



Ministry of Education and Science of Ukraine
Sumy State University
Academic and Research Medical Institute

5620 Methodological instructions
for practical classes
on the subject «**Internal medicine**»
(*module 1 «Basic principles of internal medicine:
gastroenterology, pulmonology, hematology*)
for the students of speciality 222 «*Medicine*»

Sumy
Sumy State University
2023

Methodological instructions for practical classes on the subject «Internal medicine» (module 1 «Basic principles of internal medicine: gastroenterology, pulmonology, hematology») for the students of speciality 222 «Medicine» / N. G. Kuchma, A. V. Kovchun, I. O. Dudchenko, L. N. Prystupa. – Sumy : Sumy State University, 2023. – 48 p.

Internal medicine department with respiratory medicine center ARMI

Module 1. Basic principles of internal medicine: gastroenterology, pulmonology, hematology

Topic 1. Gastroesophageal reflux disease. Dyspepsia. Chronic gastritis

Time frame – 4 hours.

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with gastroesophageal reflux disease (GERD), functional dyspepsia and chronic gastritis.

Students should know: definition, etiology, pathogenesis of GERD. The role of gastroesophageal reflux in the development of esophagitis and Barrett's esophagus. Classification. Erosive and non-erosive GERD. Clinical manifestations depending on the variant and stage. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy from the standpoint of evidence-based medicine. Primary and secondary prevention. Dyspepsia: definition, etiology, pathogenesis. Classification. Diagnostic criteria. Differential diagnosis. Treatment tactics from the standpoint of evidence-based medicine. Prevention, prognosis and working capacity. Chronic gastritis: definition, etiology, pathogenesis. The role of H. pylori in the development of chronic gastritis. Classification. Non-atrophic and atrophic gastritis. The importance of endoscopic and X-ray examination for diagnosis. Approaches to the treatment of various types of chronic gastritis from the position of evidence-based medicine. Prevention. Forecast and performance.

Students should be able to:

- Justify the use of the main invasive and non-invasive diagnostic methods used in the diagnosis of diseases of the upper gastrointestinal tract (GERD, functional dyspepsia, chronic gastritis).
- To determine the etiological and pathogenetic factors of the development of GERD, functional dyspepsia, chronic gastritis.
- Identify the main variants of the course and complications of GERD.
- Identify "red flag" symptoms in functional dyspepsia.
- Draw up an examination plan for a patient with GERD, functional dyspepsia and chronic gastritis.
- Interpret the results of laboratory and instrumental research methods.
- Prescribe treatment, carry out primary and secondary prevention for GERD, functional dyspepsia and chronic gastritis.

Examples of Tests

1. What can be explored contrast radiology of the gastrointestinal tract?

- | | |
|--------------------------------|---|
| A. Detecting filling defects | C. Motility disorder |
| B. Detecting polycystic kidney | D. Detecting strictures, erosions, ulcers |

2. For which of the following is there evidence of efficacy in the treatment of functional dyspepsia?

- | | |
|---------------|--------------------------|
| A. Probiotics | C. Acupuncture |
| B. Homeopathy | D. Stool transplantation |

3. Which of the following procedures is crucial for the diagnosis of functional dyspepsia?

- A. 24-h esophageal pH monitoring
- B. Esophagogastroduodenoscopy
- C. H₂ breath test with lactose
- D. Manometry

4. Which of the following describes Barrett's esophagus?

- A. pre-malignant glandular metaplasia of the lower esophagus
- B. this is a cancer of esophagus
- C. it can be redness, bleeding ulceration with stricture formation in esophagus
- D. it is an adenocarcinoma of stomach

5. Which of the below is not H₂ - antagonist:

- A. Ranitidine
- B. Cimetidini
- C. Omeprazole
- D. Famotidini

Answers: 1. A, C, D; 2. C; 3. B; 4. A; 5. C.

Questions

1. List the main complaints in patients with gastrointestinal problems.
2. Heartburn, regurgitation, flatulence: definition and diseases that associated with them.
3. Causes of nausea and vomiting.
4. Name important factors in the assessment of abdominal pain.
5. What do you know about etiology of GERD?
6. What is it hiatus hernia?
7. What foods can cause symptoms gastro-esophageal reflux?
8. What clinical picture is inherent in patients with GERD?
9. What tests are done to confirm or rule out GERD?
10. List complications in patients with GERD.
11. What is Barrett's esophagus? Give definition, clinical presentation and management.
12. Esophageal stricture as a complication GERD. Clinical picture, diagnosis and management.
13. Examination plan for suspected GERD patients.
14. Give define chronic gastritis.
15. Describe different types of gastritis.
16. Define the terms "organic dyspepsia" and "functional dyspepsia".
17. List Rome IV criteria for functional dyspepsia.
18. Name indications and contraindications to endoscopy.
19. What endoscopic changes are characteristic of GERD.
20. What endoscopic change are characteristic of chronic gastritis.
21. What is esophageal 24-hour pH metry. What is the clinical significance of this method?
22. What are antacids and acid suppression medications?
23. Therapeutic Management patient with GERD.
24. Therapeutic Management patient with gastritis.
25. The first, second and third line of treatment patient with functional dyspepsia.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with GERD, functional dyspepsia or chronic gastritis	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
2. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016.
3. Essential Practical Skills in Internal Medicine [Электронный ресурс] / T. Pertseva. – 2021 <https://openeducationalberta.ca/mlsci/>
4. Guidelines for the Diagnosis and Management of Gastroesophageal Reflux Disease (2018) https://journals.lww.com/ajg/Fulltext/2013/03000/Guidelines_for_the_Diagnosis_and_Management_of.6.aspx
5. Clinical Guideline: Management of Dyspepsia (2017) https://journals.lww.com/ajg/fulltext/2017/07000/ACG_and_CAG_Clinical_Guideline_Management_of.10.aspx
6. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier ; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham : Springer International Publishing, 2017. – XIX, 225 p.
7. Internal medicine [Текст] = Внутрішня медицина: textbook. P. 2: Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / К. М. Amosova, О. Ya. Babak, I. P. Katerenchuk et al.; eds.: M. A. Stanislavchuk, V. K. Sierkova. – Vinnytsya: Nova Knyha, 2019. – 360 p.

Topic 2. Peptic ulcer and other peptic ulcers of the stomach and duodenum

Time frame – 2 hours.

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with peptic ulcer of the stomach and duodenum.

Students should know: Definition. The role of *H. pylori*, acid-peptic factor and medications in the occurrence of peptic ulcers and their recurrences. Peculiarities of the course of H.p-positive and H.p-negative ulcers. Complications (perforation, penetration, bleeding, stenosis and malignancy). The value of instrumental and laboratory diagnostic methods. Methods of diagnosing H.p-infection. Modern tactics of managing a patient with peptic ulcer. Eradication therapy. Eradication control. Drug therapy of H.p-negative ulcers. Indications for surgical treatment. Primary and secondary prevention.

Students should be able to:

- Conduct interviews and physical examinations of patients with peptic ulcer and PPI.
- Justify the use of the main invasive and non-invasive diagnostic methods used in the diagnosis of peptic ulcers.
- Determine the etiological and pathogenetic factors of the development of peptic ulcers.
- Identify the main variants of the course and complications of peptic ulcer disease and PPI.
- Draw up a plan for the examination of patients with gastric ulcer and PPD.
- The role of endoscopic methods and biopsy to confirm the diagnosis of peptic ulcer disease and PPI.
- Prescribe treatment, carry out primary and secondary prevention for peptic ulcers of the stomach and duodenum

Examples of Tests

1. NSAID-induced ulcers differ from H. pylori-associated ulcers in that patients with an NSAID-induced ulcer are more likely to have:

- A. Gastric cancer
- B. Ulcer-related epigastric pain
- C. More severe upper gastrointestinal bleeding
- D. A duodenal ulcer

2. Which epithelium do H. pylori exclusively colonize?

- A. Duodenum-type epithelium
- B. Intestine-type epithelium
- C. Esophagus
- D. Gastric-type epithelium

3. Antimicrobial resistance to H. pylori is most likely to occur with which of the following agents?

- A. Metronidazole and clarithromycin
- B. Amoxicillin and tetracycline
- C. Clarithromycin and tetracycline
- D. Metronidazole and amoxicillin

4. All that increase risk of peptic ulcer disease, except:

- A. Anticoagulant therapy
- B. Corticosteroid drug
- C. NSAID therapy
- D. Age < 60 years

5. The preferred management of a 70-year-old woman with rheumatoid arthritis who is at risk of developing an NSAID-induced ulcer or ulcer-related complication is:

- A. Pantoprazole 40 mg daily
- B. Misoprostol 100 µg twice daily
- C. Famotidine 40 mg twice daily
- D. Omeprazole 40 mg twice daily

Answers: 1. C; 2. D; 3. A; 4. D; 5. A.

Questions

1. Give the definition of peptic ulcer disease (PUD).
2. Name differences between erosions and ulcer.

3. What are common causes of PUD?
4. What is Helicobacter pylori infection.
5. Diagnostic tests for identification H.pylori
6. Explain how NSAID use associated with a fourfold risk of developing PUD.
7. Clinical presentation in patients with PUD.
8. Give a description “silent ulcer”.
9. Diagnostic approach for suspected PUD.
10. Which symptoms set you thinking about complications, i.e., penetration and perforation?
11. Which symptoms set you thinking about malignancy?
12. Differentiating between benign and malignant gastroduodenal ulcers.
13. Specialized laboratory studies: fasting serum gastrin and secretin stimulation test.
14. What is H. pylori test-and-treat strategy?
15. Medical treatment of PUD.
16. How many recommended durations of acid suppression for PUD?
17. Management of critical complications of PUD.
18. Name indications for surgical treatment for PUD?

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with peptic ulcer disease	45	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	20	control questions	Study room, online - using google meet

References.

1. Davidson’s Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
2. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016.
3. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham: Springer International Publishing, 2017. – XIX, 225 p.
4. Internal medicine [Текст] = Внутрішня медицина: textbook. Р. 2: Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / К. М. Amosova, О. Ya. Babak, I. P. Katerenchuk et al.; eds.: M. A. Stanislavchuk, V. K. Sierkova. – Vinnytsya: Nova Knyha, 2019. – 360 p.

Topic 3. Biliary diseases: cholelithiasis, chronic cholecystitis and functional biliary disorders

Time frame – 6 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with biliary tract disease, chronic cholecystitis and functional biliary disorders.

Students should know: Definition. Etiology, pathogenesis. The importance of infection, motility disorders, and dyscholia in the development of chronic cholecystitis, cholangitis, and gallstone disease. Features of the clinical course. The role of instrumental methods in diagnostics. Differential diagnosis. Complication. Differentiated treatment depending on the clinical variant and the presence of complications from the standpoint of evidence-based medicine. Indications for surgical treatment. Primary and secondary prevention. Forecast and performance.

Management of the patient in the conditions of a pandemic.

Students should be able to:

- Conduct interviews and physical examinations of patients with diseases of the gallbladder and biliary tract.
- Justify the use of basic invasive and non-invasive diagnostic methods used to diagnose diseases of the gallbladder and biliary tract.
- Determine the etiological and pathogenetic factors contributing to the occurrence of gallstone disease, dyskinesia of the biliary tract.
- Identify the main variants of the course and complications of diseases of the gallbladder and biliary tract.
- Draw up an examination plan for patients with diseases of the gallbladder and biliary tract.
- Carry out differential diagnosis, justify and formulate a diagnosis in diseases of the gallbladder and biliary tract.
- Prescribe treatment, carry out primary and secondary prevention for diseases of the gallbladder and biliary tract.

Examples of Tests

1. The primary components of bile are all of the following except:

- | | |
|----------------|---------------|
| A. Water | C. Bile salts |
| B. Cholesterol | D. Glucose |

2. Risk factors for developing gallstones include all except

- | | |
|------------------|------------------------|
| A. Obesity | C. Age over 40 |
| B. Fasting often | D. Taking testosterone |

3. The most common gallstones in the World are

- | | |
|------------------|------------------|
| A. Cholesterol | C. Brown pigment |
| B. Black pigment | D. Crystals |

Answers: 1. D; 2. D; 3. A;

Questions

1. Give a definition of cholelithiasis and cholangiolithiasis
2. Give a definition of acute cholecystitis and acute cholangitis

3. Name risk factors and mechanism for cholesterol gallstones.
4. What can you say about black and brown pigment stones mechanism formation (risk factors).
5. Name four F`s risk factors of gallstone disease.
6. Clinical features of cholelithiasis and cholangiolithiasis.
7. Clinical features cholecystitis and cholangitis.
8. What is this biliary sludge?
9. What is this Reynolds pentads?
10. Methods of diagnosis of gallstone disease. Right upper quadrant ultrasound.
11. What are the diagnostic possibilities of ERCP?
12. Additional imaging studies of gallstone disease.
13. Differential diagnoses of gallbladder pathology.
14. Initial supportive therapy of acute biliary disease
15. Nonoperative management of cholelithiasis.
16. What is this oral bile acid dissolution therapy?
17. What is this extracorporeal shock wave lithotripsy?

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with diseases of gallbladder and bile ducts	200	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
2. Chapman MH, Thorburn D, Hirschfield GM, et al. British Society of Gastroenterology and UKPSC guidelines for the diagnosis and management of primary sclerosing cholangitis. Gut. 2019 Aug;68(8):1356-1378. <https://gut.bmj.com/content/68/8/1356>
3. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham: Springer International Publishing, 2017. – XIX, 225 p.
4. Bile Acids in Gastroenterology [Электронный ресурс] : Basic and Clinical / edited by Susumu Tazuma, Hajime Takikawa. – 1st ed. 2017. – Tokyo: Springer Japan, 2017. – VIII, 209 p. 39 illus., 20 illus. in color.
5. Internal medicine [Текст] = Внутрішня медицина: textbook. Р. 2: Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / К. М. Amosova, О. Ya. Babak, I. P. Katerenchuk et al.; eds.: М. А. Stanislavchuk, V. K. Sierkova. – Vinnytsya : Nova Knyha, 2019. – 360 p.

Topic 4. Chronic diseases of the small intestine: celiase disease and other enteropathies

Time frame – 4 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with diseases of the small intestine.

Students should know: Definition. Etiology, pathogenesis. The role of intolerance of food components, enzymopathies and immune factors. Syndromes of malabsorption and maldigestion. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy from the standpoint of evidence-based medicine. Primary and secondary prevention. Forecast and performance. Patient management in pandemic conditions.

Students should be able to:

- Conduct interviews and physical examinations of patients with diseases of the small intestine.
- To justify the use of the main invasive and non-invasive diagnostic methods used to diagnose diseases of the small intestine.
- Determine the etiological and pathogenetic factors of the development of celiac disease, lactose intolerance and other enteropathies.
- Identify the typical clinical picture of diseases of the small intestine.
- Identify the main variants of the course and complications of diseases of the small intestine.
- To draw up a plan for the examination of patients with diseases of the small intestine.
- Carry out differential diagnosis, substantiate and formulate a diagnosis for the main diseases of the small intestine.
- Prescribe treatment, carry out primary and secondary prevention of diseases of the small intestine.

Examples of Tests

1. Which food is recommended to stimulate peristaltic of the bowel, except:

- | | |
|---------------|--------------|
| A. beet roots | D. cheese |
| B. carrots | E. rye bread |
| C. plums | |

2. Enzyme preparation must be taken:

- | | |
|----------------|----------------|
| A. before meal | C. after meal |
| B. with food | D. at bed time |

3. Dosing regimen of furasolidon:

- A. 0,1 g 4 times a day 5 – 10 days
- B. 0,5 g 4 times a day 5 – 10 days
- C. 0,1 g 4 times a day 2 – 3 days
- D. 0,5 g 4 times a day 2 – 3 days

Answers: 1. D; 2. B; 3. A.

Questions

1. Give the definition of Coeliac disease.
2. Give etiology and pathogenesis of Coeliac disease.
3. What is T-cells? (Enzyme tissue transglutaminase – TTG)
4. Give epidemiology of Coeliac disease.
5. Clinical features in infants and adults.
6. Investigations in patients with Coeliac disease. (Gold standard and other investigations).
7. Name treatment in patient with Coeliac disease.
8. Name complications in patient with Coeliac disease.
9. Give definition, etiology, clinical presentation and treatment in patient with Lactose intolerance.
10. Give definition, etiology, clinical presentation and treatment in patient with Tropical sprue.
11. Give causes of small bacterial overgrowth.
12. Investigations and treatment in patient with small bacterial overgrowth.
13. Whipple's disease: definition, pathomorphology, clinical presentation, treatment.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with diseases of small intestine	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Al-Toma A, Volta U, Auricchio R, et al. European Society for the Study of Coeliac Disease (ESsCD) guideline for coeliac disease and other gluten-related disorders. *United European Gastroenterol J.* 2019 Jun;7(5):583 <https://journals.sagepub.com/doi/full/10.1177/2050640619844125>
2. Arasaradnam RP, Brown S, Forbes A, et al. Guidelines for the investigation of chronic diarrhoea in adults: British Society of Gastroenterology, 3rd edition. *Gut.* 2018 Apr <http://gut.bmj.com/content/early/2018/04/13/gutjnl-2017-315909>
3. Davidson's Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
4. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016.
5. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier ; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham : Springer International Publishing, 2017. – XIX, 225 p.

Topic 5. Chronic diseases of the colon: ulcerative colitis, Crohn's disease, irritable bowel disease

Time frame – 6 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with ulcerative colitis, Crohn's disease and irritable bowel syndrome.

Students should know: inflammatory bowel diseases (ulcerative colitis and Crohn's disease): definition, etiology, and pathogenesis. Irritable bowel syndrome. Classification. Features of the clinical course depending on the degree of activity, severity and phase of the course. Diagnostic criteria. Differential diagnosis. Treatment from the standpoint of evidence-based medicine. Complications and diseases associated with ulcerative colitis (sclerosing cholangitis, spondylitis, dermatosis arthritis). Irritable bowel syndrome: definition, diagnostic criteria. Etiology and pathogenesis. Classification. Clinical manifestations of different options. Diagnostic criteria and criteria for excluding the diagnosis. Differential diagnosis. Treatment of various forms from the standpoint of evidence-based medicine. Primary and secondary prevention. Forecast and performance. Management of a patient with colon disease in pandemic conditions.

Students should be able to:

- Conduct interviews and physical examinations of patients with diseases of the large intestine.
- Justify the use of the main invasive and non-invasive diagnostic methods used to diagnose diseases of the large intestine.
- Determine etiological and pathogenetic factors of inflammatory bowel diseases and irritable bowel syndrome.
- Identify the typical clinical picture of inflammatory bowel diseases and irritable bowel syndrome.
- Identify the main variants of the course and complications of inflammatory bowel diseases and irritable bowel syndrome.
- Draw up an examination plan for patients with inflammatory bowel diseases and irritable bowel syndrome.
- Carry out differential diagnosis, substantiate and formulate a diagnosis of inflammatory bowel diseases and irritable bowel syndrome.
- Prescribe treatment, carry out primary and secondary prevention for inflammatory bowel diseases and irritable bowel syndrome.

Examples of Tests

1. According to Mayo classification ulcerative colitis stage 2 (moderate disease) include all, except

- A. obvious rectal bleeding
- B. moderate PGA
- C. Involves 5 stools per day more than normal
- D. moderate PGA

2. Which one of the following medications would be contraindicated in a pregnant patient with Crohn disease?

- A. Methotrexate
- B. Budesonide
- C. Sulfasalazine
- D. Infliximab

3. Which medication is most appropriate for quickly suppressing inflammation in patients with moderately active UC?

- A. Balsalazide
- B. 5-aminosalicylic acid
- C. Methotrexate
- D. 6-mercaptopurine

Answers:1.C; 2. A; 3. B.

Questions

1. Give the definition of irritable bowel syndrome.
2. Etiology and pathogenesis of irritable bowel syndrome.
3. Rome IV Diagnostic Criteria for Irritable Bowel Syndrome (IBD)
4. Name instrumental findings to patients with presumptive irritable bowel syndrome, according to age.
5. Name dietary therapy in patient with irritable bowel syndrome.
6. What is FODMAPs diet?
7. Pharmacological treatment in patients with irritable bowel syndrome.
8. Give the definition of ulcerative colitis.
9. Give the definition of Crohn's disease
10. Name the etiology and pathogenesis of ulcerative colitis
11. Name the etiology and pathogenesis of Crohn's disease
12. Intestinal and extraintestinal manifestations of ulcerative colitis
13. What pathognomonic syndrome is characteristic of ulcerative colitis?
14. Intestinal and extraintestinal manifestations of Crohn's disease
15. The role of endoscopic research methods at IBD
16. Mayo classification ulcerative colitis.
17. Crohn's Disease Activity Index (CDAI).
18. What endoscopic findings are characteristic of ulcerative colitis?
19. what endoscopic findings are characteristic of Crohn's disease?
20. What changes in laboratory parameters are typical for patients with IBD.
21. What is a stool analysis for calprotectin and lactoferrin?
22. 5-ASA drug in the treatment of IBD.
23. Glucocorticoids in the treatment of IBD.
24. Immunosuppressive therapy in the treatment of IBD.
25. Biological therapy in the treatment of IBD.
26. Indications for surgical treatment IBD.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with inflammatory bowel disease	200	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Adamina M, Bonovas S, Raine T, et al. ECCO guidelines on therapeutics in Crohn's disease: surgical treatment. *J Crohns Colitis*. 2019 Nov 19. pii: jjz187. <https://academic.oup.com/eccoajcc/advance-article/doi/10.1093/ecco-jcc/jjz187/5631809>
2. Davidson's Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
3. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016.
4. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier ; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham : Springer International Publishing, 2017. – XIX, 225 p.
5. European Evidence-based Consensus on the Diagnosis and Management of Crohn's Disease 2016: Part 1: Diagnosis and Medical Management/ Fernando Gomollón and other. – *Journal of Crohn's and Colitis*, Volume 11, Issue 1, 1 January 2017, Pages 3–25.
6. Feuerstein, Joseph D.Chachu, Karen et al. AGA Clinical Practice Guidelines on the Management of Moderate to Severe Ulcerative Colitis. *Gastroenterology*, 2020 Apr; 158(5):1450-1461. <https://doi.org/10.1053/j.gastro.2020.01.006>
7. WGO Practice Guideline - Irritable Bowel Syndrome (IBS) Irritable Bowel Syndrome: a Global Perspective (2015) <http://www.worldgastroenterology.org/guidelines/global-guidelines/irritable-bowel-syndrome-ibs>

Topic 6. Chronic Hepatitis

Time frame – 4 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with chronic hepatitis.

Students should know: Definition. Classification. The role of viral persistence, drug agents, immune disorders, and alcohol. Methods of diagnosis of viral infection. Autoimmune hepatitis, chronic viral, drug-induced hepatitis. Basic clinical and biochemical syndromes. Features of the clinical course and diagnosis of individual forms. Importance of morphological, biochemical and radioisotope methods. Differential diagnosis. Complication. Features of treatment of various forms. Primary and secondary prevention. Forecast and performance. Management of a patient with chronic hepatitis in pandemic conditions

Students should be able to:

- Conduct surveys and physical examinations of patients with liver diseases.
- Justify the use of basic invasive and non-invasive diagnostic methods for the diagnosis of hepatitis.
- Determine the etiological and pathogenetic factors of the development of chronic hepatitis.
- Identify the typical clinical picture of chronic hepatitis.
- Identify the main variants of the course and complications of chronic hepatitis.

- Draw up an examination plan for patients with chronic hepatitis.
- Carry out differential diagnosis, substantiate and formulate a diagnosis for chronic hepatitis.
- Prescribe treatment, carry out primary and secondary prevention of chronic hepatitis.

Examples of Tests

1. Which of these things can cause hepatitis?

- A. Viruses
- B. Medicines and alcohol
- C. Immune system that's not working as it should
- D. All of the above

2. The disease exists in short-term (acute) and long-term (chronic) forms.

How long does acute hepatitis last?

- | | |
|-----------------------|------------------|
| A. Less than 6 months | C. About 6 weeks |
| B. Less than 3 months | D. 1 month |

3. What are the symptoms of hepatitis?

- | | |
|------------------------|---------------------|
| A. Tiredness (fatigue) | C. Nausea |
| B. Low fever | D. All of the above |

4. Which form of hepatitis can be passed on through contaminated food or water?

- | | |
|------|---------------------|
| A. B | C. A and E |
| B. C | D. All of the above |

5. A blood test can confirm hepatitis. Doctors look for an elevated amount of which of these?

- | | |
|----------------------|------------------|
| A. White blood cells | C. Interferon |
| B. Calcium | D. Liver enzymes |

Answers:

- 1.D; 2. C; 3. D; 4.C; 5. D

Questions

1. Definition of chronic hepatitis.
2. Etiology and pathogenesis of chronic hepatitis.
3. Classification of chronic hepatitis.
4. Chronic hepatitis B: mode of transmission, characterize the onset of the disease, characterize viral replication phase.
5. Name consequences of acute delta infection.
6. How can you confirm the diagnosis hepatitis C?
7. Name dosing regimen of prednisone, mercaptopurine, azathioprine in patient with chronic hepatitis.
8. Give the definition and etiology of autoimmune hepatitis; characterize the onset of the disease.
9. Laboratory changes in patient with autoimmune hepatitis.
10. Examination and extrahepatic features in patient with autoimmune hepatitis.
11. Name differences between type I and II in patient with autoimmune hepatitis.
12. Name treatment of active viral replication in patient with chronic hepatitis B.
13. How many patients may be cured of HBV infection and how can you confirm this fact?
14. Name nucleoside analogs to treat patients with HBV infection.

15. How will you prescribe interferon to patient with HDV infection?
16. How will you prescribe interferon to patient with HCV infection?
17. Name side-effects of α -interferon.
18. Name contraindications to prescription α -interferon.
19. Name possible consequences of hepatitis.
20. Give clinical features in patients with alcoholic hepatitis.
21. Name laboratory findings in patients with alcoholic hepatitis.
22. What can you see in liver biopsy in patients with alcoholic hepatitis?
23. Name instrumental findings which will you prescribe to patients with alcoholic hepatitis and their aims.
24. Name complications in patients with alcoholic hepatitis.
25. Treatment in patients with alcoholic hepatitis.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with chronic hepatitis	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016.
2. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham: Springer International Publishing, 2017. – XIX, 225 p. <https://www.merckmanuals.com/professional/hepatic-and-biliary-disorders/hepatitis/https://gi.org/clinical-guidelines/clinical-guidelines-sortable-list/>
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Topic 7. Liver cirrhosis

Time frame – 6 hours

The general goal is to be able to evaluate the results of laboratory-instrumental research methods, complaints and anamnesis data to establish the correct diagnosis in patients with liver cirrhosis.

Students should know: Definition. Importance of viral infection, nutritional factors, alcohol, toxic substances and immunological disorders. Classification. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Liver failure and other complications. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic

Students should be able to:

- Conduct surveys and physical examinations of patients with liver cirrhosis.
- Justify the use of basic invasive and non-invasive diagnostic methods for diagnosing liver cirrhosis.
- Determine the etiological and pathogenetic factors of the development of cirrhosis of the liver.
- Identify the main variants of the course and complications of liver cirrhosis.
- Draw up an examination plan for patients with liver cirrhosis.
- Carry out differential diagnosis, substantiate and formulate a diagnosis of cirrhosis of the liver.
- Prescribe treatment, carry out primary and secondary prevention of complications in cirrhosis of the liver.

Examples of Tests

- 1. Cirrhosis is most accurately (definitively) diagnosed by.**
 - A. Eye exam
 - B. Blood test
 - C. Liver biopsy
 - D. All of the above
- 2. What is the most common type of chronic viral hepatitis in the world?**
 - A. Hepatitis A
 - B. Hepatitis B
 - C. Hepatitis C
 - D. Hepatitis D and/or E
- 3. What important functions are affected by severe, acute, or chronic liver disease?**
 - A. Blood clotting
 - B. Elimination of water, salt, drugs, and toxins from the body
 - C. Manufacture of blood proteins
 - D. All of the above
- 4. Liver disease can also arise from...**
 - A. Acetaminophen
 - B. Mushrooms
 - C. Statins
 - D. All of the above

5. The best liver function test is:

- A. AST/ALT
- B. Alkaline phosphatase
- C. Bilirubin
- D. INR

Answers: 1.D; 2. B; 3. D.; 4. D.; 5. D.

Questions

1. Definition of cirrhosis.
2. Name etiology factors of cirrhosis.
3. Name histologic classification of cirrhosis.
4. Describe the Child-Pugh assessment.
5. Describe the non-specific and specific features of a patient with liver cirrhosis.
6. The main clinical syndromes of cirrhosis.
7. Describe hormonal disorders in a patient with liver cirrhosis.
8. Describe the hepatopulmonary syndrome. Treatment.
9. Describe hepatic encephalopathy. Treatment.
10. Describe hepatorenal syndrome. Treatment.
11. Describe ascites associated with cirrhosis. Treatment.
12. Pathogenesis and manifestations of hepatocellular insufficiency syndrome.
13. Pathogenesis and manifestations of portal hypertension syndrome.
14. Describe the complications of portal hypertension.
15. Describe the nutritional deficiency in a patient with liver cirrhosis.
16. Emergency therapy of complications of cirrhosis.
17. Prevention of cirrhosis
18. Indications for liver transplantation

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with liver cirrhosis	200	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
2. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016.
3. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier ; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham : Springer International Publishing, 2017. – XIX, 225 p.

4. EASL Recommendations on Treatment of Hepatitis C. Clinical Practice Guidelines, 2018 – 51 p.

5. EASL Recommendations on Treatment of Hepatitis B. Clinical Practice Guidelines, 2017 – 29 p.

6. EASL Clinical Practice Guidelines for the management of patients with decompensated cirrhosis. J Hepatol. 2018 Apr 10. [https://www.journal-of-hepatology.eu/article/S0168-8278\(18\)31966-4/fulltext](https://www.journal-of-hepatology.eu/article/S0168-8278(18)31966-4/fulltext)

Topic 8. Chronic pancreatitis

Time frame – 4 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with chronic pancreatitis.

Students should know: Definition. Importance of chronic pancreatitis, nutritional factors, alcohol, toxic substances and immunological disorders. Classification. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic.

Students should be able to:

- to know the etiology, pathogenesis of chronic pancreatitis;
- to know the classification, typical clinical picture of chronic pancreatitis;
- to know the principles of treatment, primary and secondary prevention, prognosis.
- to be able to select from the anamnesis information that indicates the presence of diseases of the digestive organs, namely chronic pancreatitis;
- draw up a diagnostic search scheme;
- to be able to detect signs of chronic pancreatitis during objective examination (examination, palpation, percussion, auscultation);
- analyze and interpret the significance of changes in data of laboratory research methods;
- interpret the results of instrumental research methods;
- to formulate and substantiate the preliminary diagnosis;
- carry out differential diagnosis with diseases that have a similar clinical picture;
- determine treatment tactics;
- to know the principles of treatment, rehabilitation and prevention of chronic pancreatitis;
- assess the patient's prognosis and propose a plan of preventive measures;
- demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination in communication with a patient.

Examples of Tests

1. What is the cardinal symptom of chronic pancreatitis?

A. Reduced levels of fecal elastase

- B. Pain
- C. Steatorrhea
- D. Weight loss

2. Which of the following decreases during the natural course of the disease?

- A. Pain intensity
- B. Elevation of pancreatic enzymes
- C. Exocrine pancreatic function
- D. All the above

3. Which of the following is the biggest risk factor for the development of chronic pancreatitis?

- A. Alcohol abuse
- B. Abnormal anatomy
- C. Viral infection
- D. Gene mutations/polymorphisms

Answers B, 2. D, 3. A

Questions

1. Give the definition of chronic pancreatitis.
2. Give the etiology of chronic pancreatitis.
3. Name pathophysiology of chronic pancreatitis.
4. Name clinical features in patients with chronic pancreatitis.
5. What is autoimmune pancreatitis?
6. Describe type 1 and type 2 autoimmune pancreatitis.
7. Clinical features chronic pancreatitis.
8. Give laboratory changes in patients with chronic pancreatitis.
9. What is this pancreatic function tests?
10. Name instrumental findings in patients with chronic pancreatitis.
11. Complications of chronic pancreatitis
12. Name treatment in patients with chronic pancreatitis.
13. What is the management of the pain syndrome in chronic pancreatitis?
14. What are the endoscopic methods of chronic pancreatitis treatment?
15. Name indications to surgical treatment of chronic pancreatitis

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with chronic pancreatitis	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016.

2. Guidelines for the Diagnostic Cross Sectional Imaging and Severity Scoring of Chronic Pancreatitis. Working Group for the International Consensus Guidelines for Chronic Pancreatitis. *Pancreatology*. 2018 Oct.18(7):764
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3. Bateson M. Clinical Investigations in Gastroenterology [Electronic resource] / M. Bateson, A. D Bouchier ; by Malcolm C. Bateson, Ian A.D. Bouchier. – 3rd ed. 2017. – Cham : Springer International Publishing, 2017. – XIX, 225 p.
<https://www.merckmanuals.com/professional/gastrointestinal-disorders/pancreatitis>

4. Internal medicine [Текст] = Внутрішня медицина : textbook. Р. 2 : Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / К. М. Amosova, О. Ya. Babak, I. P. Katerenchuk et al. ; eds. : M. A. Stanislavchuk, V. K. Sierkova. — Vinnytsya : Nova Knyha, 2019. — 360 p.

Topic 9. Chronic obstructive pulmonary disease. Bronchiectasis disease.

Time frame – 6 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with chronic obstructive pulmonary disease (COPD) and bronchiectasis.

Students should know: Definition. Importance of COPD. Importance of bronchiectasis Classification. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic.

Students should be able to:

- to determine the etiological and pathogenetic factors of COPD;
- classify COPD and analyze a typical clinical picture;
- draw up a diagnostic algorithm, determine and propose the necessary volume and sequence of methods for examining a patient with suspected COPD;
- be able to conduct an examination of the patient (survey, examination, palpation, percussion, auscultation) and substantiate the preliminary diagnosis;
- draw up a plan for additional examination of a patient suspected of having COPD;
- justify the use of the main diagnostic methods used in the examination of patients with COPD, indications and contraindications for their use and possible complications;
- to interpret the obtained results of additional research methods - general clinical examination, biochemical blood analysis, general sputum analysis, X-ray examination, spirogram, bronchoscopy and bronchographic examinations, etc.
- carry out differential diagnosis and substantiate the clinical diagnosis of COPD;
- to know the principles of treatment, rehabilitation and prevention of patients with COPD;
- to know the etiology, pathogenesis of bronchiectasis;
- to know the classification, typical clinical picture of bronchiectasis;
- to know the principles of treatment, primary and secondary prevention, prognosis.

- to be able to select from the anamnesis information that indicates the presence of bronchiectasis;
- be able to identify signs of bronchiectasis during objective examination (examination, palpation, percussion, auscultation);
- to analyze and interpret the meaning of changes in data of instrumental research methods;
- formulate and substantiate the preliminary diagnosis of bronchiectasis;
- carry out differential diagnosis with diseases that have a similar clinical picture;
- to know the principles of treatment, rehabilitation and prevention of patients with bronchiectasis.

Examples of tests

1. What is the most important cause of COPD?

- A. exposure to dusty or polluted air
- B. alpha1- antitrypsin deficiency
- C. cigarette smoking
- D. familial predisposition

2. Chronic cough, which characterized COPD, is:

- A. cough precedes dyspnea
- B. cough is parallel to dyspnea
- C. cough after marked dyspnea
- D. there are no defined law

3. Inhalation β_2 - agonists of short – term action are the following drugs, except:

- A. Salbutamol
- B. Fenoterol
- C. Terbutalin
- D. Salmeterol

4. The main symptoms of the COPD are:

- A. abdominal pain and diarrhea, vomiting
- B. cough
- C. headache
- D. constipation

5. Differential diagnosis of the COPD with:

- A. Asthma
- B. Peritonitis
- C. Piothorax
- D. appendicitis

Answers: 1C, 2A, 3D, 4B, 5A,

Questions

1. Definition of COPD.
2. Etiology of COPD.
3. Pathogenesis of COPD. What reflects airflow limitation.
4. Physical findings of patients with COPD.
5. Describe the concepts "Pink puffer" and "blue bloater" In patients with COPD
6. What are spirometry and body plethysmography?

7. Describe post-bronchodilator test.
8. Give the classification of COPD. GOLD classification.
9. Name main treatment principles of patients with COPD.
10. Describe initial pharmacological treatment of stable COPD depending on GOLD stage.
11. Describe follow-up treatment COPD depending on GOLD stage
12. Name the reasons exacerbations of COPD.
13. Name antibacterial therapy of patients with COPD.
14. Describe complication COPD.
15. Name essential of diagnosis of bronchiectasis.
16. What is bronchiectasis?
17. Name causes of bronchiectasis.
18. When does bronchiectasis often begin?
19. Describe the clinical features of a patient with bronchiectasis.
20. Name laboratory findings in patients with bronchiectasis.
21. Name X-Ray and CT findings in patients with bronchiectasis.
22. Name the differential diagnosis in patients with bronchiectasis.
23. Management of acute exacerbations in patients with bronchiectasis
24. Pharmacotherapy for airway clearance in bronchiectasis. What is postural drainage?
25. Long-term antibiotic therapy in a patient with bronchiectasis.
26. Name indications to surgery in patients with bronchiectasis.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with COPD and bronchiectasis	200	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
2. Global initiative for chronic obstructive lung diseases. Pocket guide to COPD diagnosis, management and prevention. A guide for health care professionals, 2020 edition.- 48p.
3. Guidelines for the Diagnosis and Treatment of COPD <https://www.infobooks.org/pdfview/727-guidelines-for-the-diagnosisand-treatment-of-copd-chronic-obstructive-pulmonary-disease-the-japanese-respiratory-society/>
4. Rao, R. Suster, Saul Moran, Cesar. Pulmonary Pathology. – DemosMedical, 2014. Global Initiative for chronic obstructive lung disease (global strategy for the diagnosis, management and prevention of chronic obstructive lung disease). – 2018.
5. Management of COPD exacerbations: a European Respiratory Society/American Thoracic Society guideline/ Jadwiga A. Wedzicha and other. – 2017. – P. 1-16.

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Topic 10. Bronchial asthma.

Time frame – 4 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with bronchial asthma.

Students should know: Definition. Importance of bronchial asthma. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic.

Students should be able to:

- to determine the etiological and pathogenetic factors of bronchial asthma;
- classification bronchial asthma and analyze the typical clinical picture;
- make an algorithm for diagnosis of bronchial asthma;
- be able to conduct an examination of the patient (survey, examination, palpation, percussion, auscultation) and substantiate the preliminary diagnosis;
- draw up a plan for an additional examination of a patient suspected of asthma;
- justify the use of basic diagnostic methods used in the examination of patients with bronchial asthma, indications and contraindications for their use and possible complications;
- to interpret the obtained results of additional research methods - general clinical examination, biochemical blood analysis, general sputum analysis, X-ray examination, spirogram, peak flowmetry, etc.
- carry out differential diagnosis and substantiate the clinical diagnosis of bronchial asthma;
- know the principles of treatment, rehabilitation and prevention of bronchial asthma;
- provide medical assistance in case of exacerbation of bronchial asthma.

Examples of tests

1. Clinical symptoms of bronchial asthma are usually connected with spread but various bronchi obstruction which is:

- A. partially reversible by bronchodilator therapy
- B. the impairment of lung function is largely fixed
- C. reversible spontaneously or under treatment
- D. non-reversible under treatment

2. Clinical symptoms of bronchial asthma are, except:

- A. cough with purulent sputum
- B. episodic breathlessness with laboured exhalation
- C. cough with expectoration of tenacious mucoid sputum more at night and physical loading
- D. episodic wheezes in lungs

3. Laboratory findings are characterized by, except:

- A. sputum is characteristically tenacious and mucoid
- B. sputum is characteristically purulent
- C. sputum contains "plugs" and "spirals"
- D. eosinophils are seen microscopically

Answers: 1-C, 2-A, 3-B

Questions

1. Give the definition of bronchial asthma.
2. Describe the etiology of allergic and non-allergic asthma.
3. Describe the general pathophysiology of bronchial asthma.
4. Give the clinical picture of classic allergic (atopic) bronchial asthma.
5. Give the classification of bronchial asthma.
6. Describe the subtypes and variants of bronchial asthma.
7. What is controlled course of bronchial asthma?
8. What is partially controlled course of bronchial asthma?
9. What is non-controlled course of bronchial asthma?
10. Describe the general principles of diagnosing a patient with bronchial asthma.
11. Laboratory findings in patient of bronchial asthma.
12. Describe the bronchial provocation test.
13. Describe the step-by-step treatment of a patient with bronchial asthma.
14. Which is the main way of medications introductions which use in treatment of patients with bronchial asthma?
15. Name inhalation glucocorticosteroids.
16. Name side effects of system and inhalation glucocorticosteroids.
17. Name steps for achievement and keeping up the control of bronchial asthma.
18. What is bronchial asthma exacerbation and its stages?
19. Where may be treated patients with mild and moderate severity and severe bronchial asthma?
20. What is complete response on therapy?
21. What will you do if the patient gives non-complete response?
22. Name treatment of patients with severe exacerbation of bronchial asthma.

Technological map of the lesson

No	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with bronchial asthma	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 24-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2022.
2. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.
3. Rao, R. Suster, Saul Moran, Cesar. Pulmonary Pathology. – DemosMedical, 2014.
4. Internal Medicine: in 2 books. Book 1. Diseases of the Cardiovascular and Respiratory Systems: textbook / N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. 2019p. «Medicine» - 664 p.
5. Global Initiative for Asthma. GINA, Updated 2019, <https://ginasthma.org/>.

Topic 11. Community-acquired pneumonia.

Time frame – 4 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with community acquired pneumonia.

Students should know: Definition. Importance of community acquired pneumonia. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic.

Specific goals:

- be able to recognize the main symptoms and syndromes of pneumonia;
- to know the physical methods of research in pneumonia;
- to know research methods that are used to diagnose pneumonia; indications and contraindications for their implementation; methods of their implementation; the diagnostic value of each of them;
- interpret the results of conducted research;
- recognize and diagnose complications of pneumonia;
- the appointment of antibacterial therapy depending on the patient groups for pneumonia.

Examples of tests

1. What is one of the causes of pleurisy?
 - A. appendicitis
 - B. ectopy of aorta
 - C. myocardial infarction
 - D. atherosclerosis
2. What referration of the pain is typical for irritation of the central portion of the diaphragmatic pleura?
 - A. Middle part of abdomen
 - B. Neck and shoulder
 - C. Head
 - D. Arm

3. The most typical symptoms of pleurisy are:

- A. Pleuritic pain, shallow breathing, coughing
- B. Pleuritic pain, dizziness, tachicardia
- C. High temperature, vomiting, obstipation
- D. Low temperature, sweating

4. Diseases that can simulate pleuritis are:

- A. Chronic hepatitis
- B. Pericarditis
- C. Thyroiditis
- D. Pancreatitis

5. What method of diagnostics is the most helpful in differentiating of pleurisy with acute inflammatory abdominal disease?

- A. General blood analyses
- B. Computer tomography
- C. X-ray
- D. Thermography

Answers: 1. C 2. B 3. A 4. B 5. C

Questions

1. What is community-acquired pneumonia?
2. What causes community-acquired pneumonia?
3. What is the pathophysiology of community-acquired pneumonia?
4. What stages of lobar pneumonia do you know?
5. What is bronchopneumonia?
6. What is interstitial pneumonia?
7. Who is at risk for community-acquired pneumonia?
8. What are the symptoms of community-acquired pneumonia?
9. What are the physical examination findings of community-acquired pneumonia?
10. How is community-acquired pneumonia diagnosed?
11. What is the assessment of viral pneumonia?
12. What is the assessment of bacterial pneumonia?
13. What are the three key signs of bacterial pneumonia?
14. What type of pneumonia is frequently undiagnosed?
15. What are the X-ray signs of pneumonia?
16. What is the advanced diagnosis of pneumonia?
17. Microbiological studies in the diagnosis of pneumonia.
18. Criteria for hospitalization of a patient with pneumonia. CURB-65 score.
19. What is pneumonia severity index (PSI/PORT score)?
20. Criteria for ICU admission patient with pneumonia.
21. Empiric antibiotic therapy for community-acquired pneumonia.
22. Empiric antibiotic therapy for community-acquired pneumonia in an inpatient setting.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with community acquired pneumonia	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 23-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2016.
2. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.
3. Internal Medicine: in 2 books. Book 1. Diseases of the Cardiovascular and Respiratory Systems: textbook / N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. 2019p. «Medicine» - 664 p.
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Topic 12. Nosocomial pneumonia (Hospital-acquired pneumonia).

Time frame – 2 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with nosocomial pneumonia.

Students should know: Definition. Importance of nosocomial pneumonia. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic.

Specific goals:

- be able to recognize the main symptoms and syndromes of pneumonia;
- to know the physical methods of research in pneumonia;
- to know research methods that are used to diagnose pneumonia; indications and contraindications for their implementation; methods of their implementation; the diagnostic value of each of them;
- interpret the results of conducted research;
- recognize and diagnose complications of pneumonia;
- the appointment of antibacterial therapy depending on the patient groups for pneumonia.

Examples of tests

1. What biomarkers of severe inflammation are used for diagnostic of pneumonia?

- A. C-reactive protein and procalcitonin
- B. C-reactive proteins
- C. C-reactive protein, specific IgM antibodies
- D. specific IgM antibodies

2. Methicillin resistance in S. aureus is determined by

- A. HLA B27
- B. the Lys gene
- C. the mec A gene
- D. the CYP 7A1 gene

3. What “atypical” organisms can be the causes of pneumonia?

- A. Mycoplasma pneumoniae, Legionella
- B. Chlamydia pneumoniae, Legionella
- C. Mycoplasma pneumoniae, Chlamydia pneumoniae, Legionella
- D. Mycoplasma pneumoniae, Chlamydia pneumoniae

4. What are the types of pneumonia?

- A. community-acquired, hospital-acquired, ventilator-associated, health care – associated
- B. hospital-acquired, ventilator-associated, health care–associated
- C. community-acquired, hospital-acquired
- D. community-acquired, hospital-acquired, ventilator-associated

Answers: 1. B 2. C 3. C 4. A

Questions

1. Name the diagnostic criteria for hospital-acquired pneumonia.
2. What are the risk factors of hospital-acquired pneumonia?
3. What is aspiration pneumonia?
4. What are the diagnostic tests for pneumonia?
5. What are the physical examination findings of hospital-acquired pneumonia?
6. What should true sputum show when trying to find the cause of pneumonia?
7. What will the ABG typically show for a patient with pneumonia?
8. What biomarkers are used to diagnose the severity of pneumonia?
9. Differential diagnosis of hospital pneumonia.
10. Pathogen-specific pneumonia (mycoplasma pneumonia, legionnaires' disease, pneumocystis pneumonia).
11. Empiric antibiotic therapy for hospital-acquired pneumonia.
12. Empiric antibiotic therapy for ventilator-associated pneumonia.
13. Supportive therapy for hospital-acquired pneumonia.

Technological map of the lesson

No	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with nosocomial pneumonia	45	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	20	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 23-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2016.
2. Cheng H-Y, Jian S-W, Liu D-P, Ng T-C, Huang W-T, Lin H-H, et al. Contact tracing assessment of COVID-19 transmission dynamics in Taiwan and risk at different exposure periods before and after symptom onset. JAMA Intern Med. 2020;180:1156. <https://doi.org/10.1001/jamainternmed.2020.2020>
3. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.
4. Internal Medicine: in 2 books. Book 1. Diseases of the Cardiovascular and Respiratory Systems: textbook / N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. 2019p. «Medicine» - 664 p.
5. Metlay J.P., Waterer G.W., Long A.C. et al. Diagnosis and Treatment of Adults with Community-acquired Pneumonia. An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America // Am. J. Respir. Crit. Care Med. - 2019. - Vol. 200(7). – P. 45-67.

Topic 13. Complications of pneumonia

Time frame – 2 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with community acquired pneumonia.

Students should know: Definition. Importance of effusion, pleural empyema, abscess and lung gangrene. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic.

Specific goals

- determine the etiological and pathogenetic factors of pleurisy and pleural effusion, pleural empyema, abscess and lung gangrene;
- conduct a survey and physical examination of patients with complications of pneumonia;
- to know the classification of pleurisy and pleural effusion, pleural empyema, abscess and lung gangrene;
- analyze various clinical options and complications of pneumonia;
- draw up an examination plan for patients with complications of pneumonia;
- to interpret the results of invasive and non-invasive diagnostic methods and determine indications and contraindications for their implementation, possible complications;
- suggest diseases for differential diagnosis, justify and formulate the diagnosis of pleurisy and pleural effusion, empyema of the pleura, abscess and lung gangrene;
- know the principles of treatment, primary and secondary prevention, prognosis;

Examples of tests

1. How can you confirm bronchiectasis?

- A. Bronchographic examination
- B. X-Ray examination
- C. Laboratory findings
- D. Clinical findings

2. Dosing regimen of Amoxicillin clavulanic acid:

- A. 1,0g 8-12 hourly i.v
- B. 1,2g 8-12 hourly i.v
- C. 1,4g 8-12 hourly i.v
- D. 1,6g 8-12 hourly i.v

3. Main way of medicine introduction for abscess is:

- A. Orally
- B. Intramuscular
- C. Intravenous
- D. Aerosol

4. What does Kartageners syndrom include, except:

- A. Sinusitis
- B. Situs in versus
- C. Bronchiectasis
- D. Osteoporosis
- E. All named above

Answers to tests: 1. A 2. B 3. 4. C

Questions

1. Classification of pneumonia complications
2. Define pleuritis and parapneumonic pleural effusion, pleural empyema.
3. Distinctive signs of pleural empyema
4. Define abscess and lung gangrene.
5. Etiology of pleuritis and parapneumonic pleural effusion.
6. Etiology of abscess and lung gangrene.
7. Pathogenesis of pleuritis and pleural effusion, pleural empyema,
8. Pathogenesis of abscess and lung gangrene.
9. Clinical manifestations of pleuritis and pleural effusion, pleural empyema, abscess and lung gangrene.
10. Changes in data of physical research methods in patients with pleuritis and pleural effusion, pleural empyema, abscess and lung gangrene.
11. Changes in these laboratory methods of research in patients with pleuritis and pleural effusion, empyema of the pleura, abscess and lung gangrene.
12. Changes in these instrumental research methods in patients with pleuritis and pleural effusion, empyema of the pleura, abscess and lung gangrene.
13. Differential diagnosis of pneumonia complications.
14. Pleural puncture - technique, indications and contraindications, complications.
15. Treatment tactics of pneumonia complications.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with complications of pneumonia	45	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	20	control questions	Study room, online - using google meet

References.

1. Davidson's Principles and Practice of Medicine. Edition 23-st The Editors: Nicki R. Colledge, Brian R. Walker, Stuart H. Ralston. – 2016.

2. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I. Internal Medicine: in 2 books. Book 1. Diseases of the Cardiovascular and Respiratory Systems: textbook / N.M. Seredyuk, I.P. Vakaliuk, R.I. Yatsyshyn et al. 2019p. «Medicine» - 664 p.

3. Internal medicine [Текст] = Внутрішня медицина: textbook. Р. 2: Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate / K. M. Amosova, O. Ya. Babak, I. P. Katerenchuk et al.; eds.: M. A. Stanislavchuk, V. K. Sierkova. — Vinnytsya: Nova Knyha, 2019. — 360 p.

Topic 14. Anemias (iron-deficient, B12-deficient, folate-deficient, hemolytic, aplastic, posthemorrhagic).

Time frame – 6 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with anemia.

Students should know: Definition. Importance of anemia. Classification of anemia. Peculiarities of clinical manifestations and diagnosis of various options. Differential diagnosis. Differentiated therapy. Emergency treatment of complications. Primary and secondary prevention. Forecast and performance. Prognosis and work capacity, management of the patient in the conditions of a pandemic.

Specific goals:

- to analyze the prevalence of various types of anemia;
- to determine the etiology and pathogenesis of various types of anemia;
- classify anemias and analyze their typical clinical picture;
- draw up a diagnostic algorithm, determine the sequence of methods of examination of a patient with various types of anemia;
- to be able to conduct an examination of the patient (survey, examination, palpation, percussion, auscultation) and justify the preliminary diagnosis;
- make a plan for additional examination of a patient with anemia;
- justify the use of the main invasive and non-invasive diagnostic methods used in the examination of patients with anemia, indications and contraindications for their use and possible complications;

- to interpret the obtained results of research methods - general clinical blood analysis, biochemical blood analysis, myelogram, etc.;
- carry out differential diagnosis and substantiate the clinical diagnosis;
- to know the principles of treatment, rehabilitation, prevention of various types of anemia;
- to assess the prognosis and work capacity for various types of anemia;

Examples of tests

1. Name daily requirement of vitamin B₁₂:

- A. 1 – 3 µkg
- B. 2 – 7 µkg
- C. 15 – 20 µkg
- D. 30 – 50 µkg

2. Where the normal physiology absorption of vitamin B₁₂ may occur?

- A. in the stomach
- B. in the duodenum
- C. in the jejunem
- D. in the terminal ileum

3. Name daily requirement of folate:

- A. 100 µkg
- B. 300 µkg
- C. 500 µkg
- D. 700 µkg

4. Name systems that may disturb in patients with vitamin B₁₂ deficiency anaemia:

- A. hematopoietic system
- B. respiratory system
- C. nervous system
- D. digestive system

Answers: 1. B 2. D 3. A 4. A, C, D

Questions

1. To give definition of the term “Anemias”
2. Classification of anemia by morphology.
3. Classification of anemia by severity.
4. Classification of anemia by RBC proliferation.
5. Etiology and pathogenesis of anemia.
6. To give definition of iron deficiency anemia (IDA)
7. Clinic of IDA.
8. The laboratory diagnostic of IDA.
9. Treatment of IDA.
10. What is indication for iron transfusion.
11. Etiology and pathogenesis of B₁₂ and folate deficiency anemias.
12. Clinic of B₁₂ and folate deficiency anemias.
13. The laboratory and instrumental diagnostic at these anemias.
14. Diagnostic criteria of B₁₂ and folate deficiency anemias.

15. Treatment of B12 and folate deficiency anemias.
16. Criterion efficiency of treatment of B12 and folate deficiency anemias.
17. Concept of hemolytic and aplastic anemias
18. Etiology and pathogenesis of hemolytic anemias.
19. Clinic of thalassemia, hereditary spherocytosis (Minkowsky-Chauffard's disease).
20. The laboratory diagnostic of hemolytic anemias.
21. Clinic and Diagnostic of Hemoglobinopathies: Paroxysmal nocturnal hemoglobinuria, Sickle cell anemia.
22. Treatment of hemolytic anemias and their preventive maintenance.
23. Etiology and pathogenesis of aplastic anemias
24. Clinic and complications of aplastic anemias.
25. The laboratory diagnostic of aplastic anemias.
26. Diagnostic criteria of hemolytic and aplastic anemias.
27. Differential diagnostics of hemolytic and aplastic anemias.
28. Treatment of aplastic anemias and their preventive maintenance.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with anemias	200	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.
2. HEMATOLOGY: Basic Principles and Practice 6-th edition Ronald Hoffman Edward J. Benz, Jr. Leslie E. Silberstein [et all.]. Copyright © 2013 by Saunders, an imprint of Elsevier Inc.
3. Dacie and Lewis Practical Haematology Barbara J.Brain, Imelda Bates, Michael A. Laffan Twelfth edition. Elsevier. 2017.
4. Vynnychenko L.B Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska ; under the editorship of V.F. Orlovsky, N.V. Demikhova. – Sumy : Sumy State University, 2019. – 136 p.
5. A Laboratory Guide to Clinical Hematology [Електронний ресурс] / V. Villatoro, M. To <https://www.infobooks.org/pdfview/726-essentialpractical-skills-in-internal-medicine-professor-tetyana-pertseva/>

Topic 15. Acute leukemias.

Time frame – 4 hours

The **general goal** is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with acute leukemia.

Students should know: Definition. Modern views on etiology and pathogenesis. Classification. Main clinical and hematological syndromes. Clinical manifestations. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Bone marrow transplantation. Supportive therapy. Primary and secondary prevention. Forecast and performance.

Students should be able to:

- Conduct interviews and physical examinations of patients with major diseases of the blood and hematopoietic organs.
- To justify the use of the main invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their use, possible complications.
- Determine the etiological and pathogenetic factors of the main diseases of the blood and hematopoietic organs.
- Identify the typical clinical picture of the main diseases of the blood and hematopoietic organs.
- Identify the main variants of the course and complications of the main diseases of the blood and hematopoietic organs.
- Draw up a plan for the examination of patients with major diseases of the blood and hematopoietic organs.
- Based on the analysis of laboratory and instrumental examination data, carry out differential diagnosis, substantiate and formulate a diagnosis for the main diseases of the blood and hematopoietic organs.
- Prescribe treatment, carry out primary and secondary prevention for the main diseases of the blood and hematopoietic organs.
- Diagnose and provide assistance for bleeding diseases of the blood and hematopoietic organs.
- Determine the blood group.
- Transfuse blood components and blood substitutes.

Examples of tests

1. Name etiology factors of leukaemias:

- A. exposure to ionizing radiation
- B. viral infection
- C. chromosomal translocation
- D. all named above

2. In which age could you mostly see acute lymphocytic leukemia?

- A. in childhood
- B. in young adults
- C. in the middle age
- D. in old age

3. Name main cells in CBC you can see in patients with acute leukemia:

- A. prolymphocytes
- B. plasmocytes
- C. blasts
- D. lymphocytes

4. Name the goal of treatment in patients with acute leukemia:

- A. normal hematopoiesis with less than 20 % blast cells
- B. normal hematopoiesis with less than 15 % blast cells
- C. normal hematopoiesis with less than 10 % blast cells
- D. normal hematopoiesis with less than 5 % blast cells

Answers to tests: 1. D, 2. A, 3. C, 4. D

Questions

1. To give definition of the term “HEMOBLASTOSIS”
2. Classifications of HEMOBLASTOSIS.
3. To give definition of the term “Acute Leukemias (AL)”.
4. Acute lymphoblastic leukemia (ALL).
5. Acute myeloid leukemia (AML)
6. Etiology and pathogenesis of ALL and AML.
7. French-American-British (FAB) historical classification of ALL.
8. FAB classification of AML
9. To list basic clinical syndromes at ALL and AML.
10. Laboratory diagnostic of ALL.
11. Laboratory diagnostic of AML.
12. Histopathological features of acute leukemia.
13. Immunophenotype and genetic studies in acute leukemias.
14. Diagnostic criteria and differential diagnostics of AL.
15. Treatment of ALL and AML.
16. Systemic chemotherapy. Common agents used in chemotherapy regimens for acute leukemia.
17. Management of central nervous system infiltration.
18. Management of complications.

Technological map of the lesson

No	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with acute leukemias	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.

2. HEMATOLOGY: Basic Principles and Practice 6-th edition Ronald Hoffman Edward J. Benz, Jr. Leslie E. Silberstein [et all.]. Copyright © 2013 by Saunders, an imprint of Elsevier Inc.

3. Dacie and Lewis Practical Haematology Barbara J. Brain, Imelda Bates, Michael A. Laffan Twelfth edition. Elsevier. 2017.

4. Vynnychenko L.B Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska; under the editorship of V.F. Orlovsky, N.V. Demikhova. – Sumy : Sumy State University, 2019. – 136 p.

5. Clinical practice guidelines Acute lymphoblastic leukemia in adult patients: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up // Annals of Oncology 27(Supplement5): v69–v82, 2016 doi:10.1093/annonc/mdw025.

Topic 16. Chronic leukemias

Time frame – 4 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with chronic leukemia.

Students should know: Definition. Modern views on etiology and pathogenesis. Classification. Main clinical and hematological syndromes. Clinical manifestations. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Supportive therapy. Primary and secondary prevention. Forecast and performance.

Students should be able to:

- Conduct interviews and physical examinations of patients with chronic leukemia.
- To justify the use of the main invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their use, possible complications.
- Determine the etiological and pathogenetic factors of chronic leukemias.
- Identify the typical clinical picture of chronic leukemias.
- Identify the main variants of the course and complications of chronic leukemias.
- Draw up a plan for examination of patients with chronic leukemia.
- Based on the analysis of laboratory and instrumental examination data, perform differential diagnosis, justify and formulate a diagnosis in patients with chronic leukemia.
- Prescribe treatment, carry out primary and secondary prevention in the main chronic leukemias.
- Determine the blood group. Transfuse blood components and blood substitutes.
- Demonstrate mastery of the moral and deontological principles of a medical specialist and the principles of professional subordination.

Examples of tests

1. What is the terminal phase of CML?

- A. consolidation
- B. blast crisis
- C. anemic
- D. accelerated

2. What is the main indicators for chronic lymphocytic leukemia?

- A. peripheral leukocytosis and increased level of leukocytes in bone marrow
- B. peripheral erythrocytosis and increased level of erythrocytes in bone marrow
- C. peripheral thrombocytosis and increased level of thrombocytes in bone marrow
- D. peripheral lymphocytosis and increased level of lymphocytes in bone marrow

3. Which of the following is MOST likely to identify lymphocytopenia in an asymptomatic patient?

- A. Lymphadenopathy or splenomegaly
- B. Presumptive diagnosis of an autoimmune disorder
- C. Incidental detection on a CBC with differential
- D. Evidence of hematologic disease such as petechiae

4. Which of the following can cause hereditary lymphocytopenia?

- A. Aplasia of lymphopoietic stem cells
- B. Myasthenia gravis
- C. Protein-losing enteropathy
- D. Sarcoidosis

Answers to tests: 1. B, 2. D, 3. C, 4. A

Questions.

1. Classifications of myeloproliferative disease.
2. Diagnostic criteria of chronic myeloid leukemia (CML). Philadelphia chromosome.
3. Clinical features of CML.
4. Definitions of CML phases.
5. Treatment of CML.
6. Diagnostic criteria of Polycythemia.
7. Etiology and pathogenesis of Chronic lymphocytic leukemia (CLL).
8. Clinical features of CLL
9. Laboratory diagnostic of CLL.
10. Diagnostic criteria and differential diagnostics of CLL.
11. Treatment of CLL.
12. What is allogeneic stem cell transplantation?
13. Complications of CML and CLL.

Technological map of the lesson

No	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with chronic leukemias	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Deininger MW, Shah NP, Altman JK, et al. Chronic Myeloid Leukemia, Version 2.2021, NCCN Clinical Practice Guidelines in Oncology. J Natl Compr Canc Netw. 2020 Oct 1;18(10):1385-415. <https://jnccn.org/view/journals/jnccn/18/10/article-p1385.xml>
2. Dacie and Lewis Practical Haematology Barbara J. Brain, Imelda Bates, Michael A. Laffan Twelfth edition. Elsevier. 2017.
3. Vynnychenko L.B Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska ; under the editorship of V.F. Orlovsky, N.V. Demikhova. – Sumy : Sumy State University, 2019. – 136 p.
4. Clinical practice guidelines Acute lymphoblastic leukaemia in adult patients: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up // Annals of Oncology 27(Supplement5): v69–v82,2016 doi:10.1093/annonc/mdw025.

Topic 17. Lymphomas

Time frame – 2 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with lymphoma.

Students should know: Definition. Modern views on etiology and pathogenesis. Classification. Main clinical and hematological syndromes. Clinical manifestations. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Supportive therapy. Primary and secondary prevention. Forecast and performance.

Students should be able to:

- Conduct interviews and physical examinations of patients with major diseases of the blood and hematopoietic organs.
- To justify the use of the main invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their use, possible complications.
- Determine the etiological and pathogenetic factors of the main lymphoid diseases.
- Identify the typical clinical picture of the main blood diseases.
- Identify the main variants of the course and complications of the main blood diseases.
- Draw up a plan for the examination of patients with major blood diseases.
- Based on the analysis of laboratory and instrumental examination data, carry out differential diagnosis, substantiate and formulate a diagnosis for the main diseases of the blood and hematopoietic organs.
- Prescribe treatment, carry out primary and secondary prevention for the main diseases of the blood and hematopoietic organs.
- Diagnose and provide assistance for bleeding diseases of the blood and hematopoietic organs.
- Determine the blood group.
- Transfuse blood components and blood substitutes.

Examples of tests

1. What is this multiple myeloma?

- A. the lymphomas
- B. the paraproteinemia's
- C. the leukaemias
- D. the hemolytic anaemia

2. Multiple myeloma is malignant proliferation of which cells in bone marrow?

- A. Lymphocytes
- B. Monocytes
- C. Basophiles
- D. Plasmatic cells

3. Name laboratory changes of Multiple myeloma asymptomatic stage.

- A. increased ESR, leukocytosis, thrombocytopenia
- B. increased ESR, M-protein, proteinuria
- C. never changes
- D. leukocytosis, anaemia

4. Which symptoms will be present in case of effected bones in patients with Multiple myeloma?

- A. Bone pain
- B. neoplasm⁷
- C. Fracture
- D. All named above

5. What could you see on bone marrow aspirate or trephine biopsy?

- A. Leucocytes infiltration
- B. Plasma cell infiltration
- C. T-lymphocyte infiltration
- D. B- lymphocyte infiltration

Answers to tests: 1. B, 2. D, 3. B, 4. D, 5. B

Questions

1. Definition and classification of lymphomas.
2. Etiology of Hodgkin's and non-Hodgkin's lymphomas.
3. B-cell lymphomas.
4. T-cell lymphomas.
5. Classification of Hodgkin's lymphoma.
6. Clinical manifestations Hodgkin's lymphomas.
7. Clinical manifestations non-Hodgkin's lymphomas
8. Laboratory diagnostics and diagnostic criteria for Hodgkin's and non-Hodgkin's lymphomas.
9. Diagnostic method of bone marrow aspiration and biopsy.
10. Differential diagnosis of Hodgkin's and non-Hodgkin's lymphomas.
11. Principles of treatment of Hodgkin's and non-Hodgkin's lymphomas.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with lymphomas	45	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	20	control questions	Study room, online - using google meet

References

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.
2. HEMATOLOGY: Basic Principles and Practice 6-th edition Ronald Hoffman Edward J. Benz, Jr. Leslie E. Silberstein [et all.]. Copyright – 2013 by Saunders, an imprint of Elsevier Inc.
3. Vynnychenko L.B Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska ; under the editorship of V.F. Orlovsky, N.V. Demikhova. – Sumy : Sumy State University, 2019. – 136 p.

Topic 18. Multiple myeloma.

Time frame – 2 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with multiple myeloma.

Students should know: Definition and classification of multiple myeloma. Clinical manifestations and their features in different variants of the course. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Prevention. Forecast and performance.

Students should be able to:

- Conduct interviews and physical examinations of patients with multiple myeloma.
- To justify the main invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their use, possible complications.
- Determine the etiological and pathogenetic factors of multiple myeloma.
- Identify the typical clinical picture of multiple myeloma.
- Identify the main options for the course and complications of multiple myeloma.
- Make a plan for examination of patients with multiple myeloma.
- Based on the analysis of laboratory and instrumental examination data, perform differential diagnosis, substantiate and formulate a diagnosis of multiple myeloma.
- Prescribe treatment to patients with multiple myeloma.
- Diagnose and provide assistance for bleeding due to diseases of the blood and blood-forming organs.

- Determine the blood group.
- Transfuse blood components and blood substitutes.

Examples of tests

1. What is this multiple myeloma?

- A. the lymphomas
- B. the paraproteinemia
- C. the leukaemias
- D. the hemolytic anaemia

2. Multiple myeloma is malignant proliferation of which cells in bone marrow?

- A. Lymphocytes
- B. Monocytes
- C. Basophiles
- D. Plasmatic cells

3. Name laboratory changes of Multiple myeloma asymptomatic stage.

- A. increased ESR, leukocytosis, thrombocytopenia
- B. increased ESR, M-protein, proteinuria
- C. never changes
- D. leukocytosis, anaemia

4. Which symptoms will be present in case of effected bones in patients with Multiple myeloma?

- A. Bone pain
- B. neoplasm
- C. Fracture
- D. All named above

5. What could you see on bone marrow aspirate or trephine biopsy?

- A. Leucocytes infiltration
- B. Plasma cell infiltration
- C. T-lymphocyte infiltration
- D. B- lymphocyte infiltration

Answers to tests: B, 2. D, 3. B, 4. D, 5. B

Questions

1. To give definition of the term "Multiple myeloma" (MM).
2. Etiology and pathogenesis of MM.
3. Classification of MM.
4. Clinical features of MM.
5. Laboratory and instrumental diagnostic of MM.
6. Diagnostic criteria and MM.
7. International Myeloma Working Group diagnostic criteria for multiple myeloma.
8. Differential diagnostics of MM with Waldenström's Macroglobulinemia.
9. Treatment of MM.
10. Complications of MM (Dysproteinemia-associated kidney disease, systemic manifestations)

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with multiple myeloma	45	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	20	control questions	Study room, online - using google meet

References.

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.
2. Vynnychenko L.B Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska; under the editorship of V.F. Orlovsky, N.V. Demikhova. – Sumy: Sumy State University, 2019. – 136 p.

Topic 19. Hemophilia

Time frame – 2 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with hemophilia.

Students should know: Definition and classification of hemophilia. Clinical manifestations and their features in different variants of the course. Diagnosis criteria. Differential diagnosis. Complication. Principles of treatment. Prevention. Forecast and performance.

Students should be able to:

- Conduct interviews and physical examinations of patients with hemophilia.
- To justify the main invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their use, possible complications.
- Determine the etiological and pathogenetic factors of hemophilia.
- Identify the typical clinical picture of hemophilia.
- Identify the main variants of the course and complications of hemophilia.
- Draw up a plan for examination of patients with hemophilia.
- Based on the analysis of laboratory and instrumental examination data, perform differential diagnosis, justify and formulate a diagnosis of hemophilia.
- Prescribe treatment to patients with hemophilia.
- Diagnose and provide assistance for bleeding due to diseases of the blood and blood-forming organs.
- Determine the blood group.
- Transfuse blood components and blood substitutes.

Examples of tests

1. The hemorrhagic diathesis which are caused by changes of abnormal blood vessels is all but one:

Henoch-Schoenlein Purpura

- A. Hemorrhagic vasculitis
- B. Rendu-Osler-Weber Syndrome
- C. Willebrand's Disease
- D. Hemangioma

2. The hematonic type of hemorrhagic is at:

- A. Hemorrhagic vasculitis
- B. Hemophilia
- C. Werlhof's disease
- D. Glanzmann's disease

3. The petechialic type of hemorrhagic is at:

- A. Thrombocytopenic and thrombocytopathy
- B. Hemophilia
- C. Rendu-Osler-Weber Syndrome
- D. Werlhof's disease
- E. Hemorrhagic vasculitis

4. The patient 35 years during 5 years has nasal bleeding, ecchymosis on a skin. Two weeks back after nasal of a bleeding there was a weakness, faint. The patient has pallor, ecchymosis on a skin. The analysis of blood: er. – $4.2 \times 10^{12}/l$, Hb – 90 g/l, chromatic parameter – 0.7, L. – $6.4 \times 10^9/l$, stab n.- 3%, seg. – 67%, e. – 2%, l. – 23%, m – 5%, thrombocytes – $10 \times 10^9/l$, ESR – 15mm/ hour. With is diagnosis at the patient?

- A. Aplastic anemia
- B. Iron deficiency Anemias
- C. Hemorrhagic vasculitis
- D. Thrombocytopenic purpura
- E. Hemophilia

Answers: 1. C , 2.B , 3.C , 4. D

Questions

1. To give definition of the term “Hemorrhagic diathesis” (HD).
2. Classification of HD.
3. Homeostasis system and it physiology.
4. Types of a bleeding at HD.
5. Diagnostic criteria of Hemophilia.
6. Treatment and preventive maintenance of Hemophilia.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online - using google meet
2	Thematic analysis of patients with hemophilia	120	medical history, analysis of situational task	Hospital wards, study room, online - using google meet
3	Control survey. Summing up	25	control questions	Study room, online - using google meet

References.

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol.I.
2. Vynnychenko L.B Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska ; under the editorship of V.F. Orlovsky, N.V. Demikhova. – Sumy : Sumy State University, 2019. – 136 p.
3. Dacie and Lewis Practical Haematology Barbara J.Brain, Imelda Bates, Michael A. Laffan Twelfth edition. Elsevier. 2017.

Topic 20. Thrombocytopenic purpura

Time frame – 4 hours

The general goal is to be able to make a final diagnosis on the basis of anamnestic data, clinical diagnostic criteria, to determine the tactics of treatment of patients with thrombocytopenic purpura.

Students should know: Definition. Etiology and pathogenesis, main clinical syndromes. Diagnosis criteria. Differential diagnosis. Treatment. Therapy of thrombocytopenic purpura. Prevention of bleeding. Primary and secondary prevention. Forecast and performance.

Students should be able to:

- Conduct interviews and physical examinations of patients with thrombocytopenic purpura.
- To justify the use of the main invasive and non-invasive diagnostic methods used in hematology, indications and contraindications for their use, possible complications.
- Determine etiological and pathogenetic factors of thrombocytopenic purpura.
- Identify the typical clinical picture of thrombocytopenic purpura.
- Identify the main variants of the course and complications of thrombocytopenic purpura.
- To draw up a plan for examination of patients with thrombocytopenic purpura.
- Based on the analysis of laboratory and instrumental examination data, perform differential diagnosis, justify and formulate a diagnosis of thrombocytopenic purpura.
- Prescribe treatment, carry out primary and secondary prevention in thrombocytopenic purpura.

- Diagnose and treat bleeding due to thrombocytopenic purpura.
- Determine the blood group.
- Transfuse blood components and blood substitutes.

Examples of tests

1. The hemorrhagic diathesis which are caused by changes of thrombocytes is all but one:

- A. Werlhof's disease
- B. Thrombocytopenic purpura
- C. Henoch-Schönlein Purpura
- D. Dysfunction of thrombocytes at hemoblastosis

2. The normal range Prothrombin time (PT) it is

- A. 20 - 25 seconds
- B. 5 - 10 seconds
- C. 11 - 15 seconds
- D. 2 - 10 seconds

3. Thrombotic disorders can be caused by genetic defects, which increase the risk of venous thromboembolism, or acquired defects, which increase the risk of arterial and venous thrombosis. Of the acquired causes, which of the following is most likely to increase a patient's risk of venous thrombosis?

- A. Sepsis
- B. Hyperhomocysteinemia
- C. Atherosclerosis
- D. Low-dose oral contraceptives

4. Symptoms of a thrombotic disorder depend on the location of the clot. For instance, if a patient has abdominal pain, which of the following thrombotic disorders is most likely?

- A. Mesenteric ischemia
- B. Ischemic stroke
- C. Pulmonary embolism
- D. Deep venous thrombosis

Answers: 1. C, 2. C, 3. A, 4. A

Questions

1. Diagnostic criteria of Willebrand's Disease.
2. Diagnostic criteria of Thrombocytopenic purpura.
3. Treatment of Werlhof's disease.
4. Diagnostic criteria of Thrombocytopenic purpura and Glanzmann's disease.
5. Variants of hemorrhagic vasculitis and clinic depending on variant of illness.
6. Differential diagnostics of hemorrhagic vasculitis.
7. Diagnostic criteria of Rendu-Osler-Weber Syndrome.

Technological map of the lesson

№	Stage	Minute	Teaching aids	Place of the lesson
1	Determination of the initial level using test control	15	Test	Study room, online-using google meet
2	Thematic analysis of patients with thrombocytopenic purpura	120	medical history, analysis of situational task	Hospital wards, study room, online-using google meet
3	Control survey. Summing up	25	control questions	Study room, online-using google meet

References

1. Goldman-Cecil medicine / [edited by] Lee Goldman, Andrew I. Schafer. – 25-th edition. Copyright 2016. Vol. I.
2. Dacie and Lewis Practical Haematology Barbara J. Brain, Imelda Bates, Michael A. Laffan Twelfth edition. Elsevier. 2017.
3. Vynnychenko L. B. Internal Medicine: Hematology: study guide / L. B. Vynnychenko, L. N. Prystupa, O. M. Chernatska ; under the editorship of V. F. Orlovsky, N. V. Demikhova. – Sumy : Sumy State University, 2019. – 136 p.
4. Thrombocytopenia and Platelet Dysfunction.
URL: <https://www.merckmanuals.com/professional/hematology-and-oncology/thrombocytopenia-and-platelet-dysfunction/>.

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гастроентерологія, пульмонологія, гематологія»)*
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