation of chronic calculus cholecystitis.
- C. Gastric ulcer.
- D. Ulcer of duodenum.
- E. Chronic colitis, exacerbation.

83. A patient 37 y.o., admitted to the gastroenterological department and had a diagnosis of a chronic pancreatitis, exacerbation. During the examination the patient was had a biochemical blood analysis for the exclusion of ferment's «deviation» into blood. Which of the given data reflects this process?

- A. Serum elastase.+
- B. Blood urea.
- C. Blood creatinine.
- D. Blood bilirubin.
- E. Blood albumin.

84. A patient K., 56 y.old, is troubled by pains of left hypochondria after meal, frequent watery stool. What's the preliminary diagnosis can be given to the given patient?

- A. Chronic gastritis, exacerbation.
- B. Myocardial infarction.
- C. Gastric ulcer, exacerbation.
- D. Chronic pancreatitis, exacerbation. +
- E. Chronic cholelithiasis, exacerbation.

85. 4 hours after having meals a patient with signs of malnutrition and steatorrhea experiences stomach pain, especially above navel and to the left of it. Diarrheas take turns with constipation lasting up to 3-5 days. Palpation reveals moderate painfulness in the choledochopancreatic region. The amylase rate in blood is stable. X-ray reveals some calcifications located above navel. What is the most likely diagnosis?

- A. Chronic pancreatitis +
- B. Chronic gastroduodenitis
- C. Duodenal ulcer
- D. Zollinger-Ellison syndrome
- E. Chronic calculous cholecystitis

86. A 75 year old man who has been suffering from diabetes for the last six months was found to be jaundiced. He was asymptomatic except for weight loss at the rate of 10 pounds in 6 months. Physical examination revealed a hard, globular, right upper quadrant mass that moves during respiration. A CT scan shows enlargement of the head of the pancreas, with no filling defects in the liver. The most likely diagnosis is:

- A. Carcinoma of the head of the pancreas +
- B. Infectious hepatitis
- C. Haemolytic jaundice
- D. Malignant biliary stricture
- E. Metastatic disease of liver

87. A 45 y.o. man has complained of having epigastric and right subcostal aching pain, indigestion, dark color of the urine and acholic stool, fever and significant weight loss for 1 month. On examination: jaundice, presence of Curvassier's sign. US scan did not reveal stones in the gallbladder and choledochus. What is the most likely diagnosis?

- A. Cancer of the pancreas head +
- B. Gallbladder stones
- C. Chronic pancreatitis
- D. Chronic cholangitis
- E. Chronic hepatitis

88. A 68 year old patient has been suffering from chronic pancreatitis for 35 years. During the last 5 years he has been observing abatement of pain syndrome, abdominal swelling, frequent defecations up to 3-4 times a day (feces are greyish, glossy, with admixtures of undigested food), and progressive weight loss. Change of symptom set is caused by joining of:

- A. Exocrine pancreatic insufficiency
- B. Endocrine pancreatic insufficiency
- C. Syndrome of lactase deficiency
- D. Irritable bowels syndrome
- E. Chronic enterocolitis +

89. A 56 y.o. man, who has taken alcoholic drinks regularly for 20 years, complains of intensive belt pain in the abdomen. Profuse no formed stool 2-3- times a day has appeared for the last 2 years, loss of weight for 8 kg for 2 years. On examination: abdomen is soft, painless. Blood amylase – 120U/L. Feces examination-neutral fat 15 g per day, starch grains. What is the most reasonable treatment at this stage?

- A. Pancreatine +
- B. Contrykal
- C. Aminocapron acid
- D. Levomicytine
- E. Imodium

IV Forms of individual work performance:

- Report essay on practical class;
- A clinical examination of the thematic patient with atypical or severe disease in the practical lesson;
- Report on the conference of the Department of Clinical base;
- Review of new methods of diagnosis and treatment in gastroenterology
- Review of materials of conferences of students and young scientists.

Recommended resources:

1. Gyawali CP, Kahrilas PJ, Savarino E, et al. Modern diagnosis of GERD: the Lyon Consensus. *Gut* 2018; 67:1351-62. doi:10.1136/gutjnl-2017-314722 pmid:29437910
2. Sandhu D.S., Fass R. Current Trends in the Management of Gastroesophageal Reflux Disease / *Gut Liver*, 2018 Jan; 12(1): 7–16.
3. Malfertheiner P, Megraud F, O’Morain C et al Management of Helicobacter pylori infection – the Maastricht V / Florence Consensus Report // *Gut*. – 2017. – Vol.66. – P. 6-30
4. Managing peptic ulcer in adults. Nice Pathways 2019.
5. NICE guideline. Crohn’s disease: management 2019 <https://www.nice.org.uk/guidance/ng129>
6. NICE guideline. Ulcerative colitis: management 2019 <https://www.nice.org.uk/guidance/ng130>
7. Norah A. Terrault, Anna S.F. Lok, Brian J. McMahon. Update on Prevention, Diagnosis, and Treatment of Chronic Hepatitis B: AASLD 2018 Hepatitis B Guidance // *Hepatology*.- 2018.- Vol. 67, No. 4. - P. 1560-1599.
8. American Association for the Study of Liver Diseases; Infectious Diseases Society of America. HCV guidance: recommendations for testing, managing, and treating hepatitis C. May 2018. <https://www.hcvguidelines.org/>
9. EASL Clinical Practice Guidelines for the management of patients with decompensated cirrhosis / *Journal of Hepatology*. – 2018.- Vol. 69, issue 2. - P. 406-460.
10. Recommendations from the United European Gastroenterology evidence-based guidelines for the diagnosis and therapy of chronic pancreatitis // *Pancreatology*. – 2018; 18 (8):847-854. doi: 10.1016/j.pan.2018.09.016.