MINISTRY OF HEALTH OF UKRAINE

ODESA NATIONAL MEDICAL UNIVERSITY

Faculty: medical №1
Department of propaedeutics of internal diseases and therapy

APPROVED BY.

Vice-rector for scientific and pedagogical work

_____ Eduard BURIACHKIVSKYI

_____ 2023

METHODOLOGICAL DEVELOPMENT
FOR PRACTICAL CLASSES IN THE DISCIPLINE

Faculty, course: dentistry, 3
Discipline: Internal medicine

Approved:
Meeting of the Department of Propedeutics of Internal Medicine and Therapy
Minutes № _1_ from 30.08.2023

Head of the Department _____ Olena YAKYMENKO

Authors:
Head of the department, Doctor in Medicine, Professor Yakimenko Olena
Doctor in Medicine, Associate Professor Sebov Denis
PhD of Medicine, Assistant Professor Oliynyk Dmytro
PhD of Medicine, Assistant Professor Maznichenko Iegor
Assistant Professor Zakrytov Denis

Practical lesson No. 1

Subject: Bronchial asthma. Etiology. Pathogenesis. Clinic, diagnosis. Modern treatment. The role of the dentist in prevention.

Goal:to teach applicants to recognize the main symptoms and syndromes of BA, to familiarize with the physical methods of research in BA, with the research methods used for the diagnosis of BA, indications and contraindications for their conduct, methods of their implementation, to teach applicants to independently interpret the results of the conducted research, to recognize and diagnose complications with BA, teach applicants to prescribe treatment for BA.

Basic concepts: Definition of bronchial asthma, etiology and pathogenesis. Classification of bronchial asthma. Main complaints and physical examination data. Bronchial obstruction syndrome. Syndrome of mucociliary insufficiency and increased airiness of the lungs. Instrumental diagnostics. Spirography and its significance for the diagnosis of bronchial asthma. Laboratory signs of bronchial asthma based on general blood analysis and sputum examination. The main clinical manifestations of various degrees of bronchial asthma, respiratory failure syndrome with bronchial obstruction. Principles and methods of prevention and treatment at different stages of bronchial asthma. Diagnosis and emergency care for an attack of bronchial asthma, asthmatic condition.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (to define bronchial asthma, describe the etiology, pathogenesis, main clinical syndromes, be able to conduct a patient survey, examination, palpation, percussion, auscultation of the lungs, know the method of conducting and the main indicators of spirography);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

- Define bronchial asthma.
- What is bronchial hyperreactivity?
- What factors influence the development and clinical manifestations of BA?
- What are the clinical symptoms of BA?
- What provokes the development of BA symptoms?
- What causes broncho-obstructive syndrome in asthma?
- Describe an attack of BA.
- What are the objective signs of AD?
- BA classification.

- What is BA control?
- What additional methods of examination should be performed on a BA patient?
- What are the criteria for impaired external breathing in BA?
- What are the complications of BA?
- How are medicines for the treatment of BA classified?
- Which medicinal products belong to the control group?
- What medicinal products belong to emergency medicine?
- What is a stepwise approach to the treatment of BA?
- Principles of BA treatment

3. Formation of professional abilities and skills (mastering the skills of interviewing patients, conducting curation of a patient with bronchial asthma, conducting laboratory research, determining the treatment scheme):

_ content of tasks (to conduct a survey of a patient with bronchial asthma);

_ recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

_ requirements for work results, including registration;

_ control materials for the final stage of the lesson.

1. "Bronchial asthma is a chronic inflammatory disease of the respiratory tract, in the development of which mast cells, T-lymphocytes, and macrophages participate." This definition needs to be supplemented:

A. "And which is characterized by variable reversible bronchial obstruction."
V. "And which is characterized by bronchial hyperreactivity."
S. "And to which there is a genetic predisposition."
D. To all of the above.
E. There is no need for addition because the definition is complete.

2. *Under which pathological condition in patients with bronchial asthma, obstructive changes will be irreversible*:

A. With spasm of the smooth muscles of the bronchi.
B. With edema of the mucous membrane of the respiratory tract.
S. With the formation of thick secretions and obturation of small bronchi.
D. With sclerotic changes in the wall of the bronchi.
Yes. With all of the above.

3. *Bronchial obstruction in bronchial asthma is caused*:

A. Spasm of bronchial smooth muscles.
B. Edema of the mucous membrane of the bronchi.
S. Discrynia.
D. Functional instability of the respiratory tract.
E. All the listed factors.

4. Using a peak flow meter, you cannot:

A. To predict the exacerbation of the disease.
B. To assess the effectiveness of the bronchodilator drug.

S. Plan basic therapy.
D. To assess the variability of bronchial obstruction.
E. Diagnose bronchial hyperreactivity.
5. It is generally accepted to monitor the clinical course of bronchial asthma at this time:
A. Studying the expiratory flow rate (PEV) using a peak flow meter.
B. Studying the parameters of the "flow-volume" curve.
C. Conducting a test with bronchodilators.
D. Administration of provocation tests with histamine.
E. Setting provocative tests with acetylcholine.
6. With a well-controlled course of bronchial asthma, indicators of peak exhalation speed:
A. They should be almost the same in the morning and evening.
A. They should be much higher in the morning than in the evening.
S. They should be much higher in the evening than in the morning.
D. They should be minimal in the morning and gradually increase towards the evening.
E. They should be maximum in the morning and gradually decrease until the evening.
7. The development of which complication is possible in patients with bronchial asthma:
A. Pleural empyemas.
V. Lung gangrene.
S. Lung abscess.
D. Exudative pleurisy.
E. Asthmatic status.
8. Selective β2-stimulators include:
A. Ephedrine.
V. Zaditen.
S. Eufilin.
D. Salbutamol.
E. Platyfilin.
9. What drugs have a bronchodilator effect:
A. Salbutamol.
B. Ventolin.
S. Serevent.
D. All the listed drugs.
E. None of the listed drugs.
10. For the long-term planned treatment of a patient with bronchial asthma, it is most appropriate to prescribe drugs of the following groups:
A. Inhaled β2-agonists.
B. Prolonged theophyllines.
S. Membrane stabilizers.
D. Inhaled glucocorticosteroids.
E. Systemic glucocorticosteroids.

SITUATION TASKS.

1. A woman, 25 years old, has been in the dispensary register for bronchial asthma for 1.5 years. Lately, the attacks of nausea occur 4-5 times a week, night attacks — 2-3 times a month. Salbutamol is used for relief. A scarification test with house tick antigen is positive. Objectively: the condition is relatively satisfactory, ChD-20 in 1 min, HR-76 in 1 min, blood pressure - 120/80 mm Hg. In the lungs, breathing is vesicular. Tones of the heart are muffled, the rhythm is correct. What is the leading mechanism in the development of bronchial obstruction in the patient?

A. Bronchial hyperreactivity
B. Disorders of arachidonic acid metabolism
S. Adrenergic imbalance
D. Increased tone of the parasympathetic nervous system
E. Tracheobronchial dyskinesia

2. The patient, 48 years old, has been suffering from bronchial asthma for the last 10 years. While working on the summer cottage, he experienced difficulty breathing, cough, distant wheezing, and shortness of breath began to intensify. The drug of which pharmacological group is better to recommend to the patient for the relief of such attacks of dysentery?

A. Stimulator of β2-adrenergic receptors
B. Blocker of β 2-adrenoceptors
C. Mast cell membrane stabilizer
D. Methylxanthines
E. Inhaled glucocorticoid

3. Patient N., 30 years old, complains of nasal congestion, attacks of hay fever at night once a week. He fell ill after a respiratory infection, which he treated himself with acetylsalicylic acid. In blood tests and. sputum reveals eosinophilia. What is the most likely diagnosis?

A. Aspirin bronchial asthma
B. Bronchial asthma of physical exertion
C. Bronchial asthma, endogenous form
D. Bronchial asthma, exogenous form
E. Eosinophilic lung infiltrate

4. Patient O., 43 years old, complains of shortness of breath during physical exertion. Objectively: body temperature - 36.4°C. ChD-20 in 1 min, pulse-78 in 1 min, blood pressure 125/80 mm Hg. Barrel-shaped chest. Weakened vesicular breathing is heard above the lungs. What research should be conducted by the patient in an outpatient setting to resolve the question of the effectiveness of the prescribed bronchodilator?

A. Peak flowmetry
B. ECG monitoring of right heart overload
S. Spirographic
D. Bronchoscopic
F. Analysis of sputum (quantity and flora)

5. Patient O., 55 years old, was admitted to the clinic after an attack of bronchial asthma. For 20 years, she worked at a pharmaceutical factory and was engaged in the tableting of aminazine and sulfonamide drugs. For 10 years, he notes frequent respiratory diseases. Later,

shortness of breath appeared, periodically - subfebrile. During work in a dusty room and leaving a warm room for a cold one, there are attacks of hypothermia. There are no signs of cardiac decompensation. What is the most likely diagnosis?

A. Cardiac asthma
B. Chronic obstructive bronchitis
S. Bronchial asthma, infectious-allergic form
D. Occupational bronchial asthma, atopic form
E. Chronic non-obstructive bronchitis

6. Patient D., who has been suffering from bronchial asthma for more than 20 years, suddenly developed a persistent cough without sputum, chest pain, and increased shortness of breath against the background of a wheezing attack. On the ECG: overload of the right parts of the heart. Treatment with β-adrenergic agents has no effect. What possible complication has developed in this patient?

A. Asthmatic status
B. Cardiac asthma
S. Pulmonary edema
D. Pneumothorax
E. Thromboembolism of pulmonary artery branches

7. Patient G., 42 years old, suffering from bronchial asthma, was prescribed theophylline. In the case of reaching what concentration of the drug in the blood can we hope for an improvement in lung function without a toxic effect?

A. 21 — 25 mg/l
B. 5-20 mg/l
S. 26 — 30 mg/l
D. 31 — 40 mg/l
E. 41 — 45 mg/l

8. Patient K., 50 years old, has been suffering from bronchial asthma for 20 years. Asthma attacks develop 2-3 times a week. Takes inhaled corticosteroid, salbutamol as needed. Does not tolerate ibuprofen. Marks a constant feeling of congestion in the nose. An otorhinolaryngologist found polyps in the nose. Objectively: rhinorrhea, ChD-22 in 1 min. HR-88 in 1 min, BP-120/80 mm Hg. Vesicular weakened breathing in the lungs, scattered dry wheezes. Which type of asthma most likely occurred in the patient?

A. Atopic asthma
B. "Aspirin" asthma
S. Infectious-allergic asthma
D. Asthma of physical effort
E. Cholinergic asthma

9. Patient P., 39 years old, has been suffering from bronchial asthma for about 5 years. The attacks of dysentery are light, they are relieved by a tablet of Euphylin or two inhalations of a dosed sympathomimetic, at night between the 4th and 5th hours there is difficulty breathing, which is relieved by a dosed sympathomimetic. Which bronchodilator should be recommended to the patient before going to bed to prevent nocturnal symptoms?

A. Berotek
B. Salbutamol
S. Antrovent
D. Eufilin
E. Teopek

10. Patient L., 35 years old, has been suffering from bronchial asthma for 14 years. Lately, the attacks of sciatica occur 4-5 times a week, night attacks - 2-3 times a month. Salbutamol is used to stop attacks. Objectively: the condition is relatively satisfactory. BH - 20 in 1 min, heart rate - 76 in 1 min, blood pressure - 120/80 mm Hg. Art. In the lungs, breathing is vesicular. Tones of the heart are muffled, the rhythm is correct. What drug should be prescribed for the prevention of bronchial asthma attacks in the first stage?

A. Injectable corticosteroids
B. Regular use of salbutamol
S. Inhaled corticosteroids
D. Corticosteroids in tablets
E. Sodium cromoglicate

Answers to test tasks

1. D	6. A
2. D	7. There is
3. There is	8. D
4. There is	9. D
5. A	10 D

Answers to situational problems

1. A	6. A
2. A	7. B
3. A	8. B
4. A	9. There is
5. D	10 Yes

Summary of the lesson.

_____

_____

4. List of recommended literature (main, additional, electronic information resources):

List of recommended literature

Main:

1. 1. Propaedeutic of internal medicine: textbook / Y.I. Sick of it, O.G. YavorSCy, E.M. Neiko, etc.; edited by O.G.Yavorscy. – 6th ed., ed. and reported – K.: VSV "Medicine", 2020. – 552 p. + 12 p. color.

2. Methods of objective examination in the clinic of internal diseases: textbook posib. / O.O. Yakymenko, O.E. Kravchuk, V.V. Klochko and others. – Odessa, 2013. – 154 p.
3. Diagnostic methods in the clinic of internal medicine: textbook / A.S.Svintsitscy. - K.: VSV "Medicine", 2019. – 1008 p. + 80 p. color.

Additional:

1. Methods of examination of a therapeutic patient: textbook. posib. / S.M. Andreichyn, N.A. Bilkevych, T. Yu. Chernets. – Ternopil: TSMU, 2016. – 260 p.
2. Inquiry and physical examination of the patient of therapeutic profile: Textbook for students of III-IV courses of medical universities / V.E. Neiko, I.V. Tymkiv, M.V. Bliznyuk [et al.]. – Iv.-FrankivSC : IFNMU, 2016. – 142 p.
3. Yepishyn A.V. Propaedeutic of internal diseases with care for therapeutic patients /AB. Yepishin K. - 2015. 768s.
4. Kovaleva O.M. Propaedeutic of internal medicine / OM. Kovaleva, NA Safargalin-Kornilova // K.: Medicine 2010 - 750s.
5. Macleod's Clinical Examination / Ed. G.Douglas, F.Nicol, C.Robertson.– 13th ed.– Elsevier. 2013. – 471 p.
6. Bates' Guide to Physical Examination and History Taking /Ed. Lynn S. Bickley, Peter G. Szilagyi. – Wolters Kluwer, 2017. – 1066 p.

Electronic information resources

1. http://moz.gov.ua – Ministry of Health of Ukraine
2. www.ama-assn.org – American Medical Association / American Medical Association
3. www.who.int – World Health Organization
4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
5. http://bma.org.uk – British Medical Association
6. www.gmc-uk.org - *General Medical Council* (*GMC*)
7. www.bundesaerztekammer.de – German Medical Association
8. https://onmedu.edu.ua/
9. https://onmedu.edu.ua/kafedra/propedevtiki-vnutrishnih-hvorob-ta-terapii/
10. http://pvb. odessa. ua/index. html

PRACTICAL TRAINING

Practical lesson No. 2

Subject:COPD Emphysema of the lungs. Etiology. Pathogenesis. Clinic. Treatment. The role of the dentist in prevention.

Goal:to teach applicants to recognize the main symptoms and syndromes of COPD, emphysema of the lungs, to familiarize with physical and laboratory-instrumental methods of research, indications and contraindications for their conduct, methods of their implementation, to teach applicants to independently interpret the results of studies, to recognize and diagnose complications of COPD, to determine the main directions treatment of COPD and pulmonary emphysema.

Basic concepts: Chronic obstructive pulmonary disease, emphysema, etiology and pathogenesis. Classification of COPD and pulmonary emphysema. Syndrome of increased airiness of the lungs. Bronchoobstructive syndrome. Spirography. Laboratory signs. Principles and methods of prevention and treatment. Complications of COPD and pulmonary emphysema.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (to define COPD, pulmonary emphysema, describe etiology, pathogenesis, main clinical syndromes, be able to conduct a patient survey, examination, palpation, percussion, auscultation of the lungs, know the method of conducting and the main indicators of spirography);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

- Definition of concepts of COPD.
- Etiology and pathogenesis of COPD.
- Definition of the concept of pulmonary emphysema.
- The role of the dentist in the diagnosis of complications from the oral cavity in patients with COPD.
- The role of the dentist in the prevention of complications from the oral cavity in COPD patients with long-term use of inhaled corticosteroids.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients, conducting curation of a patient with COPD, emphysema of the lungs, conducting laboratory research, determining the treatment scheme):

_ content of tasks (to conduct a survey of a patient with COPD, emphysema of the lungs);

_ recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

_ requirements for work results, including registration;

_ control materials for the final stage of the lesson.

1. The main external risk factor in the development of COPD is:

Answer standard: smoking.

2. Name the signs of pulmonary insufficiency in the correct sequence depending on the degree of severity

Answer standard:

1) Shortness of breath appears during normal exercise.
2) Shortness of breath appears during minor physical exertion.
3) Shortness of breath bothers at rest.

3. Establish the correct sequence of pharmacotherapy depending on the stage and degree of severity of COPD.

1) Exclude risk factors + long-acting bronchodilator.
2) Exclude risk factors + short-acting bronchodilator.
3) Exclude risk factors + inhaled corticosteroid.
4) Exclude risk factors + surgical treatment, long-term oxygen therapy.

Answer standard: 2), 1), 3), 4)

4. What groups of drugs are included in the standard treatment of COPD?

1) Antibiotics
2) Inhaled glucocorticoids
3) Beta blockers
4) Short-acting bronchodilators
5) Anticoagulants
6) ACE inhibitors
7) Antagonists of calcium ions
8) Long-acting bronchodilators
9) Antiplatelet agents

Answer standard: 1), 2), 4), 8).

5. Determine the compliance of drugs to groups of drugs that are used to treat patients with COPD:

1)	Short-acting inhaled bronchodilator	A) Euphilin
2)	The inhaled bronchodilator is prolonged	B) Ipratropium bromide
3)	Inhaled corticosteroid	C) Fenoterol
4)	Systemic corticosteroid	D) Salmeterol
5)	Cholinolytic	D) Prednisolone
6)	Broncholytic xanthine group	E) Budesonide

Answer standard: 1 – B; 2 – G; 3 – E; 4 – D; 5 – B; 6 – A 24

Summary of the lesson.

_____

_____

4. List of recommended literature (main, additional, electronic information resources):

PRACTICAL TRAINING

Practical lesson No. 3

Subject: Pneumonia. Etiology. Pathogenesis. Clinic. Treatment. The role of the dentist in prevention.

Goal:to teach applicants to recognize the main symptoms and syndromes of pneumonia, to familiarize with physical and laboratory-instrumental methods of research, indications and contraindications for their conduct, methods of their implementation, to teach applicants to independently interpret the results of conducted research, to recognize and diagnose complications of pneumonia, to determine the main directions of treatment.

Basic concepts: Etiology and pathogenesis of pneumonia, pulmonary insufficiency, non-hospital and in-hospital pneumonia, acute and chronic pulmonary insufficiency, prognosis of life and working capacity in pneumonia and pulmonary insufficiency, primary and secondary prevention of pneumonia, influence of dental pathology and diseases of the dental and jaw system on the occurrence and course of pneumonia and pulmonary insufficiency.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational measures (congratulations of the applicants, verification of those present, notification of the topic, the purpose of the lesson, motivation of the applicants of higher education regarding the study of the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (define pneumonia, name the classification of pneumonia, describe the etiology, pathogenesis, main clinical syndromes, be able to conduct an interview of a patient with pneumonia, examine the patient, palpation and percussion of the chest, auscultation of the lungs, know the method of conducting and main indicators of spirography);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

- Define the concept of pneumonia.
- Determine the etiology of pneumonia.
- Specify the key links in the pathogenesis of pneumonia.
- Give the main provisions of the modern clinical classification of pneumonia.
- Name the factors contributing to the occurrence of pneumonia.
- Name the typical clinical manifestations of croupous and focal pneumonia.
- Make a plan for laboratory and instrumental examination of a patient with pneumonia.
- State the complications of pneumonia.
- Name the principles of treatment of pneumonia.
- Specify the main groups of antibacterial drugs used in the treatment of patients with pneumonia.
- The concept of empiric and stepwise antibacterial therapy of pneumonia.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients, conducting curation of a patient with pneumonia, conducting laboratory research, determining the treatment scheme):

- task content (to conduct a survey of a patient with pneumonia);
- recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
- requirements for work results, including registration;
- control materials for the final stage of the lesson.

Task1.
The main pathogen that leads to the occurrence of croup pneumonia
is: Answer standard: pneumococcus.

Task 2.
Name the types of pneumonia in the correct sequence depending on the frequency of occurrence.
Answer standard:
1) Non-hospital;
2) Hospital;
3) Aspiration;
4) Pneumonia in persons with severe immune disorders.

Task 3.
Establish the correct sequence of periods of morphological changes in the lungs with croup pneumonia.
1) Red rash
2) Exudations
3) Gray skin
4) Completion
Answer standard: 2), 1), 3), 4)

Task 4.
What groups of drugs are included in the standard treatment of uncomplicated pneumonia?
1) Cephalosporins
2) Glucocorticoids
3) Beta blockers
4) Fluoroquinolones
5) Anticoagulants
6) Antiplatelet agents
7) Antagonists of calcium ions short acting
8) Penicillins
9) ACE inhibitors
10) Macrolides
Answer standard: 1), 4), 8), 10)

Task 5.
Determine the appropriateness of the drugs groups of medicines used to treat patients with pneumonia.

1)	Fluoroquinolones	A) Ceftriaxone
2)	Cephalosporins	B) Levofloxacin
3)	Macrolides	B) Clarithromycin
4)	Tetracyclines	D) Thienam
5)	Aminoglycosides	D) Doxycycline
6)	Carbapenems	E) Tobramycin

Answer standard: 1 – B; 2 – A; 3 – B; 4 – D; 5 – E; 6 – G

Task 6.
The patient has a chest cell of normal shape, there is no displacement of the mediastinum, on percussion a dull sound within the entire lower lobe of the right lung, on auscultation - breathing is weakened, clear crepitation. Your diagnosis?
1. croup pneumonia
2. pulmonary emphysema
3. pneumothorax
4. bronchiectasis
5. pulmonary fibrosis

Answer standard: 1

Task 7.
Name the main X-ray sign of croup pneumonia:
1. atelectasis of the lung
2. homogeneous darkening according to fate or segment
3. severe pulmonary picture
4. focal shadows
5. total reduction of transparency.

Answer standard: 2

Task 8.
Name a sign that does not correspond to croup pneumonia in the hepatization phase:
1. lag of one half of the chest during breathing
2. dullness in the corresponding destiny
3. fine-vesicular moist rales
4. increased bronchophonia
5. bronchial breathing in the area of blunting

Answer standard: 3

Task 9.
If pneumococcal pneumonia is suspected, the following should be prescribed:

1. oletetrin
2. streptomycin
3. penicillins
4. erythromycin
5. chloramphenicol

Answer standard: 3

Task 10.

With which causative agent of pneumonia, destruction of the lungs most often occurs:

1. pneumococcus
2. streptococcus
3. staphylococcus
4. legionella
5. virus

Answer standard: 3

Situational tasks

Task 1.

Patient V., 45 years old, was hospitalized with complaints of pain in the left half of the chest, which worsens with deep breathing, cough, severe chills, temperature 38.7°C, general weakness, fatigue, aching in the limbs. He became acutely ill after hypothermia. Objectively: the condition is severe, a febrile blush on the cheeks, the position is forced: lying on the affected side of the chest, percussively dull dullness of the percussion sound in the lower parts of the left lung, auscultatory-weakened vesicular breathing, crepitation, cardiac activity is rhythmic, heart rate - 106 /min., blood pressure - 110/80 mm Hg.

1) Your diagnosis?
2) What methods are needed to verify the diagnosis?
3) Tactics of treatment (list groups of drugs)?

Answer standard:

1) No-hospital croup pneumonia of the lower lobe of the left lung, III group with a mild course.
2) X-ray examination of the chest cavity, general and bacterial examination of sputum for flora and sensitivity to antibiotics,
general analysis of blood, urine, blood glucose.
3) Antibacterial therapy, antipyretics, antioxidants, detoxification drugs.

Task 2.

A 37-year-old patient, after hypothermia, developed a cough, initially dry, later with mucous-purulent sputum, body temperature rose to 37.8°C, general weakness, headache, increased sweating, adynamia. There is a history of smoking for 10 years, sometimes bronchitis. Objectively: the condition is of medium severity, in the lungs - hard breathing, in

the lower parts of the left lung - a small number of small alveolar wheezes, there is also an increase in bronchophonia. Heart activity is rhythmic, tones are muffled, heart rate - 76/min., blood pressure - 120/80 mm Hg. The liver and spleen are not enlarged.

1) Your diagnosis?
2) Examination plan?
3) Is there a need to hospitalize the patient?
4) Prescribe treatment in prescriptions.

Answer standard:

1) No-hospital pneumonia in the lower lobe of the left lung, II group, mild course.
2) General blood and urine analysis, general and bacteriological sputum analysis, blood glucose, Rh-graphy of chest organs.
3) No, given that the patient belongs to the II group with a mild course of the disease.
4) Amoxiclav, ambroxol, multivitamins, physical therapy, physiotherapy (ultraviolet radiation, inductothermy, electrophoresis).

Summary of the lesson.

_____

_____

PRACTICAL TRAINING

Practical lesson No. 4

Subject: Pleurisy Pleural syndrome. Etiology. Pathogenesis. Clinic. Principles of diagnosis and treatment.

Goal:to teach applicants to recognize pleural syndrome and the syndrome of the presence of fluid in the pleural cavity, to familiarize with the physical methods of research in dry and exudative pleurisy, to familiarize with the instrumental research methods used for the diagnosis of pleurisy, indications and contraindications for their conduct, the method of pleural puncture, to teach applicants independently interpret the results of conducted research, recognize and diagnose complications in pleurisy, teach applicants to determine the tactics of treatment in dry and exudative pleurisy.

Basic concepts: Definition of pleurisy, etiology and pathogenesis. Classification of pleurisy. Main complaints and physical examination data in dry and exudative pleurisy. Damoiseau line. Garliand and Rauchfuss-Grocco triangles. Respiratory failure syndrome. Laboratory differences of exudate and transudate. The value of data from a general blood test and sputum examination. Principles and methods of diagnosis and emergency care for pleurisy.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for theoretical readiness of applicants to perform practical classes (define dry and exudative pleurisy, describe etiology, pathogenesis, main clinical syndromes, be able to conduct a patient survey and determine the characteristics of pleural pain, conduct an examination, palpation, percussion, auscultation of the lungs, know the main radiological signs with dry and exudative pleurisy);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

- Formulate the definition of pleurisy.
- Determine the etiology of pleurisy.
- Specify the key links in the pathogenesis of pleurisy.
- Give the main provisions of the modern clinical classification of pleurisy.
- Name the factors contributing to the occurrence of pleurisy.
- Name the typical clinical manifestations of dry and exudative pleurisy.
- Make a plan for laboratory and instrumental examination of a patient with pleurisy.
- State the complications of pleurisy.
- Name the principles of pleurisy treatment.
- Specify the main groups of antibacterial drugs used in the treatment of patients with pleurisy.
- Treatment of pleurisy depending on the underlying disease.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients, conducting curation of a patient with pleurisy, conducting laboratory research, determining the treatment scheme):

_ task content (to conduct a survey of a patient with dry and exudative pleurisy);

_ recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

_ requirements for work results, including registration;

_ control materials for the final stage of the lesson.

Task 1. The main pathogen that causes tuberculous pleurisy is:
Answer standard: Mycobacterium tuberculosis.

Task 2. Name the types of pleurisy in the correct sequence depending on the time of occurrence.
Answer standard: 1) Dry pleurisy; 2) Exudative pleurisy;

Task 3. What are the symptoms of dry pleurisy?
1) chest pain
2) increasing shortness of breath
3) general weakness

4) increase in body temperature
5) an increase in the volume of the chest on the side of the impression
6) pleural friction noise
7) dull percussion sound
8) reduction of voice tremor
9) frequent shallow breathing
Answer standard: 1), 3), 4), 6), 9).

Task 4. Determine the appropriateness of the drugs to the groups of drugs used to treat patients with pneumonia.
1) Fluoroquinolones A) Ceftriaxone
2) Cephalosporins B) Levofloxacin
3) Macrolides B) Clarithromycin
4) Tetracyclines D) Thienam
5) Aminoglycosides D) Doxycycline
6) Carbapenems E) Tobramycin
Answer standard: 1 – B; 2 – A; 3 – B; 4 – D; 5 – E; 6 – G

Task 5. Alleviation of voice tremor is characteristic of:
1. bronchiectasis
2. exudative pleurisy
3. lung abscess in the cavity stage
4. focal pneumonia
5. croupous pneumonia
Answer standard: 2).

Task 6. Dry pleurisy is accompanied by all the listed symptoms, except:
1. chest pain
2. dry cough
3. sweating
4. low fever
5. acrocyanosis
Answer standard: 5).

Task 7. The most effective method of detecting a small amount of fluid in the pleural cavity is:
1. X-ray examination in the usual position - orthoposition
2. radiography
3. computed tomography
4. lateroscopy (x-ray in lateroposition)
5. magnetic resonance imaging
Answer standard: 4).

Task 8. A 55-year-old patient has lagging of the right half of the chest during breathing, dullness below the level of the 3rd rib, weakening of breathing and bronchophonia in the same area. During X-ray examination, the heart is shifted to the left. A likely diagnosis?
1. exudative pleurisy
2. croup pneumonia
3. emphysema of the lungs
4. pneumofibrosis
5. pneumothorax
Answer standard: 1

Situational task 1.
Patient, 35 years old. She was hospitalized with complaints of shortness of breath, feeling of pressure in the left half of the chest, general weakness, temperature of 38.7°C, sweating. She fell ill a week ago, when the temperature rose after hypothermia, she developed a cough, fatigue, and aching limbs. She was treated on an outpatient basis, the symptoms tend to increase. Objectively: the condition is severe, slight cyanosis of the lips, BH 28 in 1 min. , heart rate – 104/min., blood pressure – 130/80 mm Hg, the left half of the chest lags behind in the act of breathing, the intercostals are smoothed. On percussion below the angle of the scapula on the left, dullness. In the same area, breathing is sharply weakened, in the rest - breathing is hard with single wheezes. The heart shadow is moderately shifted to the right. Blood analysis: l-19 G/l, ESR- 35 mm/h.
1) Your diagnosis?
2) What methods are needed to verify the diagnosis?
3) Tactics of treatment (list groups of drugs)?
Answer standard:
1) Left-sided exudative pleurisy.
2) X-ray examination of the organs of the chest cavity, general and bacterial examination of sputum for flora and sensitivity to antibiotics, pleural puncture, general analysis of blood, urine, blood glucose.
3) Antibacterial therapy, antipyretics, antioxidants, detoxification drugs.

Situational task 2. A 38-year-old patient was hospitalized with complaints of a dry cough, an increase in body temperature to 37.6°C, general weakness, chest pain when breathing. There is a history of chest trauma. Objectively: pallor of the skin, lagging of the right half of the chest during breathing. Percussion did not reveal any abnormalities. Auscultatory breathing is weakened, pleural friction noise on the right in the lower parts. X-ray - without pathology. General blood analysis: leukocytosis, moderately elevated ESR.
1) Your diagnosis?
2) Why did the chest pain occur?
3) What should be the medical tactics?
Answer standard:

1) Right-sided post-traumatic dry pleurisy.
2) Irritation of pain receptors of the pleura.
3) Careful movement, anti-inflammatory drugs, analgesics.

Summary of the lesson.

_____

_____

4. List of recommended literature (main, additional, electronic information resources):

PRACTICAL TRAINING

Practical lesson No. 5

Subject: Hypertensive disease. Symptomatic hypertension. Etiology. Pathogenesis. Clinic. Principles of diagnosis and treatment.

Goal:acquaint students with the concepts of hypertension and symptomatic hypertension, recognize the main symptoms and syndromes of hypertension, conduct a physical examination, prescribe laboratory and instrumental research methods and interpret their results, recognize and diagnose complications of hypertension, teach students how to prescribe treatment for hypertension and hypertensive crisis.

Basic concepts:blood pressure, hypertension, nephrogenic, endocrine, cardiovascular, neurogenic, exogenous hypertension, degrees of increased blood pressure (BP), classification of hypertension, target organs in hypertension, risk stratification for assessing prognosis in patients with hypertension, basic principles treatment. Complicated and uncomplicated hypertensive crises.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (to define hypertensive disease and symptomatic arterial hypertension, describe the etiology, pathogenesis, main clinical syndromes with increased blood pressure, be able to conduct a patient survey, examination, palpation, percussion, auscultation of the lungs, draw up a plan for laboratory and instrumental studies, evaluate their results, formulate a diagnosis of hypertension, provide recommendations on lifestyle modification and drug treatment of

hypertension);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

- Define arterial hypertension.
- Classification of arterial hypertension by blood pressure level.
- Concept of primary (essential) and secondary (symptomatic) arterial hypertension.
- Classification of arterial hypertension depending on the damage to the target organs.
- Nephrogenic arterial hypertension.
- Endocrine arterial hypertension.
- Hemodynamic (cardiovascular), neurogenic and exogenous arterial hypertension.
- Risk stratification of patients to assess the prognosis.
- Tactics of the doctor regarding arterial hypertension, concept of target blood pressure.
- Basic approaches to non-drug treatment. Lifestyle modification.
- Groups of antihypertensive drugs. Appointment of combined therapy.
- Uncomplicated hypertensive crises.
- Complicated hypertensive crisis. Tactics of the doctor.

3. Formation of professional skills and abilities (mastering the skills of interviewing patients, conducting curation of a patient with hypertension, interpreting the results of an ECG, echocardiography, X-rays of the heart, daily blood pressure monitoring, lipidograms, determining the treatment regimen):

_ content of tasks (to conduct a survey of a patient with increased blood pressure);

_ recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

_ requirements for work results, including registration;

_ control materials for the final stage of the lesson.

Task 1. In a 40-year-old patient, an AT of 170/102 mmHg was detected during a professional examination. Signs of hypertrophy of the left stomach were recorded on the ECG. Assess the patient's AT level:

A. Normal.
B. Borderline hypertension.
B. Moderate arterial hypertension.
D. Mild arterial hypertension.
D. Severe arterial hypertension.
Answer standard: V.

Task 2. A hypertensive patient complained of weakness, nausea, headache, and palpitations. In the morning, the patient had a nosebleed. Ps - 110 bpm, rhythmic, BP - 230/110 mm Hg. What is the most likely diagnosis?

A. Hypertensive crisis, uncomplicated
B. Hemorrhagic stroke

B. Paroxysmal tachycardia
D. Hypertensive crisis, complicated
D. Hemorrhagic vasculitis
Answer standard: G.

Task Z. The patient, 40 years old, suffers from stage II hypertension with an increase in blood pressure to 180/110 mm Hg. On the fundus, it is more likely to detect the following changes:
A. There are no changes.
B. Minimal segmental narrowing of arteries and arterioles.
B. Narrowing of lumen of arteries and arterioles, thickening of their walls, undulation and expansion of veins.
D. Narrowing of the lumen of arteries and arterioles, thickening of their walls, undulation and expansion of veins, large and small hemorrhages, "cotton wool spots".
D. Narrowing of the lumen of arteries and arterioles, thickening of their walls, undulation and expansion of veins, bilateral swelling of the nipples of the optic nerves.
Answer standard: V.

Task 4. The patient, 42 years old, height 174 cm, weight 100 kg, has an increase in blood pressure to 190/108 mm Hg, headaches, dizziness. The activity of the heart is rhythmic, the accent of the II tone is on the aorta. Pulse 100 in 1 min. On the ECG: R V5 > R V4, R V6 + S V2 = 50 mm. Blood sugar - 5.2 mmol/l. Urine analysis: relative density 1020, protein - 0.033 g/l, leukocytes - 3-4 in the field of vision. 1. Your previous diagnosis:
A. Hypertensive disease of the 1st century.
B. Hypertensive disease II century.
B. Hypertensive disease of the III century.
G. Chronic glomerulonephritis, symptomatic arterial hypertension.
D. Atherosclerosis of the aorta, arterial hypertension.
Answer standard: B

Task 5. You will start the treatment with one of the indicated drugs, except (taking into account the pulse rate):
A. Metoprolol.
B. Nifedipine.
B. Enalapril.
G. Diltiazem.
Answer standard: B

Task 6. Non-pharmacological methods of treatment of this patient should include everything except:
A. Reducing the use of table salt to 5 g per day.
B. Increasing the use of carbohydrates.

B. Reduction of smoking.
D. Decrease in body weight.
D. Increasing physical activity.
Answer standard: B

Task 7. A 60-year-old patient, who has been suffering from hypertension for 20 years, suddenly had an attack of shortness of breath after a stressful situation. Objectively: orthopneic position, Ps - 120 in 1 min., BP 210/120 mm Hg. Art. The first sound over the apex of the heart is weakened, an additional sound is heard in diastole, BH - 32/min. Breathing over the lower parts of the lungs is weakened, single inaudible wet small-vesicular rales.
1. Your previous diagnosis:
A. Hypertensive crisis, uncomplicated
B. Hemorrhagic stroke
B. Paroxysmal tachycardia
D. Hypertensive crisis, complicated
D. Myocardial infarction
Answer standard: G

2. What complication developed in the patient?
A. Acute left ventricular failure.
B. Acute disturbance of cerebral circulation
B. Thromboembolism of branches of the pulmonary artery
G. Pneumonia.
D. Layering of the aorta
Answer standard: A

3. When providing assistance, you will prescribe all drugs to the patient, except:
A. Morphine.
B. Enalapril.
B. Furosemide.
G. Nitroglycerin.
D. Propranolol
Answer standard: D

Task 8. The patient complains of weight gain over the past 1.5-2 years, dry mouth, headache, and irregular menstrual cycle. Objectively: height - 160 cm, body weight - 130 kg; subcutaneous adipose tissue is distributed according to the dysplastic type, there are purple stretch marks on the skin of the abdomen. AT - 170/110 mm Hg. Art. Fasting glycemia - 7.5 mmol/l. State the most likely diagnosis?
A. Itsenko-Cushing's disease.
B. Hypertensive disease.

B. Metabolic syndrome.
D. Diabetes mellitus, type 2.
D. Dietary and constitutional obesity.
Answer standard: G

Task 9. The patient, 26 years old, has AT on the hands 176/116 mm Hg, on the legs 140/86 mm Hg. The indicated hypertension is characteristic of:
A. Vasorenal hypertension.
B. Pheochromocytomas.
B. Coarctation of the aorta.
Mr. Kona syndrome.
D. Itsenko-Cushing diseases.
Answer standard: V

Task 10. A 39-year-old woman was found to have elevated blood pressure. The patient notes weakness and paresthesias in the limbs, polyuria. Heart rate - 94/min., AT - 190/105 mm Hg. Art. In urine: specific gravity - 1012, protein - 0.1 g/l, alkaline reaction, L - 3-4 in p/z, Er - 2-3 in p/z. What changes in biochemical indicators in the blood serum of this patient should be expected?
A. Hyperkalemia, hyponatremia.
B. Hypokalemia, hypernatremia.
B. Increased cortisol levels.
D. Increasing the level of T3, T4.
D. Hyperglycemia.
Answer standard: B

Task 11. The patient, 22 years old, suddenly had a seizure for the third time in her life, which was accompanied by tremors, pale skin, tachycardia, increased blood pressure to 280/120 mm Hg, pain in the abdomen, in the area of the heart, fear of death. The attack, like the previous ones, continued for 15 minutes. and suddenly stopped on its own. After that, the patient released 350 ml of light urine.
1. Select the leading syndrome:
A. Hypertension syndrome.
B. Sympatho-adrenal crisis.
B. Pain in the area of the heart.
G. Arterial hypertension and abdominal pain.
Answer standard: B

Summary of the lesson.

_____

_____

4. List of recommended literature (main, additional, electronic information resources):

PRACTICAL TRAINING

Practical lesson No. 6

Subject: Atherosclerosis. Coronary heart disease. Classification. Etiology. Pathogenesis. Clinic. Principles of diagnosis and treatment. Acute coronary death. Principles of cardiopulmonary resuscitation.

Goal:to teach applicants to recognize the main symptoms and syndromes of coronary heart disease, to familiarize with physical research methods, with additional laboratory and instrumental research methods that are used for the diagnosis of coronary heart disease, indications and contraindications for their conduct, methods of their implementation, to teach applicants to independently interpret the results of conducted studies, recognize and diagnose complications of coronary artery disease, learn the concepts of acute coronary death and the principles of cardiopulmonary resuscitation.

Basic concepts:atherosclerosis, ischemic heart disease, sudden coronary death, angina pectoris, acute myocardial infarction, cardiosclerosis, painless form of coronary artery disease, acute coronary syndrome, reperfusion, thrombolysis, percutaneous coronary intervention.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (define atherosclerosis, coronary heart disease, describe etiology, pathogenesis, main clinical syndromes, be able to conduct a patient survey, examination, palpation, percussion, auscultation of the heart, know the technique of conducting an ECG and the main approaches to it interpretations, EchoCS, cycle ergometry, coronary angiography);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

- Define atherosclerosis.
- Definition of coronary heart disease.
- Clinical classification of coronary artery disease - the main forms.
- Concept of sudden coronary death.
- Concept of acute coronary syndrome.

- To describe the concept of karyosclerosis.
- Main complaints of patients with coronary heart disease.
- Mandatory laboratory research methods.
- Mandatory instrumental methods of examination.
- BA classification.
- Non-drug treatment of CHD.
- Principles of cardiopulmonary resuscitation in sudden coronary death.
- The main groups of drugs prescribed for patients with coronary artery disease.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients, conducting curation of a patient with coronary heart disease, prescribing laboratory tests, determining the treatment scheme):

_ the content of tasks (to conduct a survey of a patient with coronary artery disease);

_ recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

_ requirements for work results, including registration;

_ control materials for the final stage of the lesson.

Task 1. Patient T., 45 years old, turned to the dentist with complaints of intense aching pain in the lower jaw on the left, which intensifies during fast walking. The pain first appeared 2 days ago. This is the first time he sought medical help in this regard. In the anamnesis of coronary artery disease: angina pectoris. Indicate the primary diagnostic measures in this case:

A. Examination of the oral cavity
B. Panoramic P-graph of the jaws
C. Blood pressure measurement
D. General clinical blood analysis
AND. ECG registration in 12 leads on the spot
Answer standard: E

Task 2. A 58-year-old man, who is in the examination room of the department of maxillofacial surgery due to an injury, suddenly lost consciousness. According to the attendants, he suffered from arterial hypertension and suffered a myocardial infarction. Objectively: the skin is pale, there is no pulse on α. carotid, on the ECG – ventricular fibrillation. What are the most expedient measures?

A. Electropulse therapy
B. Transesophageal cardiac stimulation
C. Vagus tests
D. Intravenous administration of lidocaine
AND. Intracardiac injection of adrenaline
Answer standard: A.

Task 3.A 57-year-old patient notes during the year 1-2 times a month in the morning attacks of squeezing pain behind the sternum, radiating to the neck, lower jaw, under the left scapula, passing within 5 minutes after taking nitroglycerin. On the ECG at the time of the attack, there was an elevation of the ST segment in leads V2-V5 by 8 mm. On the ECG after stopping the ST attack on the isoline. What is the diagnosis of this patient?

A. DDPP, cervicothoracalgia
B. Inflammation of the esophagus
C. CHD: Prinzmetal's angina
D. CHD: myocardial infarction
AND. Dissecting aneurysm of the aorta

Answer standard: S

Task 4. In case of sudden death outside the hospital, the chance of survival does not exceed 10%. Therefore, its primary prevention is of great importance. The prescription of which drug from the given classes is the most effective in reducing the risk of sudden death in a patient with heart failure?

A) Calcium antagonists.
B) Diuretics
C) β-blockers.
D) Cardiac glycosides.
AND) Nitrates.

Answer standard: S

Task 5. Patient M, 61 years old, turned to the doctor with complaints of chest pain of a squeezing nature, which occurred on the same day after physical exertion and lasted for 3 hours. The pain radiated to the neck and lower jaw and went away on its own after 15 minutes at rest. A similar attack was 2 weeks ago. On inspection: the condition is relatively satisfactory. The borders of the heart are expanded to the left by 1 cm. Heart sounds are sonorous, pulse 80/min, blood pressure 135/85 mm Hg. Clinical analysis of blood and urine - without features. ECG: LVogram, high sharp T waves in V2-V4 leads, single extrasystoles.

1. Your previous diagnosis:
A. Coronary heart disease: angina pectoris that occurred for the first time. NC 0.
B. Coronary heart disease. Stable angina pectoris. NC 0.
C. Coronary heart disease. Stable angina of stress and rest. NC 0.
D. Coronary heart disease. Stable angina at rest. NC 0.
AND. Coronary heart disease. Progressive angina pectoris.

Answer standard: A

2. The examination should be started:
A. From the examination of the oral cavity
B. From radiography of the jaws

C. With 12-lead ECG
D. From X-ray of the chest
AND. From the determination of the content of Troponin-I
Answer standard: S.

3. What method of treatment is the most appropriate in such a case?
A. Use of ACE inhibitors
B. Use of sympathomimetics.
C. The use of digoxin with eufilin.
D. Appointment of thrombolytic drugs.
E. Appointment of nitrates.
Answer standard: E.

Task 6. Patient B., 65 years old, a disabled person of the III group, came to the dentist for an appointment regarding prosthetics, on the way he noticed pain behind the sternum, shortness of breath when walking a distance of 100-200 m. He had a myocardial infarction two years ago, and smokes cigarettes. Blood pressure = 150/75 mm Hg. On the ECG: HR=100, pathological Q in I, aVL V1-V4, ST elevation and high acute T in II, III, aVF.
1. Formulate a preliminary diagnosis:
A. CHD. Angina tension, IV FC.
B. CHD. Angina is spontaneous
C. CHD. Unstable angina
D. CHD. Angina of tension III FK. Postinfarction cardiosclerosis
AND. CHD. Acute transmural widespread anterior-pericardial-apical myocardial infarction.
Standard answer: D.

Summary of the lesson.

_____

_____

4. List of recommended literature (main, additional, electronic information resources):

Basic: 1. Internal diseases: Study guide / O.O. Yakymenko, O.E. Kravchuk, V.V. Klochko, D.M. Sebov, L.N. Efremenkova; Under the editorship O. O. Yakymenko. – Odesa: Odesa. national honey. University, 2012. – 154 p.
2. Propedeutics of internal medicine for dentists: textbook for students of dental faculties / K. O. Bobkovich, E. I. Dzis, V. M. Zhebel, R. I. Ilnytskyi, I. P. Kaidashev; Under the editorship Prof. M.S. Rasina. - Poltava. - 207 p.
Additional: 1. Modern classifications and standards of treatment of diseases of internal organs. Emergency conditions in therapy / Ed. Prof. Yu.M. Mostovoy – 20th ed., add. and

processing. - Kyiv: DZK Center, 2016. - 688 p.
Electronic information resources: Unified clinical protocol of primary, secondary (specialized) and tertiary (highly specialized) medical care "Stable ischemic heart disease", approved by the Order of the Ministry of Health of Ukraine dated December 23, 2021. #2857.https://zakon.rada.gov.ua/rada/show/v2857282-21#Text

PRACTICAL TRAINING

Practical lesson No. 7

Subject: Acute heart failure (left and right ventricular) and acute vascular insufficiency. Chronic heart failure. Etiology. Pathogenesis. Clinic. Principles of diagnosis and treatment.
Goal:heart failure is a severe, widespread clinical syndrome that is a consequence of many heart diseases, has a progressive nature, significantly reduces the life expectancy of patients and worsens its quality. The prevalence of HF among the European population increases with age from 0.9% in people 55-64 years old to 17.4% - from 85 years old (Bleumink G.S., 2004). The prognosis of patients with CHF is very serious: the mortality of such patients during the year is 15-25%, reaching 40-50% in patients with severe CHF (Voronkov L.G., 2004; Cowburn P.J., 1998).
The unfavorable prognosis of acute and chronic HF, on the one hand, and the achievements of modern evidence-based medicine regarding the possibility of its modification during pathogenetic treatment, on the other hand, determined the urgency of finding new criteria for patient risk stratification and monitoring the effectiveness of therapeutic measures. The presented recommendations were developed based on the recommendations of the European Society of Cardiology, but taking into account real clinical practice in Ukraine.
The recommendations are based on evidence from multiple clinical trials and take into account current knowledge about acute heart failure. These studies were conducted in selected populations of patients with certain clinical characteristics that do not always reflect the actual clinical practice of the physician.
Acute heart failure is an important health care problem. Mortality within 6 months due to ACS without ST segment elevation according to the Euro Heart Survey and the GRACE registry is 12%. However, the results of recent studies indicate the possibility of improving the short-term and long-term prognosis when applying a clinical strategy that includes careful risk stratification in combination with the use of modern therapeutic agents and revascularization procedures in a selected group of patients.
The purpose of the class is to learn the modern classification and pathogenesis of acute and chronic heart failure, their pathophysiological mechanisms, clinic and basic approaches to diagnosis and treatment.
Basic concepts:acute heart failure, left ventricular failure, right ventricular failure, acute vascular failure, chronic heart failure.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for theoretical readiness of applicants to perform practical classes (define acute heart failure, acute vascular insufficiency, chronic heart failure, describe the pathogenesis of these conditions, main clinical syndromes, be able to conduct a patient survey, examination, palpation, percussion, auscultation, know the possibilities of additional laboratory and instrumental examination methods);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

1. Modern classification of acute heart failure, its main classifications;
2. Pathophysiological mechanisms and the most frequent etiological factors of acute heart failure;
3. Diagnosis of various variants of acute heart failure;
4. Types of acute heart failure, their diagnosis;
5. Methods of laboratory and instrumental examination of a patient with acute heart failure;
6. Clinical manifestations of acute heart failure;
7. Instrumental methods of diagnosis, diagnostic possibilities and screenings for conducting;
8. Modern standards of treatment and recommendations for the management of a patient with acute heart failure;
9. Primary and secondary prevention of GOS;
10. Classification of chronic heart failure;
11. Pathophysiology and the most frequent etiological factors of CHF;
12. Diagnosis of chronic heart failure;
13. Types of chronic heart failure, their diagnosis;
14. Methods of laboratory and instrumental examination of a patient with CHF;
15. Clinical manifestations of CHF;
16. Instrumental methods of diagnosis, diagnostic possibilities and screenings for conducting;
17. Modern standards of treatment and recommendations for the management of a patient with CHF;
18. Prevention of CHF - primary and secondary;

3. Formation of professional abilities and skills (mastering the skills of interviewing patients with acute and chronic heart failure, conducting curation of a patient with CHF, prescribing laboratory tests, determining the treatment regimen):

_ the content of tasks (to conduct a survey of a patient with CHF);

_ recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
_ requirements for work results, including registration;
_ control materials for the final stage of the lesson.

1. The main signs of the development of alveolar edema of the lungs include:
A. Cough without sputum
B. Dyspnea
C. Palpitation
D. Pain behind the sternum
E. Dysentery with sputum discharge in the form of foam.
Answer standard: Well.

2. Primary measures for the treatment of fainting are:
A. Cardiopulmonary resuscitation
B. Electropulse therapy
C. Providing a horizontal position, providing access to fresh air, inhalation of ammonia.
D. Call an ambulance
E. All answers are correct.
Answer standard: S.

The applicant S., who crossed the threshold of the operating room for the first time, suddenly felt weak, dizzy, yawned and nauseated, sweating increased, and his limbs became numb. The pulse is small, slow, weak filling. Blood pressure is low. Pupils are dilated, lively react to light. What should be done to provide emergency care?
A. Introduce cardiac glycosides
B. Enter pentamine
C. Give the recipient a sitting position
D. Enter calcium gluconate
E. Bring ammonia to the nose
Answer standard: Well.

4. A 62-year-old patient was admitted to the reception department with an attack of dysentery. She has been suffering from hypertension for 16 years, suffered a myocardial infarction 3 years ago. Objectively: orthopnea, pale skin, cold sweat, acrocyanosis. Blood pressure - 230/130 mm Hg. st., pulse - 108/min., respiratory rate - 36/min. Auscultation:

scattered dry rales over all parts of the lungs, in the lower parts - wet medium-bubble. What is the most likely complication?

A. Acute myocardial infarction
B. Acute left ventricular failure
C. An attack of bronchial asthma
D. Thromboembolism of the pulmonary artery
E. Acute right ventricular failure

*Answer standard:*IN.

5. A 60-year-old patient, who has been suffering from hypertension for 20 years, suddenly had an attack of shortness of breath after tooth extraction. Objectively: orthopneic position, pulse - 120/min., blood pressure - 210/120 mm Hg. Art. And the tone over the apex of the heart is weakened, an additional tone is heard in diastole, the respiratory rate is 32/min. Breathing over the lower parts of the lungs is weakened, single voiceless wet fine-bubble rales. What complication occurred?

A. Dissection of the aorta
B. An attack of hysteria
C. Thromboembolism of pulmonary artery branches
D. Pneumonia
E. Acute left ventricular failure

*Answer standard:*Well.

6. After elimination of a paroxysm of atrial fibrillation, the patient suddenly developed chest pain and shortness of breath. Objectively: the skin is covered with sweat, the neck veins are swollen, the eyes are wide open. The pulse is small, 140 per minute. BP is not determined. On the ECG, the axis of the heart deviates to the right. What complication did the patient have?

A. Cardiogenic shock
B. Thromboembolism of the pulmonary artery
C. Rupture of the atrial septum
D. Cardiac asthma
E. Heart tamponade

*Answer standard:*IN.

7. A 55-year-old man was being treated in the surgical department for acute thrombophlebitis of the veins of the lower extremities. On the 7th day of treatment, pain in the left half of the chest, shortness of breath, cough suddenly appeared. Temperature 36.1 CDD 36 in 1 minute. Over the lungs, breathing is weakened, there are no wheezing. Pulse 140 in 1 minute, filamentous. Blood pressure 70/50 mm Hg. What is the most likely diagnosis?

A. Thromboembolism of the pulmonary artery

B. IBS: myocardial infarction.

C. Cardiac asthma.

D. Bronchial asthma.

E. Pneumothorax.

*Answer standard:*A.

8. The patient suddenly developed a sharp pain in the left half of the chest, an attack of dysentery occurred. About: the patient is agitated, the skin and mucous membranes are pale, acrocyanosis. Varicose veins of the lower extremities. Pulse 120 per minute, blood pressure 100/70 mmHg. Tones of the heart are dull, accent II tone over the pulmonary artery. ChDR 28 per minute, breathing weakened on the left. What is the previous diagnosis.

A. Myocardial infarction

B. Asthmatic status

C. Dressler syndrome

D. Pneumonia E. BODY

*Answer standard:*Well.

9. What sign is pathognomonic for left ventricular failure?

A. Swelling of neck veins

B. Ascites

C. Liver enlargement

D. Ortopnoye

E. Swelling on the legs

*Answer standard:*D.

10. A hypertensive patient suddenly developed a shortness of breath after a stressful situation. Ob-but: orthopneic position, BH-39/min., wet cough with frothy sputum, breathing over the lower parts of the lungs is weakened, wet fine-bubble rales, RS - 128 in 1 min., BP 220/130 mm Hg, The first tone over the top of the heart is weakened, the accent of the second tone

over the pulmonary artery. What complication did the patient have?

A. Acute left ventricular failure.

B. Acute respiratory failure.

C. BODIES

D. Pneumonia

E. Pneumothorax

*Answer standard:*A..

Summary of the lesson.

_____

_____

4. List of recommended literature (main, additional, electronic information resources):

PRACTICAL TRAINING

Practical lesson No. 8

Subject: Rheumatic disease. Acute rheumatic fever. Rheumatic heart disease. Etiology. Pathogenesis. Clinic. Diagnostics. Modern treatment. Prevention. The role of the dentist in prevention. Diffuse connective tissue diseases. Systemic vasculitis. Features of the dentist's tactics in patients with rheumatic diseases, infectious endocarditis and heart defects. .

Goal: Acquaint applicants with the modern definition of rheumatic disease. Educate the main directive documents of the Ministry of Health of Ukraine regarding the standards of diagnosis, treatment and prevention of GRL and CRHS. Consider the issue of classification, clinical diagnosis of GRL, CRCS and their complications, the principles of modern drug and non-drug therapy of GRL, CRCS and their complications. Emphasize the role of the dentist in the prevention of GRL, CRHS and their complications.

Basic concepts:rheumatism, acute rheumatic fever, rheumatic heart disease, acquired heart defects.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (define rheumatic heart disease, acute rheumatic fever, diagnostic criteria, describe the

pathogenesis of these conditions, main clinical syndromes, be able to conduct a patient survey, examination, palpation, percussion, auscultation, know the possibilities of additional laboratory and instrumental survey methods);

- questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

1. Risk factors of GRL and CRHS.
2. Clinical and laboratory diagnosis of GRL and CRHS. Methods of detection of GRL, CRHS in the population.
3. Mandatory examination program for patients with GRL, CRHS.
4. Classification of GRL, HRHS.
5. Etiology and pathogenesis, clinical manifestations of GRL, CRCS.
6. Principles of treatment of GRL, CRHS. Main groups of drugs. Complications of GRL, CRHS.
7. Prevention of GRL, HRHS.
8. Peculiarities of changes in the oral cavity and teeth in GRL, CRCS;

3. Formation of professional abilities and skills (mastering the skills of interviewing patients with acute rheumatic fever and chronic rheumatic heart disease, prescribing laboratory tests, determining the treatment regimen):

- the content of tasks (to conduct a survey of a patient with CRHS);
- recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
- requirements for work results, including registration;
- control materials for the final stage of the lesson.

Task 1. Patient M, 15 years old, turned to the doctor with complaints of weakness, hyperkinesis, subfebrile. He fell ill acutely, after hypothermia and sore throat suffered 2 weeks ago. History of chronic tonsillitis. The patient is not stable in the Romberg pose, a positive symptom of "flabby shoulders". During the blood test, Leukocytosis is 11.2, acceleration of erythrocyte sedimentation rate to 40 mm/h, CRP +++, ASL-0 - 500AS.

1. Your previous diagnosis?
2. What signs indicate the main disease?
3. Determine the degree of activity of the process?

Answer standard:

1. Acute rheumatic fever, small chorea.
2. Clinical picture (small chorea), medical history (angina, chronic tonsillitis), changes in blood (leukocytosis, increased ESR and CRP level, ASL-0 titer).
3. Activity II-III degree.

Task 2. The patient is 17 years old and has been suffering from rheumatism since he was 15 years old. He has been receiving bicillin prophylaxis year-round for the past 2 years. There were no exacerbations or relapses of the disease. During the examination, the general condition is satisfactory, the skin is clean, the joints have not changed. No neurological

symptoms were found. Vesicular breathing is heard over the entire surface of the lungs, there are no wheezes. Limits of the heart within the framework of the age norm. Heart activity – respiratory arrhythmia, systolic murmur at the top of the functional genesis. The abdomen is soft, not painful, the liver and spleen are not enlarged. In laboratory methods of research - the age norm. ECG - vertical axis of the heart, violation of repolarization processes.
1. Name the phase of the process.
2. Is further bicillin prophylaxis appropriate?
Answer standard:
1. Inactive phase (stage).
2. Yes, year-round prevention is required for three years.

Summary of the lesson.

_____

_____

4. List of recommended literature (main, additional, electronic information resources):

PRACTICAL TRAINING

Practical lesson No. 9

Subject: Infectious endocarditis. Etiology. Pathogenesis. Clinic. Diagnostics. Modern treatment. Complication. The role of the dentist in prevention.
Goal: Acquaint applicants with the modern definition of infectious endocarditis, its etiology. Determine diagnostic standards, approaches to treatment and prevention of infective endocarditis. Consider the issues of classification, clinical diagnosis and complications, the principles of modern drug therapy and surgical treatment. Emphasize the role of the dentist in the prevention of infective endocarditis and its complications.
Basic concepts:infective endocarditis, source of infection, vegetations, valve insufficiency, thromboembolic complications, valve prosthesis, mechanical and biological valve prosthesis, antibacterial therapy.

Equipment:educational literature, synopsis, slides.

Plan:
1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (to define infective endocarditis, its main etiological factors, diagnostic criteria, describe the pathogenesis of infective endocarditis, the main clinical syndromes, be able to conduct a

patient survey, examination, palpation, percussion, auscultation, know the possibilities of additional laboratory and instrumental survey methods);

- questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

1. IE risk factors.
2. Clinical and laboratory diagnosis of IE.
3. Methods of detecting IE in the population.
4. Mandatory examination program for patients with IE.
5. IE classification.
6. Etiology and pathogenesis, clinical manifestations of IE
7. Principles of IE treatment. Main groups of drugs.
8. Complications of IE.
9. Prevention of IE.
10. Peculiarities of changes in the oral cavity and teeth in IE.

3. Formation of professional skills and abilities (mastery of interviewing skills of patients with infective endocarditis, identification of risk factors, physical examination for infective endocarditis, appointment of laboratory tests, determination of treatment tactics and regimens):

- task content (to conduct a survey of a patient with infectious endocarditis);
- recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
- requirements for work results, including registration;
- control materials for the final stage of the lesson.

Task 1. The presence of which congenital heart defect has the greatest risk of IE?:
A. Open ductus arteriosus
B. Tetrad FALO
C. Defect of the interventricular membrane
D. Interatrial membrane defect
E. Triad of FALO

Task 2. What complication is most characteristic in the presence of vegetation on the valve leaflets?
A. Congestive heart failure
B. Infectious toxic shock
C. Thromboembolism
D. Formation of the acquired cardiac vata
E. None of the above

Task 3. Which syndrome in IE occurs first?
A. Syndrome of inflammatory changes and septicemia
B. Intoxication syndrome

C. Syndrome of valvular lesions
D. Syndrome of thromboembolic complications
E. Hemorrhagic syndrome

Answer standards: 1-A, 2-C, 3-A

Summary of the lesson.
_____
_____

4. List of recommended literature (main, additional, electronic information resources):

PRACTICAL TRAINING

Practical lesson No. 10

Subject: Gastritis Ulcer disease of the stomach and duodenum. Clinic. Diagnostics. Treatment. The role of the dentist in prevention.
Goal:familiarize yourself with the modern definition of gastritis in the structure of diseases of the therapeutic profile, be able to explain to the patient the need for a healthy lifestyle and proper regular nutrition; the great danger of bad habits that can lead to acute and chronic gastritis. the applicant must know: etiology, pathogenesis, classification, main clinical manifestations of gastritis, the connection of the disease with alcoholism; modern methods of research of the gastrointestinal tract (instrumental, laboratory); elements of care for patients with pathology of the gastrointestinal tract; modern treatment of patients with gastritis. the applicant must be able to: collect anamnesis, conduct an objective examination of the patient; conduct superficial and deep palpation of the abdomen, determine the lower border of the stomach; analyze clinical and instrumental research data.
Basic concepts: acute and chronic gastritis, gastric ulcer and peptic ulcer, exacerbation, remission, fibrogastroduodenoscopy, mucosal biopsy.

Equipment:educational literature, synopsis, slides.

Plan:
1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):
_ requirements for the theoretical readiness of applicants to perform practical classes (define gastritis, describe its classification. Define gastric ulcer and peptic ulcer disease, describe the main etiological factors, diagnostic criteria, describe the pathogenesis of ulcer formation, main clinical signs, be able to conduct a patient survey, examination, palpation,

percussion, auscultation, know the possibilities of additional laboratory and instrumental examination methods);

- questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

1. The main clinical symptoms characteristic of gastritis.
2. Changes in indicators of gastric secretion in patients with various forms of gastritis.
3. Characteristics of these instrumental research methods (x-ray, endoscopic) in gastritis.
4. Definition of peptic ulcer disease of the stomach and duodenum.
5. Classification of peptic ulcer disease of the stomach and duodenum.
6. Etiology and pathogenesis of peptic ulcer disease of the stomach and duodenum.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients with gastritis and peptic ulcer disease, determining risk factors, physical examination for the specified conditions, prescribing laboratory tests, their interpretation, determining tactics and treatment regimens):

- the content of tasks (to conduct a survey of a patient with chronic gastritis, peptic ulcer disease);
- recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
- requirements for work results, including registration;
- control materials for the final stage of the lesson.

Task 1. Patient N., 45 years old, came to the clinic with complaints of belching air, sometimes a rotten egg, nausea, a feeling of heaviness in the epigastric area. Objectively: non-sharp diffuse soreness in the epigastric region. The fractional analysis of gastric juice revealed the absence of free hydrochloric acid in all portions, and the total acidity was sharply reduced. Acidity did not increase after administration of histamine. What disease should the doctor think about?

A. Gastric ulcer disease.
B. Ulcer disease of the duodenum.
S. Acute gastritis.
+ D. Chronic atrophic gastritis.
E. Acute pancreatitis.

Task 2. Patient N., 30 years old, complains of acid belching, heartburn, pain in the upper part of the abdominal wall, which occur on an empty stomach, 1.5 - 2 hours after eating and at night, constipation, weakness. He has been sick for about 5 years. Deterioration of well-being is noted after eating spicy food, in spring and autumn. Objectively: the tongue is coated with a white coating. Abdomen on palpation is soft, painful in the epigastric area. What disease can be assumed in the patient?

A. Acute gastritis.

B. Chronic gastritis.
S. Gastric ulcer disease.
+ D. Ulcer disease of the duodenum.
E. Acute cholecystitis.

Tasks 3-4. Patient A., 27 years old, suffers from ulcer disease of the duodenum. Periodically notices the black color of feces. A decrease in the number of erythrocytes and hemoglobin was noted in the blood.

3. What should the doctor think about?
A. About ulcer perforations.
V. About the penetration of ulcers.
+ S. About bleeding.
D. About stenosis of the gatekeeper.
E. About ulcer malignancy.

4. What research needs to be done urgently?
+ A. Fibrogastroduodenoscopy.
B. Roentgenoscopy of the stomach.
C. Colonoscopy.
D. Irigoscopy.
E. Ultrasound of abdominal organs.

Task 5. Patient B., 30 years old, came to see a therapist with complaints of pain in the epigastric area, nausea, weakness, dizziness, one-time vomiting, a feeling of heaviness and fullness in the stomach. It is known from the anamnesis that the previous evening he celebrated a friend's birthday in a cafe. Objectively: the skin is pale, the tongue is covered with a grayish-white coating, drooling. During palpation, pain in the epigastric region. Your previous diagnosis?
A. Gastric ulcer disease.
B. Chronic gastritis.
S. Acute cholecystitis.
D. Ulcer disease of the duodenum.
+ E. Acute gastritis.

Task 6. Patient G., 34 years old. Complaints: pain in the epigastric region, radiating to the back, occurs after eating, nausea, sometimes sour vomiting, heartburn, belching, constipation. During palpation, soreness and muscle tension in the epigastrium, a positive Mendelian symptom. Your previous diagnosis?
+ A. Uncomplicated gastric ulcer disease.
B. Gastric ulcer disease, complicated.
S. Acute pancreatitis.

D. Acute gastritis.
E. Ulcerative disease of the duodenum.

Answers: 1 - D, 2 - D, 3 - C, 4 - A, 5 - E, 6 - A.

Summary of the lesson.

_____

_____

PRACTICAL TRAINING

Practical lesson No. 11

Subject: Intestinal diseases (chronic enteritis, colitis, nonspecific ulcerative colitis). Pancreatitis. Cholecystitis. Gallstone disease. Clinic. Diagnostics. Treatment. The role of the dentist in prevention.

Goal:get acquainted with intestinal diseases, pancreatitis, cholecystitis, gallstone disease. Be able to explain to the patient the need for a healthy lifestyle and proper regular nutrition; great danger of bad habits that can lead to the specified diseases. the applicant must know: etiology, pathogenesis, classification, main clinical manifestations of chronic enteritis and colitis, nonspecific ulcerative colitis. Consider modern methods of research of the gastrointestinal tract (instrumental, laboratory); elements of care for patients with pathology of the gastrointestinal tract; modern treatment of patients. the applicant must be able to: collect anamnesis, conduct an objective examination of the patient; perform superficial and deep palpation of the anterior abdominal wall, palpate the sections of the large intestine, gall bladder, analyze the data of clinical and instrumental studies.

Basic concepts: chronic enteritis, chronic colitis, non-specific ulcerative colitis, chronic pancreatitis, cholecystitis, cholelithiasis.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (define the listed diseases, describe their classification. Define non-specific ulcerative colitis, describe the main etiological factors, diagnostic criteria, describe the pathogenesis of ulcers, the main clinical signs, be able to conduct a patient survey, examination, palpation , percussion, auscultation, to know the possibilities of additional laboratory and instrumental examination methods);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks,

clinical situations).

1. Intestinal diseases (chronic enteritis, chronic colitis, nonspecific ulcerative colitis, Crohn's disease).
2. Definition, etiology, pathogenesis.
3. The role of food component intolerance, enzymopathies and immune factors. Syndromes of malabsorption and maldigestion.
4. Diagnostic criteria, differential diagnosis. Complication. Differentiated therapy. Primary and secondary prevention.
5. Irritable bowel syndrome, definition. Roman diagnostic criteria.
6. Etiology, pathogenesis of SPK. Classification. Clinical manifestations of different options. Diagnostic criteria and criteria for excluding the diagnosis. Differential diagnosis.
7. Treatment of various forms. Primary and secondary prevention.
8. Nonspecific colitis (nonspecific ulcerative colitis and Crohn's disease): definition, etiology, pathogenesis. Classification. Features of the clinical course depending on the degree of activity, severity, phase of the course.
9. Diagnostic criteria for non-specific ulcerative colitis, Crohn's disease.
10. Complication.
11. Changes in the oral cavity during NVK.
12. The role of the dentist in preventing serious complications and providing emergency care at his workplace.
13. Prognosis and performance in intestinal diseases.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients with chronic enteritis, colitis, non-specific ulcerative colitis, pancreatitis, cholecystitis, housing and communal services, determining risk factors, physical examination for the specified conditions, prescribing laboratory tests, their interpretation, determining tactics and treatment regimens):

- the content of the tasks (to conduct a survey of a patient with chronic enteritis, colitis, IBD, calculous cholecystitis);
- recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
- requirements for work results, including registration;
- control materials for the final stage of the lesson.

Task 1. The patient, 30 years old, complains of defecation up to 5-6 times a day, stool masses of liquid consistency with impurities of mucus and blood, pain in the lower abdomen that decreases after defecation, progressive weight loss, general weakness. Physical examination data: the skin and mucous membranes are dry, the abdomen is swollen, painful on palpation, loud rumbling on palpation in the area of the cecum. Your diagnosis:
1. nonspecific ulcerative colitis;
2. Crohn's disease;

3. colon cancer;
4. chronic colitis;
5. chronic enteritis.
Answer standard: 1.

Task 2. The development of celiac disease is associated with:
1. by the influence of ionizing radiation;
2. gluten intolerance;
3. alcohol consumption;
4. chronic stress;
5. helicobacter infection.
Answer standard: 2.

Task 3. Irritable bowel syndrome differs from chronic colitis:
1. presence of pain syndrome;
2. the absence of morphological changes in the mucous membrane of the large intestine;
3. expressiveness of dyspeptic syndrome;
4. a long course without noticeable progression;
5. absence of pain and intestinal disorders at night;
6. non-permanent nature of complaints.
Answer standard: 2, 4, 5, 6.

Task 4. Patient K., 53 years old, complains of pain in the abdominal area of an attack-like nature, mainly near the navel, which is relieved by passing gas and feces, rumbling in the stomach, intolerance to milk, flatulence, frequent loose stools 5-6 times a day, weight loss in 6 months per 5 kg. Deterioration of the condition is observed 1-2 times a year. Objectively: the skin is pale, dry, turgor and elasticity are reduced, the tongue is covered with a gray coating, during palpation there is swelling of the abdomen mainly in its central parts, pain in the points of Porges and Sternberg.
1) What is your diagnosis?
2) What methods are needed to verify the diagnosis?
3) Tactics of treatment (list groups of drugs)?

Answer standard:
1) Chronic enteritis (post-infectious), mainly jejunitis, mild degree, exacerbation phase.
2) Coprological analysis, stool culture for dysbacteriosis, endoscopic and x-ray examination of the small intestine.
3) Adsorbents, antibacterial, enveloping preparations, eubiotics, antispasmodics.

Task 5. Patient K., 60 years old, complains of pain in the lower part of the abdomen on the left side, which radiates to the inguinal area and increases with physical exertion, alternating constipation and diarrhea. Deterioration of the condition is observed 1-2 times a year.

Objectively: the tongue is covered with a gray coating, palpation shows a spasmodic and painful sigmoid colon.
1) What is your diagnosis?
2) What methods are needed to verify the diagnosis?
3) Treatment tactics?

Answer standard:
1) Chronic non-ulcerative colitis, mainly sigmoiditis, mild form, recurrent course with impaired motor function of the hypermotor type.
2) Coprological analysis, stool culture for dysbacteriosis, endoscopic examination of the large intestine.
3) Adsorbents, antibacterial, enveloping drugs, eubiotics, antispasmodics.

Summary of the lesson.

_____

_____

PRACTICAL TRAINING

Practical lesson No. 12

Subject: Chronic hepatitis. Liver cirrhosis. Clinic. Diagnostics. Treatment. The role of the dentist in prevention.
Goal:get acquainted with the definition of chronic hepatitis, cirrhosis of the liver in the structure of diseases of the therapeutic profile, be able to explain to the patient the causes of the disease, the need to follow a healthy lifestyle and proper regular nutrition, the danger of bad habits that can lead to hepatitis. the applicant must know: etiology, pathogenesis, classification, main clinical manifestations of hepatitis and liver cirrhosis, connection of diseases with alcoholism; modern methods of studying the hepatobiliary system (instrumental, laboratory); elements of care for patients with this pathology; modern treatment of patients with hepatitis. the applicant must be able to: collect anamnesis, conduct an objective examination of the patient; to palpate the liver and determine its size according to the Kurlov method; analyze clinical and instrumental research data.
Basic concepts: acute and chronic hepatitis, viral hepatitis, liver cirrhosis, steatohepatitis.

Equipment:educational literature, synopsis, slides.

Plan:
1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes

(define hepatitis, cirrhosis, describe their classification. Define chronic hepatitis, describe the main etiological factors, diagnostic criteria, describe the pathogenesis of liver cirrhosis, the main clinical signs, be able to conduct a patient survey, examination, palpation, percussion, auscultation, know the possibilities of additional laboratory and instrumental examination methods);

- questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

1. Definition and classification of hepatitis.
2. Etiology of hepatitis.
3. Pathogenesis of viral hepatitis, autoimmune hepatitis.

4. Main complaints of patients with hepatitis.
5. Collection of anamnesis in case of viral hepatitis, ways of transmission.
6. The value of the methods of objective research of the digestive organs in the diagnosis of acute and chronic hepatitis:

a) general overview;
b) the presence of jaundice, telangiectasias, "hepatic palms";
c) examination of the abdomen (size, configuration, external tumors, pigmentation zone in the right hypochondrium - a consequence of frequent use of a heating pad, subcutaneous veins, navel, visible peristalsis, participation in breathing);
d) superficial palpation (detection of pain, resistance, muscle tension in the area of the liver, peritoneal symptoms); deep palpation of the abdomen;
e) determination of the size of the liver by the Kurlov method; determining the size of the spleen.

Etiology and clinic of liver cirrhosis.

7. Characterization of these laboratory-instrumental methods of research in cirrhosis of the liver.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients with hepatitis and liver cirrhosis, determining risk factors, physical examination for the specified conditions, prescribing laboratory tests, their interpretation, determining tactics and treatment schemes):

- content of tasks (to conduct a survey of a patient with chronic hepatitis, liver cirrhosis);
- recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);
- requirements for work results, including registration;
- control materials for the final stage of the lesson.

Task 1. What dietary table is prescribed for patients with chronic diseases of the liver and biliary tract?

A. No. 1

B. No. 2
V. No. 3
D. No. 4
D. No. 5

Task 2. What disease is characterized by paroxysmal pains like biliary colic?
A. Chronic hepatitis.
B. Chronic pancreatitis.
V. Gallstone disease.
D. Chronic cholecystitis.
D. Acute viral hepatitis.

Task 3. Patient S., 50 years old, came in with complaints of a feeling of heaviness, sometimes pain in the right hypochondrium, bitterness in the mouth, unstable bowel movements, weakness, and quick fatigue. For 10 years, she ate irregularly and drank alcohol. Objectively: "hepatic palms", the abdomen is enlarged, veins are visible on the skin. The liver protrudes 2 cm from under the costal arch, is soft, with a smooth surface, and is sensitive to palpation. The dimensions of the spleen are 12x18 cm.
For which clinical syndrome are these changes characteristic?
A - cholestasis syndrome
+ B - portal hypertension syndrome
C - cytolysis syndrome
D - jaundice
E - hepatorenal syndrome

Task 4. The patient was delivered in serious condition. Consciousness is dull. Skin and mucous membranes with a jaundiced tint. Kussmaul's breathing. "Hepatic" smell from the mouth. The liver is not enlarged. What syndrome is there?
A. cholestasis syndrome
B - portal hypertension syndrome
C - cytolysis syndrome
+ D - hepatocellular failure syndrome
E - hepatorenal syndrome

Task 5. Patient Zh., 30 years old, complains of poor appetite, nausea, stool disorder, pain in the right hypochondrium, weakness, and occasional subfebrile temperature. 2 years ago, he was ill with acute viral hepatitis B. During the last year, he was eating poorly, abusing alcohol. About: the liver is enlarged, the edge protrudes 3 cm from under the costal arch, dense, painful. In the blood, total bilirubin - 40 mmol/l, direct - 25 mmol/l, indirect - 15 mmol/l, AST - 2.7 μmol/l, ALT - 3.1 μmol/l, thymol test - 20 units.
What disease can you think of?
Answer: about chronic active hepatitis.

Task 6. Patient V., 45 years old, complains of a feeling of heaviness in the right hypochondrium, periodic bleeding from the rectum. These complaints appeared about 2 years ago and are gradually progressing.
About: pallor of the skin. The abdomen is slightly enlarged, a venous network is visible on the front abdominal wall. The edge of the liver protrudes 3 cm from under the costal arch. The edge of the spleen is palpated in the left hypochondrium. What disease can you think of?
Answers:
1. About chronic active hepatitis.
2. About cirrhosis of the liver.

Summary of the lesson.

_____

_____

PRACTICAL TRAINING

Practical lesson No. 13

Subject: Glomerulonephritis. Acute and chronic glomerulonephritis. Nephrotic syndrome. The concept of chronic kidney disease. Pyelonephritis. Urinary stone disease. Etiology, pathogenesis, clinic, diagnosis and principles of treatment. Disorders of phosphorus-calcium metabolism, the value of osteodensitometry in the diagnosis of these disorders. The role of the dentist in prevention.
Goal:to get acquainted with acute and chronic glomerulonephritis and pyelonephritis, nephrotic syndrome in the structure of diseases of the therapeutic profile, to be able to explain to the patient the causes of the disease, the need to follow recommendations for proper nutrition, rational fluid intake, and the dangers of bad habits. the applicant must know the etiology, pathogenesis, classification, main clinical manifestations of glomerulonephritis and pyelonephritis, nephrotic syndrome, the connection of diseases with chronic kidney disease; modern methods of research of the urogenital system (instrumental, laboratory); elements of care for patients with this pathology; modern treatment of patients with glomerulonephritis and pyelonephritis, nephrotic syndrome, chronic kidney disease. the applicant must be able to: collect anamnesis, conduct an objective examination of the patient; palpate the kidneys, determine the presence of peripheral edema; analyze clinical and instrumental research data.
Basic concepts: acute and chronic glomerulonephritis and pyelonephritis, nephrotic syndrome, chronic kidney disease, chronic renal failure, glomerular filtration rate.

Equipment:educational literature, synopsis, slides.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (written work, written test, frontal survey, etc.) (if necessary):

_ requirements for the theoretical readiness of applicants to perform practical classes (define acute and chronic glomerulonephritis and pyelonephritis, nephrotic syndrome, describe their clinical signs. Define chronic kidney disease, describe the main etiological factors, diagnostic criteria, pathogenesis of CKD, main clinical signs, be able to conduct a patient survey, examination, palpation, percussion, auscultation, know the possibilities of additional laboratory and instrumental examination methods);

_ questions for checking basic knowledge on the subject of the lesson (tests, tasks, clinical situations).

1. Definition of glomerulonephritis, classification.
2. Etiology and prevention of acute and chronic CG.
3. Frequency of occurrence and prognosis in glomerulonephritis.
4. General symptoms of acute glomerulonephritis.
5. Clinical picture of chronic glomerulonephritis.
6. Clinical characteristics of the main variants of HGN
7. Methods of research in HGN.
8. Dispensary monitoring of patients with chronic obstructive pulmonary disease
9. Prevention of glomerulonephritis complications.
10. Definition of chronic kidney disease.
11. Classification of chronic kidney disease.
12. Principles of treatment of CHD, CHD.
13. Definition and etiology of nephrotic syndrome.
14. Criteria of nephrotic syndrome.
15. The main directions of treatment of nephrotic syndrome.
16. Definition of pyelonephritis, classification.
17. Etiology and prevention of acute and chronic CP.
18. Frequency of occurrence and prognosis in pyelonephritis.
19. General symptoms of acute pyelonephritis.
20. Clinical picture of chronic pyelonephritis.
21. Clinical characteristics of the main variants of CP
22. Research methods in CP.
23. Dispensary monitoring of patients with CP.
24. Prevention of complications of pyelonephritis.

3. Formation of professional abilities and skills (mastering the skills of interviewing patients with glomerulonephritis and pyelonephritis, determining risk factors, physical examination for glomerulonephritis and pyelonephritis, nephrotic syndrome, prescribing laboratory tests, their interpretation, determining tactics and treatment regimens):

_ the content of tasks (to conduct a survey of a patient with chronic glomerulonephritis and pyelonephritis, chronic kidney disease);

_ recommendations (instructions) for performing tasks (professional algorithms, orientation maps for the formation of practical skills and abilities, etc.);

_ requirements for work results, including registration;

_ control materials for the final stage of the lesson.

Task 1. A 55-year-old man complains of general weakness, decreased urination, skin itching. He has been suffering from chronic pyelonephritis for 15 years. Objectively: the skin is dry, with a yellowish tint. Ps-80/min., rhythmic, BP- 100/70 mm Hg. During auscultation, heart sounds are dull, pericardial friction noise is heard. Blood creatinine 1.1 mmol/l, glomerular filtration 5 ml/min. What treatment is shown to the patient?

+A. Hemodialysis
B. Plasmapheresis
C. Neohemodesis
D. Enterosorbent
E. Diuretics

Task 2. A 16-year-old girl showed changes in the urine analysis against the background of SARS: traces of protein, leukocytes 30-40 per cent, erythrocytes (fresh) 10-12 per cent. Blood pressure - 100/60 mm Hg. Which of the following diagnoses is most likely?

+A. Infection of the urinary system
B. Acute glomerulonephritis
C. Hemorrhagic vasculitis
D. Vulvovaginitis
E. Urinary stone disease

Task 3. A 62-year-old patient complained of periodic discharge of worm-shaped blood clots in the urine. In the right half of the abdomen, during palpation, a lumpy, painless, mobile formation is determined. Which of the listed examination methods should be used first?

A. Chromocystoscopy
B. Excretory urography
C. Cystoscopy
D. Computed tomography of the pelvis
+E. Ultrasound of the kidneys and retroperitoneal space

Task 4. In a 19-year-old boy with an exacerbation of secondary obstructive pyelonephritis, Pseudomonas aeruginosa was isolated from the urine in a titer of 1,000,000 microbial bodies

per 1 ml. What antibacterial drug is the most appropriate to prescribe in this case?
A. Ampicillin
B. Cefazolin
C. Azithromycin
+D. Ciprofloxacin
E. Levomycetin

Task 5. A 17-year-old patient is undergoing inpatient treatment for glomerulonephritis. Complaints about severe swelling all over the body, decrease in the amount of urine, headache. In urine: protein 7.1 g/l, leuk.- 1-2 in p/z, er.- 3-4 in p/z. Protein in daily urine 3.8 g/l, diuresis 800 ml. Total protein 43.2 g/l, urea 5.2 mmol/l. Cholesterol 9.2 mmol/l. Which of the listed glomerulonephritis syndromes is most likely to occur in the patient?
A. Nephritic
+B. Nephrotic
C. Urinary
D. Hematuric
E. Mixed

Task 6. A 37-year-old patient has frequent painful urination, a feeling of incomplete emptying of the bladder. He has been sick for about 15 years. In urine: specific gravity 1020, protein 0.04 g/l, leuk.- 20-25 in p/z, er.- 3-4 in p/z. At ultrasonography, the kidneys are unremarkable, the volume of the bladder is 300 ml, its wall is thickened to 0.5 cm, trabecular in the lumen of echo suspension. What method of additional research is necessary for this patient in the first place to clarify the diagnosis?
A. Bacpos of urine
B. Excretory urography
+C. Cystoscopy
D. Survey urography
E. Nechiporenko's test

Task 7. A 46-year-old patient with complaints of sharp, attack-like pain in the right lumbar area, radiating to the inguinal area and on the inner surface of the thigh, was brought to the reception room by ambulance. The pain appeared suddenly a few hours ago. The day before, the patient had profuse painless hematuria with worm-shaped blood clots. I was not sick before. What disease should be thought of first?
A. Bladder tumor
+B. Right kidney cancer
C. Necrotic papillitis
D. Acute glomerulonephritis
E. Urolithiasis, right kidney stone

Task 8. An 18-year-old patient was brought to the hospital with significant swelling, which

appeared two weeks after a sore throat. An increase in blood pressure up to 160/110 mm Hg was revealed. Acute glomerulonephritis is suspected. What can be detected in urine sediment?
+A. Significant proteinuria, erythrocyturia, cylindruria
B. Slight proteinuria, leukocyturia
C. Microhematuria, crystalluria
D. Moderate proteinuria, macrohematuria, hyaline cylindruria
E. Macrohematuria, leukocyturia
Task 9. A 60-year-old patient was prescribed gentamicin (80 mg every 6 hours) due to fever after cholecystectomy. After 10 days, the patient's creatinine increased to 310 μmol/l. AT-130/80 mm Hg. Daily diuresis - 1.2 l. Urinalysis without pathology. Ultrasound of the buds: the size of the buds is normal. What is the most likely cause of kidney failure?

A. Acute glomerulonephritis.

B. Hepatorenal syndrome.

S. Inadequate fluid infusion.

D. Cortical necrosis of the kidneys.

+E. Nephrotoxicity of gentamicin.

Task 10. A 40-year-old patient complains of severe pain in the lumbar region on the left, radiating to the left inguinal region, an increase in t (38°, cloudy urine. During the examination, pallor of the skin, swelling of the eyelids was revealed. Pasternacki's symptom on the left sharply (+). In the urine - specific gravity 1020, protein 0.99 g/l, pyuria (leukocytes 100-120 in n/zr), fresh erythrocytes 20-30 in n/zr. What is your diagnosis? Correct answer Urinary stone disease, secondary pyelonephritis. IN Chronic glomerulonephritis.

S Chronic pyelonephritis.

D Congestive kidney.

AND Urinary stone disease.

Task 3 During the X-ray examination, patient K., 58 years old, showed a decrease in the size of one of the kidneys. This can be beneficial:

Right answerchronic pyelonephritis

IN acute pyelonephritis

S the presence of cysts in the kidney tissue

D amyloidosis of the kidneys

AND acute glomerulonephritis

Summary of the lesson.

_____

_____

PRACTICAL TRAINING

Practical lesson No. 14

Subject: Allergic diseases. Etiology, pathogenesis, clinic, diagnosis and principles of treatment. The role of the dentist in prevention. Anaphylactic shock, urticaria. Angioedema.

Goal: Mastering modern methods of examination of patients with allergic diseases. Know the general principles and methods of examination of patients with allergic diseases. Know the main clinical symptoms of allergic diseases. To be able to conduct a subjective examination of patients with allergic diseases, to highlight the features of complaints and anamnesis of these patients. Be able to make a plan for additional examination of these patients. The role of the dentist in prevention

Basic concepts:
Types of allergic reactions.

Etiology, pathogenesis of allergic diseases.

Main complaints, anamnesis, objective manifestations of allergic diseases.

Angioneurotic edema (Angioedema), definition, manifestations, features of localization and course.

Urticaria, definition, manifestations, features of localization and course.

Anaphylactic shock, definition, precursors, manifestations, features of the course.

Hay fever, definition, harbingers, manifestations, features of the course.

Clinical syndromes in allergology.

Laboratory and instrumental research methods in allergology.

First aid for anaphylactic shock, angioedema

.1. Requirements for theoretical readiness of applicants and performance of practical classes:

- the acquirer must know the mechanisms of formation of various types of allergic reactions

- the applicant must know the method of examining a patient with an allergic reaction,
- the applicant must know the algorithm for collecting complaints and the history of a patient with an allergic reaction,
- **to be able to provide first aid** anaphylactic shock, angioedema

2.2. **Questions to check basic knowledge on the topic of the lesson:**

Patient A., 46 years old, turned to the doctor with complaints that every year at the end of April - May he has burning eyes, runny nose, headache, and fever. The disease worsens when leaving the city. He cannot work at this time. He was treated for acute catarrh of the upper respiratory tract, but without success.

1. What is the disease associated with? Justify your assumptions.
2. Explain the mechanism of these disorders.
3. Your recommendations to the patient.

The patient developed acute glomerulonephritis 2 weeks after purulent angina.

1. What type of allergic reaction is the basis of this disease?
2. Explain the mechanism of development of this disease.

The patient was hospitalized with exacerbation of chronic bronchitis. Treatment with antibiotics is prescribed. On the 4th day, the general condition worsened: the fever persisted, shortness of breath and cough intensified, itchy rashes appeared on the skin, and auscultation showed scattered dry rales. In the blood - eosinophilia (10%). The deterioration of the patient's condition is due to the development of:

A) Allergoid reaction
B) Bronchopneumonia
C) Bronchial asthma
D) Asthmatic bronchitis
E) Drug allergic reaction

A young man, 20 years old, has an injured right testicle. What danger does this pose to the left (healthy) testicle?

A) Antigen unmasking and antibody damage
B) Development of the infectious process
C) Development of atrophy

D) Development of hypertrophy
E) Does not threaten anything

The patient, 27 years old, instilled drops containing penicillin into his eyes. After a few minutes, itching of the body, swelling of the lips, eyelids, cough with whistling appeared, blood pressure decreased. What class of immunoglobulins are involved in the development of this allergic reaction?

A) Iq M and Iq G .
B) Iq E.
C) IqA.
D) IqM.
E) IqG.

A woman, 43 years old, suffers from pneumonia. After 10 min. after an injection of ampicillin, the patient complained of sharp weakness, burning in the face and hands, cough, shortness of breath, and chest pain. Objectively: cyanosis, swelling of the eyelids, face with red rashes, heart rate - 120/min., blood pressure - 90 mmHg. What is the most likely reason for the sudden deterioration of the patient's condition?

A) Anaphylactic shock.
B) Urticaria.
C) Quincke's edema.
D) Asthma attack.
E) Thromboembolism of the pulmonary artery.

The guinea pig was injected with 0.1 ml of horse serum for the purpose of sensitization. What are the external signs of sensitization?

A) Rash on the skin.
B) Joint swelling.
C) There are no external manifestations
D) Increase in body temperature.
E) Pain.

The patient turned to the doctor with complaints that every spring, during the flowering period of plants, he has a headache, runny nose, weakness, and an increase in temperature. What type of allergic reaction according to Yell and Coombs is observed in the patient?

A) Cytotoxic complement-dependent type.
B) Antibody-dependent cellular cytotoxicity.
C) Immunocomplex type.

D) Cell-mediated type.
E) Anaphylactic type

Patient D., 15 years old, was admitted to the allergy department with a diagnosis of "bronchial asthma". The formation of antibodies of which class determines the development of the main clinical symptoms:

A) IgA
B) IgG
C) IgM
D) IgD
E) IgE

During the examination of the patient, who previously suffered from angina in a severe form, edema, increased blood pressure, and decreased diuresis were found. These symptoms are characteristic of acute glomerulonephritis, which is based on damage to the basal membrane of the glomeruli, often by the mechanism:

A) Allergies of the cytotoxic type
B) Allergies of the anaphylactic type
C) Delayed-type hypersensitivity
D) Immunocomplex allergic reaction
E) Allergic reaction of the stimulating type

A few minutes after the local anesthesia of the tooth with novocaine by the dentist, the patient suddenly developed weakness, itching of the skin, and sharp spasm-like pains in the abdomen. Objectively: hyperemia of the skin, urticaria, tachycardia, blood pressure drop to 70/40 mmHg. What type of allergic reactions does the described pathology belong to?

A) Anaphylactic type
B) Cytotoxic type
C) Stimulating type
D) Cell-mediated type
E) Immunocomplex type

The nurse of the manipulation room with 20 years of experience developed contact dermatitis of the upper extremities. What type of allergic reactions according to Gell et Coombs does this disorder belong to?

A) Anaphylactic type
B) Cell-mediated type
C) Cytotoxic type

D) Stimulating type
E) Immunocomplex type

A 45-year-old man complains of burns that appeared on exposed parts of the body after a short stay in the sun (no more than 10-20 minutes), severe headache, nausea, dizziness. Explain the cause of this pathology.

A) Sunstroke
B) Heat stroke
C) Photochemical burn
D) Overheating
E) Photoallergy

The girl, 15 years old, suffers from bronchial asthma. In the spring, during the flowering period of the grasses, she developed a severe attack of expiratory shortness of breath. Which of the biologically active substances reliably caused a spasm of the bronchial muscle tissue in this case?

A) Thromboxane A_2.
B) Prostacyclin.
C) A mixture of leukotrienes $C_4D_4Well_4$
D) Bradykinin.
E) Serotonin.

After 2 hours after a transfusion of allogeneic plasma, a patient with burns in the stage of toxemia developed pain in the joints, lower back, hemorrhagic rash on the skin, and the temperature rose. Which of the allergic reactions occurs in this case?

A) Urticaria
B) Quincke's edema
C) Anaphylaxis
D) Serum sickness
E) Autoimmune vasculitis

PRACTICAL TRAINING

Practical lesson No. 15

Subject: Iron deficiency anemia. Etiology, pathogenesis, clinic, diagnosis and principles of treatment. The role of the dentist in prevention. Megaloblastic anemias. Etiology,

pathogenesis, clinic, diagnosis and principles of treatment. The role of the dentist in prevention.
Goal: Acquiring knowledge and mastering professional competences during examination of a patient with anemia - questioning, physical examination, laboratory-instrumental research.

Basic concepts:
Definition and modern classification of anemias. Basic laboratory criteria of anemia. The mechanism of iron deficiency in the body and the occurrence of iron deficiency anemia. Main clinical manifestations of sideropenic and general hypoxic syndromes in iron deficiency anemia. Laboratory criteria of iron deficiency anemia. Causes and pathogenesis of V_{12}- folic acid deficiency anemia. Manifestations of the general anemic syndrome, syndromes of damage to the digestive organs, funicular myelosis and peripheral blood damage in B_{12}- folic acid deficiency anemia. The main laboratory signs of V_{12}- folic acid deficiency anemia. Congenital and acquired hemolytic anemias: manifestations of general anemia, jaundice syndromes, splenomegaly and hemosiderosis of internal organs. Basic laboratory criteria of hemolytic anemias and features of bilirubin metabolism disorders. Analysis and interpretation of a general clinical blood test.
The main components of the blood coagulation system. Development factors of bleeding and causes of hemorrhagic syndromes - thrombocytopenia, coagulopathy, hemorrhagic vasculitis. Characteristics of the hemorrhagic syndrome in hemophilia, thrombocytopenic purpura and Schönlein-Henoch disease. Manifestations of articular, abdominal, renal and anemic syndromes in these diseases. Basic methods of laboratory diagnosis of hemorrhagic syndromes.
Anemia is a clinical and hematological syndrome characterized by a decrease in the content of hemoglobin and erythrocytes per unit volume of blood, which leads to the development of tissue oxygen starvation.
Anemia is diagnosed when the hemoglobin level in the blood is less than 130 g/l and the number of erythrocytes is less than 4×10^{12}/l in men and, respectively, less than 120 g/l and 3.5×10^{12}/l in women. Having common features, anemias at the same time represent a heterogeneous group of diseases, which are characterized by their own etiology, pathogenesis, features of the clinical picture, diagnostic criteria and methods of treatment. Within the scope of this topic, the main clinical forms of anemia are considered: iron deficiency, V_{12}- deficient, foliodeficient, hemolytic, hypoplastic, posthemorrhagic.
It is important for the formation of clinical thinking***pathogenetic classification of anemias***:
I. Anemia due to blood loss (posthemorrhagic).
1. Acute posthemorrhagic anemia.
2. Chronic post-hemorrhagic anemia.
II. Anemia due to impaired formation of erythrocytes and hemoglobin.
3. Iron deficiency anemia.
4. Iron redistribution anemia.
5. Iron-rich anemia.
6. Megaloblastic anemias associated with impaired DNA synthesis.

6.1. IN_{12}- and foliodeficiency anemias.
6.2. Megaloblastic anemia caused by a hereditary deficiency of enzymes involved in DNA synthesis.
6.3. IN_{12}- achrestic anemia
7. Hypoproliferative anemias.
8. Anemias associated with bone marrow failure.
8.1. Hypoplastic (aplastic) anemia.
8.2. Refractory anemia in myelodysplastic syndrome.
9. Metaplastic anemias.
9.1. Anemia with hemoblastosis.
9.2. Anemia with cancer metastases in the bone marrow.
10. Dyserythropoietic anemia.

III. Anemia due to increased blood loss.

11. Hereditary anemias.
11.1. Associated with a violation of the structure of the erythrocyte membrane (microspherocytic anemia of Minkovsky-Shaffar, ovalocytosis, acanthocytosis).
11.2. Associated with deficiency of enzymes in erythrocytes.
11.3. Associated with a violation of hemoglobin synthesis (sickle cell anemia, hemoglobinosis, thalassemia).
12. Acquired anemia.
12.1. Autoimmune anemia.
12.2. Paroxysmal nocturnal hemoglobinuria (Markiafava-Micheli disease).
12.3. Medical anemia.
12.4. Traumatic and microangiopathic anemia.
12.5. Anemia due to poisoning with hemolytic poison and bacterial toxins.

V. Anemias are mixed.

During the diagnostic search, it is advisable to determine the nature of anemia according to the morphology of erythrocytes, color index, as well as the ability of the bone marrow to compensate for anemia.

Morphological classification of anemias:

I. Macrocytic anemia (MCV*>100 μm^3 (fl), erythrocyte diameter > 8 μm).**

This type of anemia includes vitamin B deficiency $anemia_{12}$, folic acid deficiency and paroxysmal nocturnal hemoglobinuria.

II. Microcytic anemia (MCV<80 μm^3 (fl), erythrocyte diameter < 6.5 μm).

This type of anemia includes iron deficiency anemia, thalassemia, Minkovsky-Shafar microspherocytic anemia.

III. Normocytic anemia (MCV 81-99 μm^3 (fl), the diameter of erythrocytes is 7.2-7.5 microns).

This type of anemia includes hypoplastic anemia, most hemolytic anemias, and acute posthemorrhagic anemia.

Note:

fl – femtoliter (1 fl = 10^{-15}l = 1 μm^3)

MCV (mean corpuscular volume) is the average volume of an erythrocyte, calculated according to the formula:

Calculation example: hematocrit 0.3 (30%), erythrocytes 3.5×10^{12}/l

Variants of morphological changes of erythrocytes:

- Anisocytosis - a change in the size of erythrocytes.
- Poikilocytosis – a change in the shape of erythrocytes.
- Microcytosis is a condition in which microcytes predominate in the peripheral blood (erythrocytes < 6.5 μm in diameter).
- Microspherocytosis - the presence of round microcytes.
- Schizocytosis – the presence of very small particles of erythrocytes (2-3 μm).
- Planocytes – erythrocytes with reduced thickness.
- Annulocytes are erythrocytes that look like a ring (with significant lightening in the center).
- Ovalocytes – erythrocytes, oval in shape, without light in the center.
- Stomatocytes – erythrocytes with a linear lumen in the center in the form of a mouth.
- Xerocytes – erythrocytes with reduced cell volume.
- Acanthocytes are erythrocytes with spikes on the surface.

Classification of anemias by color index

I. Hypochromic anemia (color index <0.8)

This type of anemia includes iron-deficiency anemia, iron redistribution anemia, iron-saturated anemia, and thalassemia.

II. Normochromic anemia (color index 0.85-1.05).

This type of anemia includes hypoplastic anemia, most hemolytic anemias, acute posthemorrhagic anemia, and metaplastic anemias.

III. Hyperchromic anemia (color index >1.05)

This type of anemia includes B_{12}- deficiency and foliodeficiency anemia.

Note:

Color indicator (CP) is a value reflecting the hemoglobin content in an erythrocyte, calculated according to the formula:

, where 1 g%=10 g/l

Calculation example: hemoglobin 90 g/l, erythrocytes 3.5×10^{12}/l

Classification of anemias according to the bone marrow's ability to compensate.

I. Regenerative anemia (number of reticulocytes 0.5-5%)

This type of anemia includes iron deficiency anemia.

II. Hyperregenerative anemia (number of reticulocytes >5%)
This type of anemia includes acute posthemorrhagic anemia, hemolytic anemia, and iron-saturated anemia.
III. Hyporegenerative anemia (reticulocyte count <0.5%)
This type of anemia includes B12 deficiency anemia, foliodeficiency anemia, hypoplastic anemia
IRON DEFICIENCY ANEMIA
Iron deficiency anemia is an anemia characterized by a deficiency of iron in blood serum, bone marrow and depots (spleen, liver).
Latent iron deficiency is a condition characterized by a decrease in the amount of iron in the depot and a decrease in transport iron (ferritin) with still normal indicators of hemoglobin and erythrocytes.
20% of the world's population suffers from iron deficiency anemia and latent iron deficiency.
Etiology of iron deficiency anemia.
I. Chronic blood loss
uterine blood loss (dysfunctional uterine bleeding, uterine myoma, endometriosis, malignant uterine tumors, presence of intrauterine contraceptives, etc.)
blood loss from the digestive tract (stomach and duodenal ulcers, stomach cancer, cancer of the small or large intestine, diverticula, polyps, varicose veins of the esophagus, hemorrhoids, etc.)
blood loss in closed cavities (endometriosis, Goodpascher's syndrome)
hemoptysis (tuberculosis, lung cancer)
Hematuria (glomerulonephritis, urolithiasis, tuberculosis, bladder cancer, etc.)
nosebleeds (hypertension)
hemorrhagic diathesis (blood loss can be from any source)
hookworm infestation
II. Increased need for iron
· pregnancy, childbirth and lactation
· the period of puberty and growth
· intense sports activities
· on the background of vitamin B treatment$_{12}$
III. Insufficient initial level of iron
in newborns and young children whose mothers had anemia
IV. Insufficient supply of iron with food
· strict vegetarianism
· low standard of living
Anorexia
V. Impaired iron absorption
Chronic enteritis with malabsorption syndrome
Resection of the small intestine
Gastric resection according to the Billroth II method
VI. Violation of iron transport

Hereditary hypotransferinemia
Hypoproteinemia regardless of genesis (nephrotic syndrome, malabsorption syndrome, liver cirrhosis, chronic hepatitis, etc.)
Appearance of antibodies to transferrin and its receptors

Pathogenesis of iron deficiency anemia.

Under the influence of etiological factors, iron deficiency develops, which manifests itself in a decrease in iron reserves in the red bone marrow, spleen and liver. Over time, iron concentration in blood serum and hemoglobin synthesis decrease, trophic disorders of epithelial tissues occur. The consequence of these changes is the appearance of clinical manifestations of iron deficiency anemia.

Clinical picture of iron deficiency anemia.

The clinical picture consists of anemic (signs of hypoxia) and sideropenic (signs of epithelial tissue dystrophy) syndromes.

Anemic syndrome includes cardiovascular syndrome, astheno-vegetative syndrome, syndrome of damage to the gastrointestinal tract.

· Cardiovascular syndrome: complaints - palpitations, pain in the area of the heart, shortness of breath during physical exertion, objectively - pallor of the skin and visible mucous membranes, tachycardia, hypotension, muffled heart sounds, soft systolic murmur at all auscultatory points, possible expansion of the limits relative cardiac dullness to the left and nonspecific ECG changes. Sometimes there are pastosities of the lower legs, feet, and face.

Astheno-vegetative syndrome: complaints - general weakness, fatigue, reduced work capacity, drowsiness, dizziness.

Gastrointestinal tract damage: complaints - decreased appetite, belching, constipation or the presence of mushy stools, objectively - signs of atrophic gastritis with achlorhydria.

Sideropenic syndrome includes: trophic changes in the skin and its derivatives (skin - pale and dry, nails - brittle, sometimes with a spoon-shaped depression, hair - dry, without shine); muscle weakness; progressive caries; hoarseness of voice; rhinitis; glossitis - a bright crimson tongue with atrophy of the papillae, painful; angular stomatitis ("crush"); spoiled taste (pica chlorotica) - desire to eat earth, clay, chalk, ice (pagophagia); deterioration of the sense of smell - addiction to gasoline, exhaust gases; the symptom of "blue sclera" - a blue tint of the eyes due to thinning of the sclera and translucency of the choroid; imperative urges to urinate; sideropenic dysphagia, sideropenic subfebrile; susceptibility to infectious and inflammatory processes.

Laboratory data in iron deficiency anemia.

Clinical blood analysis:

1. Decreased hemoglobin (<130 g/l in men, <120 g/l in women)

The severity of anemia is determined mainly by the level of hemoglobin:
Lung - hemoglobin content 90-120 g/l;
Medium - hemoglobin content 70-90 g/l;
Severe - hemoglobin content below 70 g/l.

2. Decrease in the number of erythrocytes (<4×10^{12}/l in men, <3.5×10^{12}/l in women)
3. Decrease in color index (<0.8)

4. Morphological changes of erythrocytes (predominance of microcytes, anisocytosis, poikilocytosis)
5. Normal content of reticulocytes, with significant bleeding can be increased
6. Tendency to leukopenia, with significant blood loss, thrombocytosis is possible
7. With significant anemia, a moderate increase in ESR is possible (up to 25 mm/h)

Biochemical analysis of blood:

1. Decreased serum iron concentration (<13 μmol/L in men, <11.5 μmol/L in women)
2. Decreased serum ferritin concentration (<12 μg/l)
3. The total iron-binding capacity of blood serum is increased (>70 μmol/l)
4. Ferritin iron saturation is reduced (<25%)

Instrumental diagnostic methods in iron-deficiency anemia, they are used mainly to identify the source of chronic blood loss (FGDS, colonoscopy, rectoromanoscopy, X-ray examination, ultrasound of the liver, spleen, pelvic organs, etc.).

In order to detect the presence of bleeding, a gynecological examination, urine examination, stool examination for occult blood (Gregersen's reaction), determination of occult blood loss with the help of labeled ^{51}Cr erythrocytes.

IN_{12}-DEFICIENCY ANEMIA.

IN_{12}- deficiency anemia is an anemia caused by a violation of DNA synthesis in erythrokaryocytes due to vitamin B deficiency$_{12}$ and is characterized by the megaloblastic type of hematopoiesis.

Addison-Birmer anemia (pernicious anemia) is considered a classic variant of B_{12}- deficiency anemia and associated with the production of antibodies to the parietal cells of the stomach. The development of this disease is characteristic mainly for people aged 60-70 years. Prevalence among the population as a whole - 0.1%.

Etiology V_{12}- deficiency anemia.

I. Violation of secretion by the stomach of the "internal factor" - gastromucoprotein (antibodies to parietal cells and gastromucoprotein, gastrectomy, stomach cancer, etc.)
II. Violation of absorption of vitamin B_{12} in the intestine (malabsorption syndrome, intestinal resection, tumors and granulomatous diseases of the intestine, selective malabsorption of cobalamin - Imerslund's syndrome, etc.).
III. Competitive costs of vitamin B_{12}.(invasion by a helminth - tapeworm is wide, bacterial infection with the "blind loop" syndrome, etc.)
IV. Increased consumption of vitamin B_{12}(multiple pregnancy, hemolytic anemia, myeloma disease, etc.)
V. Violation of vitamin B intake$_{12}$ with food (strict vegetarianism).
VI. Depletion of vitamin B reserves$_{12}$ (cirrhosis).
VII. Violation of transport of vitamin B_{12} (absence of transcobalamin II or the appearance of antibodies to it).

Pathogenesis B_{12}- deficiency anemia.

Vitamin B_{12} fulfills its biological role in the form of two coenzymes - methylcobalamin and deoxyadenosylcobalamin.

Deficiency of methylcobalamin leads to disruption of DNA synthesis and maturation of rapidly growing cells: bone marrow cells, gastrointestinal tract epithelium. These changes are most pronounced on the part of the red hematopoietic germ. The number of megaloblasts increases in the bone marrow. Megaloblastic erythropoiesis is characterized by delayed maturation of erythrocyte nuclei compared to cytoplasmic hemoglobinization, increased decay of megaloblasts in the bone marrow, and reduced erythrocyte lifespan.
A deficiency of deoxyadenosylcobalamin leads to a violation of the metabolism of fatty acids and the accumulation of methylmalonic and propionic acids, which are toxic to the nervous system, which leads to damage to the posterior and lateral trunks of the spinal cord and to a decrease in the synthesis of myelin.

Clinical picture of V_{12}- deficiency anemia.

Damage to the hematopoietic system: complaints of general weakness, dizziness, ringing in the ears, darkening of the eyes, flickering of butterflies before the eyes, palpitations and shortness of breath, objectively - the skin is pale, often with a lemon-yellow tint, sometimes an increase in body temperature is possible, tachycardia, extrasystole, muffled tones heart, systolic murmur on the turntable, non-specific ECG changes.

Damage to the digestive system: complaints of loss of appetite, a feeling of heaviness in the epigastrium after eating, belching food and air, nausea, pain and burning in the tongue, objectively - the tongue is smooth "lacquered", red in color (Ganter's glossitis), possible signs of aphthous stomatitis, atrophic gastritis, atrophic changes in the intestinal mucosa with malabsorption phenomena, enlargement of the liver and spleen.

Damage to the nervous system (funicular myelosis): complaints of weakness in the legs, a feeling of "tingling" and numbness of the legs, objectively - impaired sensitivity, decreased tendon reflexes, atrophy of the muscles of the lower extremities, dysfunction of the pelvic organs (incontinence of urine and feces).

Laboratory data at V_{12}- deficiency anemia.

Clinical blood analysis:

1. Color index >1.1.
2. An increase in the diameter of erythrocytes (macrocytosis).
3. Anisocytosis.
4. Preservation of the remnants of the nucleus of erythrocytes (Jolly bodies, Cabot rings).
5. Reticulocytopenia.
6. Leukopenia, hypersegmentation of neutrophils.
7. Thrombocytopenia.

Myelogram (key examination for diagnosis)

1. Hyperplasia of the red hematopoietic germ.
2. The appearance of megaloblasts in the bone marrow.
3. Hypersegmentation of neutrophils.

Biochemical analysis of blood:

1. Unconjugated hyperbilirubinemia is possible.
2. It is possible to increase the enzymes LDH1 and LDH2 (lactate dehydrogenase) in the blood.

Immunological analysis of blood: detection of antibodies to parietal cells of the stomach, to gastromucoprotein or complex "vitamin B_{12}+gastromucoprotein".
Analysis of urine and feces: with the development of hemolysis - urobilin appears in the urine, stercobilin increases in the feces.
Schilling's test: positive.
During the test, the patient takes vitamin B inside$_{12}$, which is labeled^{60}Co. After an hour, vitamin B is administered$_{12}$ intravenously to saturate the liver depot. A positive test - a decrease in the excretion of radioactive vitamin with urine - indicates a violation of the absorption of vitamin B_{12} in the intestine
Instrumental research with V_{12}- deficiency anemia.
Esophagogastroduodenoscopy: diffuse atrophic gastritis, duodenitis, less often - atrophic esophagitis.
Study of gastric secretion: a sharp decrease in the amount of gastric juice, a decrease in hydrochloric acid and pepsin.
Ultrasound of the liver and spleen: a slight increase in the size of the spleen, sometimes the liver.
Roentgenoscopy of the stomach: violation of the evacuation function, flattening and smoothing of the folds of the mucous membrane
Equipment:study room, multimedia presentation on the topic of classes, laptop, multimedia projector.

Plan:
1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (checking of workbooks, communication with a patient with anemia in order to collect complaints and history, physical examination of the patient; evaluation of clinical examination data and laboratory and instrumental data*),*conducting a test control, solving a clinical problem, written solution of problems of the Step-2 type (10 problems), frontal survey, discussion, role-playing on the subject of the lesson.
2.1. Requirements for the theoretical readiness of applicants to perform practical classes: the applicant must know the modern definition, etiology, pathogenesis, classifications of anemia, subjective and objective data in these diseases, know laboratory and instrumental data in this pathology.

List of didactic units:
- to conduct a subjective examination of patients with anemia
- conduct an objective examination of patients with anemia
- appoint a plan for additional laboratory and instrumental examinations of patients with anemia, leukemia, hemorrhagic diatheses

2.2. Questions to check basic knowledge on the topic of the lesson:

1. Classification of anemias.
2. Etiology of iron deficiency anemia.
3. Clinical signs of sideropenic syndrome.
4. Blood parameters in iron deficiency anemia.
5. Etiology and pathogenesis of V_{12}- deficiency anemia.
6. Clinical manifestations of V_{12}- deficiency anemia.
7. Blood parameters at V_{12}- deficiency anemia.

3. Formation of professional skills and abilities:
mastering communication skills (collecting complaints, detailing complaints, collecting anamnesis, evaluating the results of the interview)
formation of the ability to perform a clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to perform a physical examination of the patient),

formation of the ability to evaluate the data obtained during the clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis;
carry out a clinical interpretation of the main symptoms and syndromes in these diseases

formation of the ability to conduct a modern laboratory-instrumental examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to prescribe a plan of laboratory-instrumental examination, give an assessment of the examination results)

3.1. Control materials for the final stage of the lesson:

1. A 21-year-old patient came to the clinic because of painful and prolonged menstruation, which takes the form of bleeding. General weakness, dizziness, tinnitus, shortness of breath, hair loss and brittle nails are a concern. Blood analysis: HB - 56 g/l; er-2.8 t/l; KP- 0.6; leuk.-2.5 g/l; ESR - 14 mm/hour, platelets 139 g/l; reticulocytes - 4.5%; anisocytosis with a tendency to microcytosis, hypochromia. Which of the diagnoses is probable?

+A iron deficiency anemia;

B12 deficiency anemia;

Autoimmune anemia;

D aplastic anemia;

E Werlhof's disease.

2. A 69-year-old patient complains of weakness, dizziness, burning of the tongue, decreased appetite. 5 years ago - gastric resection. Objectively: the skin is pale, the language is crimson, smooth; systolic murmur at the apex of the heart. In the blood analysis: er. - 2.2 t/l; HB - 76 g/l; KP-1,1; leukopenia; ESR 30 mm/hour. Jolly's bulls, Cabot's rings. Your diagnosis?

And stomach cancer

In cirrhosis of the liver

With hemolytic anemia

+D B12 deficiency anemia

E iron deficiency anemia.

PRACTICAL TRAINING

Practical lesson No. 16

Subject: Hypo-, aplastic anemias. Etiology, pathogenesis, clinic, diagnosis and principles of treatment. The role of the dentist in prevention. Pathognomonic symptoms in the oral cavity.
Goal: Acquiring knowledge and mastering professional competences during the examination of a patient with hypo- and aplastic anemia - questioning, physical examination, laboratory-instrumental studies.

Basic concepts:
Hypoplastic (aplastic) anemia - a disease of the hematopoietic system, characterized by depression of hematopoiesis (reduction of erythroid, myeloid, megakaryocytic growths of the bone marrow), development of pancytopenia and fatty degeneration of the bone marrow.

Some general information about hematopoiesis.

- Localization of bone marrow - spongy bones.
- The mass of red bone marrow in an adult is 1200-1500 g.
- Proliferation of pluripotent stem cells depends on the microenvironment, which consists of fibroblasts, osteoblasts, endosteal, adventitial, endothelial, and fat cells.
- The microenvironment synthesizes colony-stimulating growth factors (these are approximately 20 glycoprotein hormones), which are required for the development of hematopoietic cells.
- Pancytopenia is a syndrome consisting of anemia, leukopenia, and thrombocytopenia.

Etiology of hypoplastic anemia.

1. Chemical factors (benzene, arsenic, gasoline, heavy metals, insecticides, pesticides, etc.)
2. Physical factors (ionizing radiation and X-ray radiation)
3. Medicines (antibiotics, sulfonamides, nonsteroidal anti-inflammatory drugs, gold preparations, cytostatics, anticonvulsants, antiarrhythmic drugs, oral hypoglycemic drugs, hypotensive drugs, antithyroid drugs).
4. Infectious agents (viruses, tuberculosis mycobacteria, fungi).
5. Immune diseases (transplant rejection, eosinophilic fasciitis, thymoma and thymic carcinoma).

Pathogenesis of hypoplastic anemia.

Under the influence of etiological factors, pluripotent stem cells and their microenvironment are damaged (mechanisms of damage – metabolic disorders and production of antibodies). Congenital cell defects contribute to the harmful effects of etiological factors. The proliferation of hematopoietic cells is disturbed and the lifespan of cells (primarily erythrocytes) decreases. Anemia leads to hypoxia of organs and tissues. Violation of the use of iron for erythropoiesis leads to secondary hemosiderosis. Leukopenia leads to an increase in infectious and inflammatory processes. Thrombocytopenia leads to hemorrhagic syndrome.

Clinical picture of hypoplastic anemia.

Anemic syndrome: complaints - general weakness, reduced work capacity, palpitations and shortness of breath during physical exertion, dizziness, darkening of the eyes, objectively - significant paleness of the skin and visible mucous membranes, often with a jaundiced tinge, tachycardia, muffled heart sounds, faint systolic murmur at the apex, a decrease in the amplitude of the T wave in the chest leads of the ECG (non-specific changes). Slight enlargement of the liver, enlargement of the spleen is not characteristic.

Hemorrhagic syndrome: complaints - bleeding, objectively - hemorrhagic rashes on the skin mainly in the area of the legs, thighs, abdomen, sometimes on the face. Hematomas form at the injection site. With an acute course, nasal, gastrointestinal, renal, pulmonary, uterine bleeding, intracerebral hemorrhages are possible.

Propensity to infectious and inflammatory processes (angina, pneumonia, etc.) - due to a deficiency of granulocytes.

Laboratory data in hypoplastic anemia.

General blood test:

1. A significant decrease in hemoglobin and erythrocytes.
2. Anemia is normochromic, normocytic (with pronounced hemorrhagic syndrome - hypochromic anemia).
3. Leukopenia.
4. Thrombocytopenia.
5. ESR increase.
6. A sharp decrease in the number of reticulocytes.

General analysis of urine:

1. Urobilin in hemolysis syndrome.
2. Hematuria in hemorrhagic syndrome.

Biochemical analysis:

1. The content of crude fine iron is increased.
2. The content of unconjugated bilirubin is increased in hemolysis syndrome.

Immunological analysis of blood: decrease in B-lymphocytes, T-lymphocytes.
Coagulogram: hypocoagulation caused by thrombocytopenia.
Myelogram:

1. Reduction of cells of erythroid, myeloid and megakaryocytic germs.
2. The number of reticulocytes is sharply reduced.
3. The number of sideroblasts and siderocytes is increased.

Study of the trepanobioptate of the iliac crest:
"Devastation" of the bone marrow (cytosis in biopsy <25%).
Replacement of hematopoietic brain with adipose tissue.
Areas of hemorrhage.

Instrumental studies in hypoplastic anemia.
1. Ultrasound of the abdominal cavity: slight enlargement of the liver.
2. Ophthalmoscopy: retinal hemorrhages are possible.
3. ECG: diffuse changes in the myocardium (decrease in the amplitude of the T wave, its smoothing in the chest leads).

Differential diagnosis in hypoplastic anemia.

1. Acute leukemia.
2. Megaloblastic anemia
3. Myelodysplastic syndrome.
4. Marciafava-Micheli disease.
5. Agranulocytosis.
6. Pancytopenia syndrome in other diseases (chronic active hepatitis, liver cirrhosis, tuberculosis, sepsis, malignant neoplasms, systemic connective tissue diseases).

Complications of hypoplastic anemia.
A complication of hypoplastic anemia is hypoxia of organs and tissues (first of all, the brain and heart are affected). Severe bleeding is possible - nasal, gastrointestinal, renal, pulmonary,

uterine bleeding, intracerebral hemorrhages. Ulcer-necrotic lesions of the oral mucosa and other infectious complications often occur.

Treatment of hypoplastic anemia.

1. Treatment with glucocorticoids (prednisone orally 60-120 mg per day.
2. Treatment with anabolic agents (retabolil 100 mg [2 ml] IV once a week).
3. Androgen treatment - for men (testosterone propionate 5% 1 ml intravenously 2 times a day).
4. Treatment with cytostatics (azathioprine 0.05 g orally 3 times a day).
5. Splenectomy (in the absence of effect from glucocorticoids).
6. Treatment with antilymphocyte globulin.
7. Treatment with cyclosporine ("Sandimmun Neoral" 100 mg orally 2 times a day).
8. Bone marrow transplantation (in the absence of effect from other methods of treatment).
9. Treatment with colony-stimulating factors (filgrast IV 10 μg/kg/day).
10. Red blood cell transfusions.
11. Desferalotherapy (desferal 500 mg IV once a day).
12. Platelet transfusions.
13. Immunoglobulin treatment.

Prevention of hypoplastic anemia.

Prevention consists in preventing the harmful effects of chemical and physical factors, medicines, and infectious agents.

Prognosis in hypoplastic anemia.

The prognosis of hypoplastic anemia for life, working capacity and recovery is unfavorable. With adequate treatment, the 7-year survival rate is 55%. In some cases (when used in the complex treatment of bone marrow transplantation), recovery is possible.

Equipment:study room, multimedia presentation on the topic of classes, laptop, multimedia projector.

Plan:

2. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (checking of workbooks, communication with a patient with anemia in order to collect complaints and history, physical examination of the patient; evaluation of clinical examination data and laboratory and instrumental data*),*conducting a test control, solving a clinical problem, written solution of problems of the Step-2 type (10 problems), frontal survey, discussion, role-playing on the subject of the lesson.

2.1. Requirements for the theoretical readiness of applicants to perform practical classes:

the applicant must know the modern definition, etiology, pathogenesis, classifications of anemia, subjective and objective data in these diseases, know laboratory and instrumental data in this pathology.

List of didactic units:
- to conduct a subjective examination of patients with hypo- and aplastic anemia
- conduct an objective examination of patients with hypo- and aplastic anemia
- appoint a plan for additional laboratory and instrumental examinations of patients with hypo- and aplastic anemia

1. Describe the manifestations of anemic syndrome in hypoplastic anemia.
2. Name the features of the clinical picture of hypoplastic anemia.
3. Describe changes in the general blood analysis of patients with hypoplastic anemia
4. To characterize changes in the bone marrow punctate of a patient with hypoplastic anemia.
5. Describe dental manifestations in patients with hypoplastic anemia.
6. Describe the possible complications of hypoplastic anemia.
7. Explain the principles of treatment of a patient with hypoplastic anemia depending on the etiology.

3. Formation of professional skills and abilities:
mastering communication skills (collecting complaints, detailing complaints, collecting anamnesis, evaluating the results of the interview)
formation of the ability to perform a clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to perform a physical examination of the patient),

formation of the ability to evaluate the data obtained during the clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis;
carry out a clinical interpretation of the main symptoms and syndromes in these diseases

formation of the ability to conduct a modern laboratory-instrumental examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to prescribe a plan of laboratory-instrumental examination, give an assessment of the examination results)

3.1. Control materials for the final stage of the lesson:

"STEP 2" tasks.

TASK #1
A 25-year-old patient was hospitalized due to general weakness, tinnitus, and dizziness. There is a history of frequent angina, pneumonia, bleeding from the nose, gums, and uterine bleeding. Periodically hemorrhagic rashes in the abdomen and thighs. In the blood:

erythrocytes - 2.2×1012/l; hemoglobin – 65 g/l; color index – 0.88; leukocytes – 3.2×109/l, platelets – 86×109/l, ESR 28 mm/h, serum iron – 25 μmol/l. A decrease in the number of megakaryocytes in the myelogram. Neutrophil maturation index - 1.5. What is the most likely diagnosis?

A. Acute erythromyelosis
B. + Hypoplastic anemia
C. Hemolytic anemia
D. Iron deficiency anemia

TASK #2
In a patient who received general gamma irradiation, on the 14th day, the following was found in the peripheral blood: leukaemia. - 3.0 x10*9/l, ER -3.4x10*9/l and platelets - 80x10*9/l. What caused such changes?

A. Hemolysis
B. By shortening the lifespan of formed blood elements
C. + Suppression of cellular hematopoiesis
D. Hypersplenism
E. By increasing the terms of maturation of cells

TASK #3
A 43-year-old man is undergoing a medical examination. Objectively: paleness of the skin and mucous membranes, smoothness of the papillae of the tongue, transverse striation of the nails, cracks in the corners of the mouth, tachycardia. Hemoglobin content in blood - 96 g/l; anisocytosis, poikilocytosis. The most likely causative factor of this condition is the insufficient supply of the following microelement to the body:

A. Selenium
B. +Iron
C. Copper
D. Zinc
E. Magnesium

TASK #4
A 19-year-old patient has been experiencing increasing weakness, skin hemorrhages, epistaxis, and low-grade fever for the past 2 months. Lymph nodes, liver, spleen are not enlarged. In the blood: Hv-50 g/l, er.-1.5x10*12/l, reticulocytes - 0.2%, CP - 0.9, leuk.-1.8x10*9/l, p/ya -1 %, s/y - 38%, eoz.-1%, lymph. - 55%, mon.- 5%, platelets - 30x10*9/l, SZE-60 mm/h, serum iron - 15μmol/l. What is the most likely diagnosis?

A. Acute leukemia

B. Hemolytic anemia
C. +Aplastic anemia
D. B12- deficiency anemia
E. Iron deficiency anemia

TASK #5
A 19-year-old patient has been experiencing increasing weakness, skin hemorrhages, epistaxis, and low-grade fever for the past 2 months. Lymph nodes, liver, spleen are not enlarged. In the blood: Hv-50 g/l, er.-1.5x10*12/l, reticulocytes - 0.2%, CP - 0.9, leuk.-1.8x10*9/l, p/ya -1 %, s/y - 38%, eoz.-1%, lymph. - 55%, mon.- 5%, platelets - 30x10*9/l, SZE-60 mm/h, serum iron - 15μmol/l. What is the most likely diagnosis?

A. Acute leukemia
B. Hemolytic anemia
C. +Aplastic anemia
D. B12- deficiency anemia
E. Iron deficiency anemia

PRACTICAL TRAINING

Practical lesson No. 17

Subject: Hemato-oncological diseases. Modern views on etiology and pathogenesis. WHO classification. General principles of treatment. The role of the dentist in the diagnosis, treatment of manifestations and complications of the therapy of hemato-oncological diseases.

Goal: Acquiring knowledge and mastering professional competences during the examination of a patient with leukemia - questioning, physical examination, laboratory and instrumental research.

Basic concepts: Diagnostic criteria of leukemia

Diagnostic criteria of acute leukemia (HL).

The clinical picture of GL can be different, which depends on the suppression of normal hematopoiesis.

In the course of the disease, three stages of the course are distinguished:

1) Initial - can be diagnosed retrospectively.

2) The stage of the developed clinical picture.

3) Terminal stage.

There are several variants of the initial stage:

The acute onset of the disease is observed in half of the patients and is characterized by high t of the body (sometimes with symptoms), intoxication, inflammatory weakness, joint pain, abdominal pain, pain when swallowing. The onset of the disease can be interpreted as flu, sore throat, rheumatism, acute appendicitis, acute appendicitis. Sometimes patients are mistakenly admitted to the infectious disease department.

The onset of the disease with pronounced clinical manifestations is observed in 10% and is characterized by profuse bleeding (nasal bleeding), etc.

- Slow onset - manifested by general weakness, fatigue, malaise, minor hemorrhages in the form of bruises and slight enlargement of L/nodes.

- Latent period of flow – observed in 5% of patients, the disease is discovered by chance (when examining peripheral blood during preventive examinations).

Phases of the course of the disease are characteristic of HL

1. Aleukemic (without the release of blast cells into the blood).

2. Leukemic (with the release of blast cells into the blood)

The stage of the developed clinical picture includes the main syndromes.

1) Hyperplastic.
2) Hemorrhagic.
3) Tumor intoxication syndrome.
4) Anemic syndrome.
5) Immunodeficient.
6) Neuroleukemia
7) Ulcerative-necrotic changes

- hyperplastic syndrome: characterized by an increase in lymph nodes, pain in the bones, heaviness and pain in the left and right hypochondrium, hepatosplenomegaly, development of ulcer-necrotic syndrome. Other symptoms may appear; such as headache, shortness of breath, cough, sciatica, etc

- anemic syndrome: characterized by dizziness, flickering of flies before the eyes, shortness of breath during physical exertion, palpitations, noise in the head and ears - symptoms that are characteristic of anemia)

- hemorrhagic syndrome:

Characteristic: skin hemorrhages, bleeding gums, nosebleeds (for example, such symptoms as in thrombocytopenia, hemorrhagic vasculitis). In the anamnesis, there may be infections - flu, contact with chemical preparations, poisonous chemicals.

It is characterized by an increase in body temperature, weakness, changeability, lack of appetite, ossalgia. Such symptoms make it possible to suspect infectious diseases (tuberculosis, sepsis, etc.).

-Immunodeficiency syndrome is characterized by the addition of severe pneumonia, which very often leads to the death of patients. That is, there is a violation of cellular and humoral immunity.

Acute leukemia is characterized by the development of manifestations of other organs and systems.

1) Neuroleukemia: characterized by the development of leukemic infiltration in the membranes and substance of the brain and spinal cord. There are several forms of neuroleukemia:

In addition, leukemic infiltration of the brain, prostate, bladder, lesions of the gastrointestinal tract, esophagus, stomach, liver, kidneys, and heart may occur.

The diagnostic criteria for HL are the study of peripheral blood and bone marrow punctate.

The main criterion for acute leukemia is the presence of more than 30% blast cells in the bone marrow (blastemia).

Their number can be up to 80-90%). In the aleukemic phase, GL blasts may be absent in the blood. In such cases, the diagnosis is made based on the results of the bone marrow examination.

Cytochemical diagnosis of acute leukemias

The form of acute leukemia is determined using a cytochemical study.

Among the instrumental methods of research, the following are used: tomography or X-ray of the chest, ECG, ultrasound, FGDS, in which changes characteristic of leukemic infiltration of the relevant organs and tissues are found.

Diagnostic criteria for chronic lymphocytic leukemia (CLL)

The diagnosis is usually made on the basis of the results of a general clinical examination of the patient and morphological analysis of peripheral blood smears. In the course of CLL, initial, advanced and terminal stages of the disease are distinguished (according to the old classification).

The initial stage of CLL is moderate lymphadenopathy, the clinic develops slowly and imperceptibly. Complaints are mainly asthenic in nature.

The disease at this stage is detected by chance during a routine blood test, when an increase in the relative (40-50%) and absolute number of lymphocytes is detected with a slight leukocytosis.

It should be emphasized that there are no "causeless" lymphocytes, and leukemic reactions of the lymphoid type (infectious mildly symptomatic lymphocytosis, lymphocytosis with whooping cough, rubella) are found only in children, infectious mononucleosis - a disease also mainly of young age - is diagnosed by the blood count. In which lymphocytes are found, which differ from the usual large size, a wide rim of cytoplasm around the nucleus and its brighter color.

An increase in the absolute and relative number of lymphocytes should always alert the doctor.

The majority of peripheral blood cells are represented by mature lymphocytes. Individual Botkin-Gumprecht shadows (semi-destroyed nucleus of lymphocytes with remnants of nucleoli) can also be detected. They form when a smear of blood is applied to a glass slide, when easily injured tumor lymphocytes are crushed, losing cytoplasm.

Expanded (pronounced clinical and hematological manifestations).

In this stage, asthenic complaints intensify. Characteristic lymphoproliferative syndrome: there is a generalized lesion of lymph nodes in the following sequence: first cervical, then axillary, then conglomerates of nodes appear in the mediastinum, in the abdominal cavity and inguinal areas. Lymph nodes have a pasty-elastic consistency. More often, they are painless, not welded together and with the skin, without ulcers and do not suppurate.

Characteristic hepatosplenomegalic syndrome. Changes in the lungs are manifested by frequent banal pneumonias and specific leukemic infiltration. The cardiovascular system, gastrointestinal tract, and genitourinary system are affected.

In CLL, infiltration of the UIII pair of cranial nerves is often observed, with hearing loss, congestion, and tinnitus.

The terminal stage is characterized by exhaustion, a significant deterioration of the general condition, the development of complications, an increase in anemia (not only due to the suppression of erythropoiesis, but also due to the occurrence of cases of autoimmune hemolytic anemia), the appearance of hemorrhagic syndrome, a significant increase in lymph nodes and spleen, refractoriness to the therapy. The transition of CLL to the terminal stage is often accompanied by sarcomatous growth in the lymph node.

Such lymph nodes begin to grow rapidly, acquire a stony density, infiltrate and squeeze neighboring tissues, causing swelling and pain syndrome. Often, sarcoid growth in the lymph nodes is accompanied by an increase in temperature. Sometimes such nodes are located in the subcutaneous tissue of the face, trunk, limbs, under the mucous membrane in the oral cavity, nose, and the vessels that develop in them give them the appearance of hemorrhages. One of the manifestations of the terminal stage of the disease can be severe renal failure as a result of infiltration of the parenchyma of the organ by tumor cells. Herpetic infection is a serious, often fatal complication.

In the clinical picture, 2 syndromes are distinguished:

1. lymphoproliferative, caused by lymphadenopathy, splenomegaly and lymphoid proliferation of the bone marrow:

a) general symptoms caused by intoxication, the growth of leukemic cells in the bone marrow, spleen (itching, fever, sweating, pain in the bones, spleen and liver);

b) hepato- and splenomegaly;

c) leukemic infiltrates in the skin (leukemias);

d) symptoms are associated with an increase in regional lymph nodes (mediastinal, mesenteric);

e) characteristic changes in bone marrow and peripheral blood.

2. Syndrome of complications:

a) purulent - inflammatory;

b) autoimmune (autoimmune hemolytic anemia, autoimmune thrombocytopenia).

direct causes of death of patients with CLL are most often intercurrent infection, severe anemia, hemorrhages in vital organs and intoxication.

Diagnosis of CLL:

Leukocytosis with absolute lymphocytosis in the blood.

More than 30% of lymphocytes in the bone marrow punctate with diffuse lymphoid hyperplasia in the bone marrow trepanation.

Enlargement of the lymph nodes and spleen is an optional symptom of CLL, but when these organs are involved in the process, a diffuse proliferation of lymphocytes is observed.

An additional diagnostic feature is Huprecht's shadow in a blood smear.

The benign form of CLL causes a very slow, noticeable only over years, but not months, increase of lymphocytes in the blood in parallel with the growth of leukocytes.

A very slow increase in lymphocytosis to a noticeable increase in lymph nodes can last for years and decades. All this time, the patients are on the "D" record, and may need cytostatic therapy.

Progressive (classical) form.

CLL starts as benign, but the number of white blood cells increases from month to month along with the size of the lymph nodes.

Tumor form of CLL.

A feature of this form is a significant increase and dense consistency of lymph nodes with low leukocytosis.

The splenomegalic form of CLL is characterized by predominant enlargement of the spleen with widespread enlargement of lymph nodes and varying levels of leukocytosis. This form is prognostically more favorable.

Bone marrow form of CLL. rapidly progressive pancytopenia, total or partial replacement of the bone marrow by mature lymphocytes. The lymph nodes are not enlarged, the spleen, with rare exceptions, is also not enlarged, the liver is also of normal size. Prognostically favorable form.

Diagnostic criteria for chronic myelogenous leukemia (CML)

Chronic myeloid leukemia is a classic hematological disease that goes through three stages of development: the chronic stage, the acceleration stage, and the stage of transformation into acute leukemia.

Diagnosis of the chronic phase

CML develops mostly latently. The clinical picture is manifested by various symptoms. Typical complications occasionally unmask CML.

1. Circumstances of discovery

- In most cases, the disease is detected by chance or thanks to a systematic general blood test.

- General symptoms: asthenia; emaciation; a feeling of discomfort in the left hypochondrium; deterioration of the general condition of varying degrees of severity, but sufficient for the appointment of a general blood test.

- Clinical examination. Palpable splenomegaly is the main classic symptom. Now this symptom occurs less and less due to early diagnosis of the disease.

- Complications: priapism, gout attack, splenic infarction, hemorrhagic symptoms.

Granulocytic Neutrophilic Hyperleukocytosis with myelemia should alert the doctor. Suspicion of CML is confirmed by eosinophilia, basophilia, and hyperthrombocythemia.

The final diagnosis is established after the discovery of the Philadelphia chromosome or its molecular equivalent - a gene.

2. Additional examination

- An ordinary general blood test is often enough to establish a diagnosis. He reveals significant hyperleukocytosis, often more than 50 x 109/l. Hyperleukocytosis is associated with an increase in the absolute number of neutrophilic granulocytes. The increase in the absolute number of basophils and especially eosinophils is less proportional. Myeloma consists mainly of mature precursor cells (myelocytes and metamyelocytes). Young cells (pro-myelocytes and myeloblasts) occasionally occur. The absolute number of other blood leukocytes remains unchanged, although in percentage terms their number decreases significantly. Other abnormalities of the general blood test include slight normocytic anemia. The increase in the number of platelets over 500 x 109/l is much more pronounced. Thrombocytopenia is rare at diagnosis.

- Biochemical blood analysis reveals hyperuricemia proportional to hyperleukocytosis and a high level of lactate dehydrogenase. In granulocytes with CML, the level of neutrophil

alkaline phosphatase is significantly reduced, the enzymatic activity of which is determined on blood smears based on 100 neutrophils. Detection of a reduced level of alkaline leukocyte phosphatases is not sufficient for a definitive diagnosis of CML. The method has many false negative errors and is not specific. In classic cases of CML, elevated levels of vitamin B12 and histamine are found.

- Coagulation and homeostasis. Prolongation of bleeding time reflects acquired thrombocytopathy, which also occurs in cases of other myeloproliferative syndromes. The prolongation of Kwik's time can be associated with a deficiency of the U-th factor.

- A myelogram must be done, although it helps little in confirming the diagnosis. The myelogram reveals only an increase in the cellularity of the bone marrow with a pronounced predominance of elements of the neutrophilic series. It helps during differential diagnosis and is especially important for studying the karyotype.

- Bone marrow biopsy confirms the diagnosis of myeloproliferative syndrome with narrowing of fat depots. At the time of diagnosis, she does not show significant fibrosis (no signs of collagen fibrosis, but there is reticular fibrosis).

The presence of myeloid cells in the peripheral blood. Cells of the first four rows of the modern scheme of hematopoiesis. A collection of eosinophils, basophils and neutrophils.

Study of factors of the external pathway of blood coagulation in the presence of excess tissue thromboplastin. Formula of cellular elements of bone marrow.

• Chronic myelomonocytic leukemia. Differential diagnosis is sometimes extremely difficult. Only a karyotype or a molecular biological study can establish a true diagnosis. In clinical practice, it is necessary to distinguish chronic myelomonocytic syndrome, which belongs to the group of myelodysplasias, and chronic myelomonocytic leukemia, which belongs to myeloproliferative syndromes. Clinical symptoms of leukemic progression are clearly expressed (exudative serositis, specific skin lesions}, in addition, bone marrow failure (anemia, thrombocytopenia) is very often diagnosed. A general blood test reveals anemia, monocytosis, mild myelemia, and thrombocytopenia. Myelogram and bone marrow biopsy confirm diagnosis Blood and urine lysozyme is significantly elevated.

Equipment:study room, multimedia presentation on the topic of classes, laptop, multimedia projector.

Plan:

1. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge (checking of workbooks, communication with a leukemia patient in order to collect complaints and history, physical examination of the patient; evaluation of clinical examination data and laboratory and instrumental data*),*conducting a test control, solving a clinical problem, written solution of problems of the Step-2 type (10 problems), frontal survey, discussion, role-playing on the subject of the lesson.
2.1. Requirements for the theoretical readiness of applicants to perform practical classes: the applicant must know the modern definition, etiology, pathogenesis, classifications of anemias, leukemias, hemorrhagic diatheses, subjective and objective data in these diseases, know laboratory and instrumental data in this pathology.

List of didactic units:
- to conduct a subjective examination of leukemia patients
- conduct an objective examination of leukemia patients,
- appoint a plan for additional laboratory and instrumental examinations of patients with hemorrhagic diatheses
- evaluate the results of laboratory tests in patients with
- leukemia
- master the skills and abilities to assess the leading clinical syndromes in patients with leukemia

2.2. Questions to check basic knowledge on the topic of the lesson:

1. Classification of leukemias.

2. Etiology and pathogenesis of leukemias.

3. Main clinical syndromes in leukemia.

4. Blood parameters in acute and chronic leukemias.

3. Formation of professional skills and abilities:

mastering communication skills (collecting complaints, detailing complaints, collecting anamnesis, evaluating the results of the interview)

formation of the ability to perform a clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to perform a physical examination of the patient),

formation of the ability to evaluate the data obtained during the clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis;
carry out a clinical interpretation of the main symptoms and syndromes in these diseases

formation of the ability to conduct a modern laboratory-instrumental examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to prescribe a plan of laboratory-instrumental examination, give an assessment of the examination results)

3.1. Control materials for the final stage of the lesson:
Situational tasks:

Tasks of the STEP-2 type

3. The patient turned to the doctor with complaints of general weakness, pain in the tubular bones, high temperature. The examination revealed a systemic increase in lymph nodes, hepato-lienal syndrome. In the blood test: er.-2.6 t/l; HB-67 g/l; platelets - 45 g/l; leukocytes 56 g/l, blasts 87%; p/y-1%; s/y-7%; lymphocytes-5%; ESR 55 mm/hour; Your diagnosis?

+ A Acute leukemia

In Chronic myeloid leukemia

From Eritrea

D Myeloma disease

4. In a 60-year-old patient, during a preventive examination, it was found in the blood test that the number of leukocytes was 60 g/l, and in the formula, the number of lymphocytes was 89%. Enlargement of cervical and inguinal lymph nodes. Slight weakness. Your diagnosis?

And tuberculosis of the lymph nodes;

+ In chronic lymphocytic leukemia;

With infectious mononucleosis;

D infectious lymphocytosis;

Is lymphogranulomatosis.

5. A 68-year-old man complains of fatigue, sweating, and enlarged cervical, submaxillary, and axillary lymph nodes. In the blood: leukocytes - 35 g/l, of which 60% are lymphocytes; Botkin-Gumprecht corpuscles; the level of hemoglobin and the number of platelets are normal. In the myelogram, lymphocytes are -40%. What is the most likely diagnosis?

And acute leukemia;

In lymphogranulomatosis;

+ With chronic lymphocytic leukemia;

D tuberculous lymphadenitis;

It is chronic myelogenous leukemia.

6. A 48-year-old man complains of weakness, sweating, and heaviness in the upper abdomen. During the examination, hepatosplenomegaly was found in him. In the blood analysis: neutrophilic leukocytosis, eosinophil-basophil association, single blast cells. Liver biopsy showed myeloid infiltration. Your diagnosis?

+A chronic myelogenous leukemia

In chronic lymphocytic leukemia;

With acute leukemia;

D liver cirrhosis;

E leukemoid reaction.

7. A 65-year-old man has been ill for several years, notes an increase in cervical and axillary lymph nodes, sweating, weakness. The condition worsened 2 weeks ago: the liver, spleen, and lymph nodes increased. In the blood test: er.-2.8 t/l; HB - 92 g/l; L-68 g/l; lymph - 86%; ESR - 48 mm/hour. Botkin-Gumprecht cells in peripheral blood smear. Which of the diagnoses is correct?

And chronic myeloid leukemia

In subleukemic myelosis

With lymphogranulomatosis

D tuberculosis

+E chronic lymphocytic leukemia

8. The patient has a systemic increase in lymph nodes, hepato-lienal syndrome, pronounced jaundice. In the blood test: r.-2.4 t/l; HB - 58 g/l; reticulocytes - 10%; platelets-145g/l; leukocytes - 56 g/l; lymphocytes-87%; p/y-1%; s/y-7%; m-5%; ESR-55mm/hour. What is your underlying medical diagnosis? What complication of the main disease can be suspected based on clinical and laboratory indicators?

And aplastic anemia

+ In chronic lymphocytic leukemia. Symptomatic hemolysis

With toxic neutropenia

D agranulocytosis

E B12 deficiency anemia.

9. A 23-year-old man became acutely ill. During the week, the temperature is 39-40 C, weakness, sweating, dizziness, nose and gum bleeding, hemorrhage on the skin of the body. In the blood test: HB-72 g/l; r.-2.3 t/l; leukocytes 7.6 g/l; with 5%; l-9%; blast cells 86%; ESR - 23mm/hour. Which of the following is the most reliable?

+ And acute leukemia

I have sepsis

From tuberculosis

D hemorrhagic vasculitis

E systemic lupus erythematosus

10 A 27-year-old patient has been complaining of fatigue, sweating, and heaviness in the left hypochondrium for about a year, especially after eating. Objectively: enlargement of the spleen, liver. In the blood: er. – 3.21012/l, Hb – 100 g/l, CP – 0.87, leuk. – 100109 /l, b. - 7%, e. - 5%, m. - 15%, y. - 16%, p. - 10%, p. – 45%, lymph. - 2%, mon. - 0%, reticle. - 0.3%, thrombus. – 400109/l, ESR – 25 mm/h. What is the most likely diagnosis?

A.+ Chronic myelogenous leukemia.

D. Erythremia.

B. Chronic lymphocytic leukemia.

E. Liver cirrhosis.

C. Acute leukemia.

11. A 46-year-old patient complains of itching of the skin, sweating, especially at night, temperature rise to 38.6°C. Objectively: on the skin of the chest there are traces of scratching, supraclavicular lymph nodes the size of a pigeon's egg, not fused to the skin. Which research is the most appropriate?

+A. Puncture of an enlarged lymph node.

B. General blood analysis.

C. Overview X-ray of the chest.

D. Imunogram.

E. Total protein and protein fractions

11. A 63-year-old patient complained of lower back pain. A course of physiotherapeutic treatment was carried out for sciatica. However, the patient's condition did not improve. The patient underwent X-ray of the bones of the spine and pelvis, which revealed osteoporosis and significant bone defects. Moderate normochromic anemia in the blood, proteinuria in the urine. Total blood protein – 10.7 g/l. What disease should be thought of first of all?

+A. Myeloma disease.

D. Bone metastases.

B. Urinary stone disease.

E. Systemic osteoporosis.

C. Acute sciatica.

3.2. Requirements for work results, including before registration: substantiation of the diagnosis based on complaints, medical history and life data, clinical and laboratory-instrumental examination.

3.3. Control materials for the final stage of the lesson: solving two clinical problems on the topic of the lesson, answering 10 tests (*if necessary*).
4. Summing up,

PRACTICAL TRAINING

Practical lesson No. 18

Subject: Thrombocytopenia and thrombocytopenia. . Etiology, pathogenesis, clinic, diagnosis and principles of treatment. The role of the dentist in prevention.

Goal: Acquiring knowledge and mastering professional competences during examination of a patient with thrombocytopenia and thrombocytopathy - questioning, physical examination, laboratory-instrumental studies.

Basic concepts: The most famous and common disease of this group is idiopathic thrombocytopenic purpura (ITP). Idiopathic thrombocytopenic purpura can be both hereditary and acquired, the latter variant is more common. The frequency of ITP is approximately 1/10,000, while women are affected approximately 2 times more often than men (in childhood, girls and boys are affected with the same frequency). Acquired ITP is more common in women aged 20 to 50 years. Often ITP occurs against the background of such

diseases as chronic lymphocytic leukemia, lymphogranulomatosis, bronchial asthma, systemic lupus erythematosus and other autoimmune diseases. In this case, the main reason for the decrease in the number of platelets in the blood is the suppression of the megakaryocytic germ of the bone marrow, but the joining of the immune mechanism increases the thrombocytopenia. Antibodies in ITP are produced against unchanged platelet antigens, most often they are directed against the main and most immunogenic proteins of platelets - the complex of membrane glycoproteins (GP) IIb -IIIa and DP Ib. The basis of the pathogenesis of the disease is the shortening of the life span of platelets. The normal life expectancy of platelets reaches 7-10 days, and in Werlhoff's disease (ITP) several hours. As a result of the destruction of platelets (destruction occurs both due to the action of autoantibodies and due to destruction in the spleen), there is a sharp activation of thrombocytopoiesis. The formation of platelets increases by 2-6 times, the number of megakaryocytes increases, the separation of platelets from megakaryocytes accelerates sharply. All this creates a false impression that it is disturbed by the unlacing of platelets, although in fact the unlacing occurs much faster.

The so-called haptenic (heteroimmune) thrombocytopenia is a separate subgroup. In this pathology, autoantibodies are produced against changed or foreign antigenic structures on the surface of platelets that appear, for example, as a result of exposure to drugs or viruses. Among the drugs capable of stimulating the production of hapten antibodies and medicinal thrombocytopenia, drugs of the quinidine series and heparin are distinguished. Drug-induced thrombocytopenias are temporary and usually disappear after the drug is stopped. Heteroimmune thrombocytopenia as a result of exposure to viruses is most common in children, sometimes thrombocytopenia can be a consequence of vaccination. In adults, the association of thrombocytopenia with HIV infection is known. It is assumed that viruses can change the antigenic structure of platelets, both as a result of interaction with membrane proteins, and as a result of non-specific fixation on the surface of platelets. As a result, production of antibodies against altered platelet antigens and cross-reaction of antiviral antibodies with platelets can occur.

Thrombocytopathies.

Thrombocytopathies are a large group of diseases characterized by a qualitative disorder of blood platelets (platelets). In thrombocytopenia, platelet aggregation and adhesion functions are reduced or completely absent, so the main symptom of thrombocytopenia is increased bleeding. Thrombocytopathies occur with the same frequency in both men and women, but signs of increased bleeding are more pronounced in women.

Thrombocytopathies are divided into two large groups:*innate* and*acquired*during life

Congenital disorders of platelets are characterized by a hereditary deficiency of special proteins on the surface of platelets or protein granules that are in the cavity of platelets, as well as a violation of the shape and size of platelets. Congenital thrombocytopathies include: Glanzmann thrombocytopenia, Bernard-Soulier syndrome, May-Hegglin anomaly, as well as extremely rare platelet defects such as Pearson-Stobi anomaly, essential athrombosis, etc. The most dangerous manifestations of the disease are hemorrhages in the retina, brain and its membranes .

At*purchased* thrombocytopathies, as in congenital ones, there is a protein deficiency, both on the surface of platelets and in the platelets themselves, but the cause of this is external influence. Clinical manifestations are the same as in congenital thrombocytopenia.

Causes of acquired thrombocytopenia:

• diseases of the blood system (acute leukemia, chronic leukemia, B12 deficiency anemia, various forms of blood coagulation factor deficiencies);

• liver disease, most often - liver cirrhosis;

• diseases of the kidneys with a violation of their functions in the last stages (severe forms of glomerulonephritis, polycystosis, etc.);

• massive transfusions of blood and plasma (in this situation, changes in platelets are eliminated, as a rule, on their own within 2-3 days);

• diseases of the thyroid gland, such as hypothyroidism, the treatment of which completely restores platelet functions;

• use of various medicines: aspirin, derivatives of non-steroidal anti-inflammatory drugs, such as indomethacin, ortofen; as well as trental, curantyl, eufilin, some psychotropic drugs - aminazine, amitriptyline, etc. The time of action on platelets of each of the drugs depends on the time of circulation in the blood, the effect of some of them, for example, aspirin, can last up to 5 days after a single dose. The degree of severity of increased bleeding is strictly individual for each person.

In the treatment, drugs are used that strengthen the adhesive ability of platelets (this is aminocaproic acid, ATP, hormonal therapy). In case of massive bleeding, replacement therapy with blood products is used: fresh-frozen plasma, cryoprecipitate, and in rare cases, a concentrate of donor platelets. With acquired thrombocytopenia, the main task is to eliminate the cause of increased bleeding.

Equipment:study room, multimedia presentation on the topic of classes, laptop, multimedia projector.

Plan:

2. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge (checking of workbooks, communication with a leukemia patient in order to collect complaints and history, physical examination of the patient; evaluation of clinical examination data and laboratory and instrumental data*),* conducting a test control, solving a clinical problem, written solution of problems of the Step-2 type (10 problems), frontal survey, discussion, role-playing on the subject of the lesson.

2.1. Requirements for the theoretical readiness of applicants to perform practical classes: the applicant must know the modern definition, etiology, pathogenesis, classifications of anemias, leukemias, hemorrhagic diatheses, subjective and objective data in these diseases, know laboratory and instrumental data in this pathology.

List of didactic units:

- to acquaint the applicants, to create an idea of the etiology and pathogenesis of thrombocytopenia and thrombocytopenia.
- the applicant must learn the main symptoms and syndromes of patients with thrombocytopenia and thrombocytopenia;
- to provide applicants with the opportunity to master the skills of examining patients with these diseases
- to provide students with the ability to draw up an examination plan for patients with thrombocytopenia and thrombocytopenia of various genesis.

2.2. Questions to check basic knowledge on the topic of the lesson:

1. List the diseases and conditions that are accompanied by thrombocytopenia. Name the degrees of its severity.
2. Give the classification of thrombocytopenia.
3. Name the drugs that cause drug-induced thrombocytopenia and thrombocytopenia.
4. To characterize the type and manifestations of the hemorrhagic syndrome that occurs in patients with thrombocytopenia and thrombocytopenia.
5. Describe the manifestations of hemorrhagic syndrome in the oral cavity in patients with platelet pathology.
6. Name the methods of laboratory research that make it possible to establish a clinical diagnosis of thrombocytopenia and thrombocytopenia of various etiologies.
7. To characterize the degree of severity of thrombocytopenia by the number of platelets in peripheral blood and manifestations of hemorrhagic syndrome.
8. Describe the treatment of idiopathic thrombocytopenic purpura.

9. Name the indications for platelet concentrate transfusion in patients with thrombocytopenia.
10. Name the drugs that help stop bleeding by improving the function of platelets.
11. Name the drugs that are contraindicated in patients with thrombocytopenia and thrombocytopenia. Explain why.
12. To characterize the dentist's tactics during invasive manipulations in patients with thrombocytopenia and thrombocytopathy.

3. Formation of professional skills and abilities:

mastering communication skills (collecting complaints, detailing complaints, collecting anamnesis, evaluating the results of the interview)

formation of the ability to perform a clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to perform a physical examination of the patient),

formation of the ability to evaluate the data obtained during the clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis;
carry out a clinical interpretation of the main symptoms and syndromes in these diseases

formation of the ability to conduct a modern laboratory-instrumental examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to prescribe a plan of laboratory-instrumental examination, give an assessment of the examination results)

3.1. Control materials for the final stage of the lesson:
1. The patient developed hemorrhagic syndrome of the microcirculatory type.
1) Describe the clinical manifestations of hemorrhagic syndrome in a patient.
2) Name the questions that should be asked to the patient when taking an anamnesis to find out the cause of bleeding.
3) Assign an examination plan to establish a diagnosis.
4) Describe characteristic changes in the patient's hemostasiological indicators.
List the measures aimed at stopping bleeding after tooth extraction in this patient.

"STEP" tasks.

TASK #1. Paleness of the skin, enlargement of the lymph nodes, liver and spleen, pain in the bones and joints, a significant number of immature cells in the leukocyte formula in the blood. What disease has the following symptom complex:
A. * Leukemia
B. Hypoplastic anemia
C. Thrombocytopenia

D. Capillarotoxicosis
E. Hemophilia

TASK #2. You are a nurse in the somatic department. A 5-year-old child was admitted to the hospital with complaints of nosebleeds, hemorrhages on the skin - asymmetric petechiae and ecchymoses. What changes in the general blood test will confirm the preliminary diagnosis of the disease?
A. * Thrombocytopenia
B. Anemia
C. Leukopenia
D. The presence of ballast cells
E. Neutrophilia

TASK #3. You are a nurse at a children's clinic. The child is 7 months old, was born prematurely, was on early artificial feeding, and is on dispensary registration for rickets. On April 20, she was hospitalized in a children's hospital after an attack of laryngospasm. What blood indicators must be taken into account to provide emergency care to a child and further treatment?
A. * Hypocalcemia
B. Thrombocytopenia
C. Leukocytosis
D. Hypoglycemia
E. Hyperbilirubinemia

TASK #4. An 11-month-old boy developed a petechial rash and ecchymoses on the skin of the trunk and limbs, moderate epistaxis. Objectively: pallor of the skin and mucous membranes, skin hemorrhagic syndrome. From the side of the heart and lungs - without pathology. The abdomen is soft, the liver and spleen are not enlarged. General blood analysis: er.-3.9 T/l, Hv-110 g/l, KP-0.9, leuk.-6.8 G/l, p.-3%, p.-38%, l .-57%, m.-2%, SZE-6 mm/h, platelets - 30 G/l. Blood clotting time according to Lee-White - 8 minutes. What is the most likely disease in the child?
A. *Idiopathicthrombocytopenic purpura
B. isoimmunethrombocytopenic purpura
C. Transimmunethrombocytopenic purpura
D. Hemorrhagic vasculitis
E. Thrombocytopathy

TASK #5. A 28-year-old woman consulted a doctor with complaints of skin hemorrhages after minor injuries and sprains on the front surface of the trunk and limbs. These manifestations appeared a few months ago. During the examination, mottled skin (fresh and old hemorrhages), positive symptoms of tourniquet and pinching, bleeding from the gums were revealed. In the blood of platelets 20.10^9/l, in the bone marrow there is an increased

number of megakaryocytes and there is no lacing of platelets; there is no retraction of the blood clot - serum is not separated. The treatment with steroid hormones had a positive effect. Recommended: medical genetic consultation and dispensary observation. What disease does the woman have?

A. *idiopathicthrombocytopenic purpura
B. Hemophilia
C. Randu-Osler disease
D. DVZ-syndrome
E. Hemorrhagic vasculitis

TASK #6. On the 10th day of the flu, the patient developed nosebleeds, small hemorrhages on the mucous membrane of the oral cavity and skin, and bleeding from the gums. Total blood: Hb-110 g/l, k.p.-0.9, L-7.1 g/l, platelets-90.0 g/l, P-6%, C-52%, M -12%, L-30%, ESR-18 mm/h. What preliminary diagnosis can be made?

A. *idiopathicthrombocytopenic purpura
B. acute leukemia
C. aplastic anemia
D. systemic lupus erythematosus
E. myeloma disease

TASK #7. The patient complains of general weakness, dizziness, crawling "tingles", numbness of the lower limbs, periodically shooting pain in the limbs, as well as a burning sensation at the tip of the tongue. During the examination: the skin is pale, the sclera is subicteric, the tongue is bright red, shiny, smooth. In the blood analysis: color index - 1.4, acrocytosis of erythrocytes, anisocytosis, Joly bodies, Cabot rings. For which disease are these symptoms typical?

A. *B12-folate deficiency anemia
B. Iron deficiency anemia
C. Chronic posthemorrhagic anemia
D. Hemolytic anemia
E. Thrombocytopenia

TASK #8. A 26-year-old patient complains of an increase in temperature to 38°C, painful swallowing, bad breath, bleeding gums. He suffers from rheumatism, takes butadione, amidopyrine. Objectively: the mucous membrane of the oral cavity is pale, hemorrhages, areas of necrosis on the tonsils and along the gingival margin in the area of the chewing teeth on the left. Lymph nodes are enlarged, painless. What changes in the blood test of this patient will be most likely?

A. *Agarulocytosis
B. Increasing the color index
C. Myeloblastosis
D. Lymphopenia

E. Thrombocytopenia

PRACTICAL TRAINING

Practical lesson No. 19

Subject: Hemophilia A, B, C. Willebrand's disease. Etiology, pathogenesis, clinic, diagnosis and principles of treatment.

Goal: Acquiring knowledge and mastering professional competences during examination of a patient with hemophilia - questioning, physical examination, laboratory-instrumental studies.

Basic concepts: Hemorrhagic diseases, which are manifested by increased bleeding, are becoming more and more common due to the wider use of chemical and physical factors in everyday life and production, leading to thrombocyto- and coagulopathy, immune vasculitis; and is also associated with the deterioration of the ecological situation. In addition to hemorrhagic syndrome, their growth is facilitated by the wider use of vascular prostheses, heart valves, artificial blood circulation devices and hemodialysis; use of drugs. For example, we are studying idiopathic thrombocytopenic purpura within the framework of this topic, which indicates the difficulties of etiological diagnosis of this thrombocytopathy. Hemorrhagic diatheses can be divided into thrombocytonemias - thrombocytopathies (Werlhoff's disease), some hereditary thrombocytopathies (Mayo's disease, Glanziana) and acquired thrombocytonemias (as a result of mechanical destruction - the use of DNA, dialyzers, valve prostheses, etc. and in generalization, when using drugs - chloramphenicol, NSAIDs tat.p.); on coagulopathy (congenital with deficiency of coagulation factors - hemophilia A, B, C, etc. and acquired: with DVS syndrome, use of anticoagulants) and hemorrhagic vasculitis.

Hemophilia- incurablegenetic disease, related to the violationcoagulation(coagulation) of blood; with this disease, the risk of death from hemorrhage into the brain and other vital organs increases sharply, even with a minor injury. Patients with a severe form of hemophilia are often disabled due to frequent hemorrhages in the joints (hemarthroses) and muscle tissues (hematomas).

Hemophilia appears throughmutationsone ofgenes, most often inX-chromosome. Depending on the specific gene, three types of hemophilia (A, B, C) are distinguished.

- Hemophilia Acaused by defectiveprotein— blood factor VIII, the so-called "classical hemophilia" (recessive mutationin the X chromosome)

- Hemophilia Bcaused by defective blood factor IX (recessive mutation in the X chromosome)
- Hemophilia Ccaused by defective blood factor XI, (autosomalrecessive mutation), known mainly inAshkenazi Jew.

Usually men suffer from the disease, while women act as carriers of hemophilia, who do not suffer from it themselves, but can give birth to sick sons or daughters who are carriers. The most famous carrier of hemophilia in history was the queenVictoria; apparently, this mutation occurred in her genotype*again*, since hemophiliacs are not registered in her parents' families. One of Victoria's sons (Leopold, Duke of Albany) suffered from hemophilia, as did a number of her daughters' grandchildren and great-grandchildren.

Although the disease is currently incurable, its course is controlled with the help of injections of the missing blood coagulation factor, most often isolated from donor blood. Some hemophiliacs produceantibodiesagainst this protein, leading to an increase in the required dose of the factor or the use of substitutes such as porcine factor VIII. In general, modern hemophiliacs with proper treatment live as long as healthy people.

1. **Willebrand's disease**— autosomal dominant hereditary hemorrhagic diathesis from the group of coagulopathies. The frequency of Willebrand's disease is about 2:100,000 of the population. It is the second most common after hemophilia. Women get sick somewhat more often.

At the heart of Willebrand's disease is a violation of the synthesis of the main factor VIII cofactor, which is called Willebrand's factor, or ristocetin cofactor.

Factor VIII circulates in the blood as a protein complex consisting of subunits of the same type. Each of the subunits has parts with coagulant activity (VIIIk), Willebrand factor activity (VIII.ФВ), the main antigen of the complex (VI11.АГ), the antigen of the coagulant part of the complex (VIII.АГ), carbohydrate and protein parts. Willebrand factor regulates the synthesis of the coagulant part of factor VIII, and also controls the adhesive function of platelets. Willebrand factor is contained not only in the composition of factor VIII, but also in platelet granules and in the endothelium of vessels, where it is synthesized. When the content of the Willebrand factor decreases, the coagulant activity of factor VIII decreases, which is the cause of blood coagulation disorders, the adhesiveness of platelets decreases, as well as

ristocetin-aggregation of platelets with normal aggregation to thrombin, ADP and other aggregating agents.

Thus, bleeding in Willebrand's disease is caused by disturbances in the coagulation and platelet-vascular phase of hemostasis.

Willebrand's disease can be considered acquired if its onset occurs at an older age and there is no anamnestic data about a family-hereditary nature. In this case, the pathogenesis of the disease is associated with autoimmune disorders, mainly with the synthesis of antibodies to the Willebrand factor or the appearance of a circulating inhibitor of factor VIII, which neutralizes the activity of the Willebrand factor. Acquired Willebrand disease syndrome is described in systemic lupus erythematosus, hypernephroma, and lymphoproliferative diseases.

Clinical manifestations of hemorrhagic diatheses are determined by hemorrhages (spot or in the form of hematomas) and bleeding, which leads to impaired organ functions, anemia; especially with blood changes in the central nervous system or with compression of peripheral nerves by large hematomas.

Equipment:study room, multimedia presentation on the topic of classes, laptop, multimedia projector.

Plan:

3. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge (checking of workbooks, communication with a leukemia patient in order to collect complaints and history, physical examination of the patient; evaluation of clinical examination data and laboratory and instrumental data*),*conducting a test control, solving a clinical problem, written solution of problems of the Step-2 type (10 problems), frontal survey, discussion, role-playing on the subject of the lesson.

2.1. Requirements for the theoretical readiness of applicants to perform practical classes: the applicant must know the modern definition, etiology, pathogenesis, classifications of anemias, leukemias, hemorrhagic diatheses, subjective and objective data in these diseases, know laboratory and instrumental data in this pathology.

List of didactic units:

1. the applicant must know the clinical picture of Werlhof's disease (II level).

2. the applicant must know the methodology of examination of patients with leukemia and hemorrhagic diatheses (II level).
3. the acquirer must know the types of bleeding (II level).
4. To provide an opportunity for applicants to master the skills of examination of patients with leukemia and hemorrhagic diatheses (III level).
5. To provide an opportunity for applicants to master the skills and abilities of evaluating clinical changes and changes in peripheral blood and bone marrow punctate in leukemias (III level).
6. To provide an opportunity for students to assess the state of blood clotting (III level).
7. To give applicants the opportunity to theoretically explore the possibilities of optimizing the diagnostic search for hemorrhagic diatheses of various etiologies
2.2. Questions to check basic knowledge on the topic of the lesson:

1. Explain the term "conductor of hemophilia", differences in the inheritance of hemophilia A, B, C, Willebrand's disease.
2. Describe the types of bleeding in coagulopathy.
3. Name dangerous (unfavorable for the prognosis) localization of hematomas.
4. To describe the changes in general blood analysis and coagulogram indicators in various hemophilias and Willebrand's disease.
5. Explain the concept of "hemostatic minimum", why is it different for different coagulopathies?
6. Describe the clinical picture of hemophilia A, B, C, Willebrand's disease. What is the difference between them?
7. Formulate the criteria for the diagnosis of hemophilia A, B, C, Willebrand's disease.

3. Formation of professional skills and abilities:

mastering communication skills (collecting complaints, detailing complaints, collecting anamnesis, evaluating the results of the interview)

formation of the ability to perform a clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to perform a physical examination of the patient),

formation of the ability to evaluate the data obtained during the clinical examination of a patient with anemia, leukemia, hemorrhagic diathesis;
carry out a clinical interpretation of the main symptoms and syndromes in these diseases

formation of the ability to conduct a modern laboratory-instrumental examination of a patient with anemia, leukemia, hemorrhagic diathesis (the applicant must be able to prescribe a plan of laboratory-instrumental examination, give an assessment of the examination results)

3.1. Control materials for the final stage of the lesson:
2. The patient developed hemorrhagic syndrome of the microcirculatory type.
5) Describe the clinical manifestations of hemorrhagic syndrome in a patient.
6) Name the questions that should be asked to the patient when taking an anamnesis to find out the cause of bleeding.
7) Assign an examination plan to establish a diagnosis.
8) Describe characteristic changes in the patient's hemostasiological indicators.
List the measures aimed at stopping bleeding after tooth extraction in this patient.

"STEP" tasks.

1. A 37-year-old patient has had frequent nosebleeds, pronounced metrorrhagia, and periodic formation of bruises on the skin for the past 6 years. 10 days ago, after a significant nosebleed, weakness increased, dizziness and palpitations appeared. Objectively: the skin is pale, there are widespread petechial hemorrhages and single ecchymoses on the front surface of the trunk, legs, and arms. In the blood: Hb - 80 g/l, er. – 4.01012/l, CP – 0.7; leyk – 5.3109/l; p. - 2%, p. - 65%, e. - 2%, l. - 24%, m. - 5%, thrombus. – 10109/l, ESR – 15 mm/h. What is the most likely diagnosis?
+A. Werlhof's disease.
D. Iron deficiency anemia.
B. Hemophilia.
E. Aplastic anemia.
C. Hemorrhagic vasculitis

2The 16-year-old patient has been sick since the age of 5, when massive and prolonged bleeding from the postoperative wound was observed for the first time after appendectomy. Later, bleeding after minor injuries was noted. 4 years ago - hemarthrosis of the knee joint. 3 years ago, he was treated for an extra-abdominal hematoma. Deficiency of blood coagulation factor III was detected. The most reliable diagnosis?
+A hemophilia A
In hemophilia B
With thrombocytopenic purpura
D hemorrhagic vasculitis
E congenital thrombocytopenia

3. A 32-year-old woman complains of unexplained bruising, weakness, bleeding gums, and menorrhagia. Objectively: mucous membranes and skin are pale with hemorrhages of various ages. Lymph nodes are not enlarged. Pulse-100 beats. in one minute; BP – 110/70 mm. mercury Art. There are no changes from the internal organs. Blood analysis: er. - 3.0 t/l; HB - 92 g/l; KP- 0.9; anisocytosis, poikilocytosis; leuk. - 10 g/l; e.-2%; p. - 12%; p. - 68%; l.-10%; m.-7%; ESR - 12 mm/hour.
Additional determination of which indicator is appropriate for establishing a diagnosis?

And the blood clotting time
In fibrinogen
From reticulocytes
D osmotic resistance of erythrocytes
+E platelets

4 The 18-year-old patient has been ill since early childhood. In the blood: Hb - 110 g/l, er. – 3.91012/l, CP – 0.8, leuk. – 6.0109/l; ESR - 30 mm/h. Coagulogram: prothrombin index 95%, blood clot retraction 50%, blood clotting time - after 40 minutes it did not occur, bleeding duration - 3 minutes. What are the mechanisms underlying the pathogenesis of this disease?

+A. Deficiency of antihemophilic globulin A in the blood.

B. Vitamin C deficiency.

C. The presence of specific antibodies to the endothelial walls of blood vessels.

D. Immune suppression of the bone marrow.

E. Exogenous iron deficiency

PRACTICAL TRAINING

Practical lesson No. 20

Subject: Secondary immunodeficiencies. Dental aspects of diseases of the immune system.

Goal: Acquiring knowledge and mastering professional competences during the examination of a patient with secondary immunodeficiency - questioning, physical examination, laboratory-instrumental studies.

Basic concepts: Secondary immunodeficiency — a clinical-immunological syndrome that develops against the background of a previously normally functioning immune system, characterized by a sustained pronounced decrease in the quantitative and functional indicators of specific and/or non-specific factors of immunoresistance, which is a risk factor for the development of chronic infectious diseases, autoimmune pathology and tumors.

This definition of secondary immunodeficiency highlights the peculiarities of its etiology and pathogenesis. First, immune disorders appear in a person who was previously healthy both clinically and had normal immunological indicators. Secondly, a patient who already has clinical manifestations of secondary immunodeficiency in the oral cavity comes to the dentist more often, for example chronic infectious inflammatory diseases resistant to traditional therapy. But it is important to draw attention to the fact that laboratory signs of secondary immunodeficiency with minimal clinical manifestations can be detected in practically healthy people. In this case, it is necessary to remember that such a patient has a significant**the risk of disease development**, combined with immunodeficiency —**infectious, autoimmune or oncological**.

Chronic fatigue syndrome (CFS) characterized by chronic fatigue experienced by patients, which does not disappear after rest and leads over time to a significant decrease in work capacity - both mental and physical. SCV is registered mainly in ecologically unfavorable regions with a high level of environmental pollution with chemically harmful substances or with an increased level of radiation. It is most often observed at the age of 20-40 and somewhat more often among women. Violation of the interaction between the nervous, immune and endocrine systems plays an important role in the development and progression of CFS. Immunological changes: decrease in the level of T-cells, imbalance of the main subpopulations of T-lymphocytes (T-helpers and T-suppressors), decrease in the proliferative activity of T-lymphocytes, decrease in the function of natural killers, dysimmunoglobulinemia. The treatment of CFS includes drugs of immunocorrective action and adaptogens of plant origin.

HIV infection is a condition when a person is infected with the human immunodeficiency virus (HIV). AIDS is a disease, the final stage of HIV infection. As a result of damage to the immune system by this virus, the body becomes susceptible to opportunistic infection, which eventually leads to the death of the patient. Ways of transmission: sexual, parenteral, transplantation. The causative agent infects immune cells that have external CD4 receptors that are related to the glycoproteins of the virus (T-helpers, macrophages, monocytes, astrocytes, glial cells of the CNS, vascular epithelium, etc.). A state of immunodeficiency develops, which can last for 10 or more years. A decrease in T-lymphocytes leads to activation of the humoral link of immunity, hyperproduction of immunoglobulins, circulation of immune complexes. As a result of these changes, endogenous microflora is activated: herpes virus, yeast fungi, mycobacteria, aspergillus, cryptococci, cytomegaloviruses, pneumocysts, toxoplasma, which causes the corresponding clinical manifestations of the disease. In addition, HIV has oncogenic activity (Kaposi's sarcoma, lymphomas).

Stages:

1. Stage of an acute disease;
2. Stage of asymptomatic carriage;
3. Stage of persistent generalized lymphadenopathy;
4. AIDS-associated complex;
5. AIDS (cerebral, pulmonary, intestinal, disseminated, neoplastic clinical form).

Diagnostics:

- epidemiological history;
- clinical picture;
- laboratory confirmation by two methods: 1 – isolation and identification of the virus; 2 - determination of HIV antibodies (ELISA method, immunoblotting method, radioimmunoprecipitation method).

Treatment:

1. nucleoside reverse transcriptase inhibitors (zidovudine, didanosine, zalcitabine, stavudine, lamivudine);
2. non-nucleoside reverse transcriptase inhibitors (nevirapine, delaverdine);
3. protease inhibitors (indinavir, ritonavir, saquinavir, nelfinavir).

Secondary immunodeficiencies can be caused by the following reasons:

1. Diseases of the immune system.

A. Defect in B links of the immune system: plasmacytoma and Waldenström disease, chronicchronic lymphocytic leukemia, non-Hodgkin's lymphomas.

B. Defect of the T link of the immune system: sarcoidosis, lymphogranulomatosis.

2. Generalized bone marrow disorders: myelosis, myelofibrosis.

3. Infectious diseases.

A. Acute infections: measles, flu, herpes, etc.

B. Chronic infections: leprosy, candidiasis, tuberculosis.

B. Acquired immunodeficiency syndrome.

4. Metabolic disorders and intoxication: antibody deficiency syndrome due to protein loss, exhaustion, nutritional disorders, burns, uremia, etc.

5. Exogenous influences:

A. Physical: radioactive, ultraviolet, magnetic and microwave radiation.

B. Chemical: immunosuppressive drugs, chemotherapy drugs, corticosteroids, pesticides, herbicides, drugs, some antibiotics, etc.

B. Biological: administration of antilymphocyte/antithymocyte globulin, etc.

6. "Natural" immunodeficiencies: early childhood, gerontological age, pregnancy.

Signs that make it possible to suspect the presence of secondary immunodeficiency: 1. Recurring bacterial and viral infections, which are characterized by:

a) chronic course;

b) incomplete recovery;

c) refractoriness to traditional treatment;

d) unstable remissions;

e) unusual pathogens (conditionally pathogenic flora, opportunistic infection, known reduced virulence, with multiple resistance to antibiotics).

2. Sex, age, presence of blood relatives with immunodeficiencies.

3. Unusual reactions to live, weakened vaccines.

4. Physical examination data:

a) deficiency or developmental delay;

b) decrease in body weight;

c) chronic diarrhea;

d) low fever;

e) organomegaly;

f) increase, underdevelopment or absence of lymph nodes, tonsils, thymus; g) dermatitis, skin abscesses;

h) candidiasis of the mucous membrane of the oral cavity;

i) violation of the development of the facial part of the skull;

k) congenital heart defects;

l) short stature;

m) ataxia, telangiectasia;

n) increased fatigue;
o) thickening of the terminal phalanges of the fingers.
5. Iatrogenic effects:
a) chemotherapy;
b) splenectomy;
c) irradiation.
6. Prolonged physical and/or psychoemotional stress.
7. Allergy.
8. Autoimmune diseases.
9. Tumors.

To formulate the final**diagnosis**secondary immunodeficiency requires an anamnesis analysis and clinical examination.

Anamnesis analysis.

It is necessary to find out the hereditary predisposition to immunopathology, the presence of chronic, generalized infections in relatives, increased frequency of malignant neoplasms, somatic malformations.

Valuable information is provided by information about past infections, purulent-inflammatory processes, and their frequency. Determination of unfavorable factors of the external environment, work and living (contact with chemical compounds, drugs, biological preparations, exposure to ionizing radiation, magnetic fields, extreme temperatures, constant stress) can contribute to the establishment of the etiology of secondary immunodeficiency, as well as past intoxications, surgical interventions, chemotherapy, injuries , eating disorder.

The chronicity of a somatic disease, fever of unknown etiology, inexplicable loss of body weight and prolonged diarrhea should alert the doctor in terms of the development of immunodeficiency. A relevant issue is whether the patient belongs to risk groups (drug addiction, smoking, alcoholism). Episodes of allergic reactions, reactions to hemotransfusion, and pregnancy pathology can also indicate damage to certain parts of the immune system.

At**clinical examination**pay attention to the physical examination of the organs of the immune system. Determine the state of lymph nodes, spleen, tonsils (lymphoadenopathy, splenomegaly, thymomegaly, local or generalized hyper or aplasia of lymph nodes, tonsils).

Valuable diagnostic information is provided by examination of the condition of the skin (turgor, pustular rashes, dematitis, neoplasms, hemorrhages, petechiae).

Permanent signs of secondary immunodeficiency are impressions of the mucous membrane of the oral cavity (candidiasis, ulcerative and erosive defects,
have, gingivitis. cyanotic macules or papules, xerostomia).

Often, immunodeficiencies are found in persons with anomalies and malformations of the dental and jaw apparatus, bite disorders. Long-term, recurrent sinusitis is characteristic. On the part of the bronchopulmonary system, the presence of inflammatory, obstructive processes, bronchiectasis, fibrosis is possible. Disorders of the digestive and excretion systems can be manifested by inflammatory processes, dyskinesias, hepatomegaly, biliary and genitourinary tract pathology.

Inflammatory processes of the central and peripheral nervous system, endocrinopathy, malformations, damage to bones and joints, bleeding, thrombosis and malignant tumors add variety to the manifestations of secondary immunodeficiencies.

If the patient has clinical manifestations of secondary immunodeficiency, it is necessary to conduct an examination of the state of the immune system.

Examination of patients with suspected secondary immunodeficiency:

1. Mandatory laboratory examination:
   - according to the standards of the main disease;
   - study of immune status (determination of the total number of leukocytes, lymphocytes, subpopulations of T lymphocytes (CD2, CD3, CD4, CD8, CD4/CD8 ratio), B lymphocytes (CD19, CD20, CD23), level of immunoglobulins A, M, G, system evaluation complement, phagocytosis);
   - control of the found violations after the course of therapy.
2. Additional research methods:
   - are determined by the main disease and concomitant;
   - special immunological studies are performed depending on the clinical manifestations and defects found during the initial assessment of the immune status using basic methods (number and functions of EC cells, HLA phenotype, production of pro-inflammatory cytokines (interleukin 2, 8, 12, gamma interferon, tumor necrosis factor alpha), anti-inflammatory cytokines (interleukin 4, 5, 10, 13), presence of specific autoantibodies, presence of specific cellular sensitization).
3. Instrumental diagnostics in accordance with the main disease and accompanying pathology.
4. Consultations of specialists in related specialties.

According to the determination of defects in the immune status by laboratory methods, patients can be divided into:

1) with clinical signs of impaired immunity in combination with detected changes in immune status parameters;
2) only with clinical signs of immunodeficiency without specifically defined changes in immune status parameters;
3) only with specific changes in immune status parameters without clinical signs of immunodeficiency. Examining the patient by all available methods allows to attribute the found immunodeficiency to one or another group.

Immunodeficiencies are classified as:

1. According to the level of damage:
   - violation of cellular (T link) immunity;
   - violation of humoral (B link) immunity;
   - violation of the phagocyte system;
   - violation of the complement system;
   - combined defects.
2. By degree of difficulty:
   - easy;
   - medium difficulty;

• difficult.

3. For a specified reason:

• induced (caused by a specific cause, as well as a violation of immunity that developed secondary to the main disease);

• spontaneous (cryptogenic) (absence of an obvious reason that determines the violation of immune reactivity).

4. According to the pace of development:

• acute immunodeficiency (caused by an acute infectious disease, trauma, intoxication, etc.);

• chronic immunodeficiency (which develops against the background of chronic purulent-septic diseases, autoimmune disorders, tumors, persistent viral infection, etc.).

MAIN APPROACHES TO THE TREATMENT OF SECONDARY IMMUNODEFICIENCY

The choice of immunomodulatory therapy and control of the use of immunomodulatory drugs should be determined by the doctor depending on the degree of severity of the main disease, concomitant pathology, type of immunological defect.

Below are the basic principles of such treatment.

1. When cells of the monocyte-macrophage system are damaged:

• polyoxidonium in doses from 6 to 12 mg;

• in the most severe forms, colony-stimulating factor drugs are used: leukomax in doses of 150, 300, and 400 μg; neupogen in doses of 300 and 480 μg, leukomas are used for replacement therapy.

2. For defects of the cellular link of immunity, use:

• Tactivin 0.01% solution in a dose of 1 ml subcutaneously;

• polyoxidonium in doses from 6 to 12 mg;

• thymogen 0.01% solution in a dose of 1 ml intramuscularly.

3. In case of violation of antibody synthesis:

• polyoxidonium in doses from 6 to 12 mg;

• in case of hypogammaglobulinemia, replacement therapy with immunoglobulin preparations is carried out:

a) IgG containing: sandoglobulin in doses of 1, 3, 6 and 12 g in a bottle; octagam in doses of 50, 100 and 200 ml in a bottle; intraglobin in doses of 2, 5 and 5 g; normal human immunoglobulin for intravenous administration in a dose of 25 ml.

b) IgM-containing: pentaglobin 5% solution in doses of 10, 20 and 50 ml.

Replacement therapy is carried out in saturation mode (IgG level of at least 400 μg/ml), supportive therapy is under the supervision of an immunologist.

4. Additional therapy:

• interferon therapy (Laferon, Viferon, etc.);

• extracorporeal methods of immunocorrection: extracorporeal immunopharmacotherapy, plasmapheresis, immunosorption.

Separately, you should dwell on the means**immunotherapy of manifestations of secondary immuno-**
deficiencies in the oral cavity.

One of the modern drugs, which is successfully used in the treatment of stomatitis, periodontitis, to prevent complications during surgical interventions, is a composition of microbial components - imudon. The drug is used in the form of pills for absorption.
The main requirements for treatment results are the elimination of clinical manifestations of immune deficiency, a reduction in the frequency of disease recurrences and
normalization or tendency to normalization of changed immunity indicators.

Equipment:study room, multimedia presentation on the topic of classes, laptop, multimedia projector.

Plan:
4. Organizational activities (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge (checking of workbooks, communication with a leukemia patient in order to collect complaints and history, physical examination of the patient; evaluation of clinical examination data and laboratory and instrumental data*),*conducting a test control, solving a clinical problem, written solution of problems of the Step-2 type (10 problems), frontal survey, discussion, role-playing on the subject of the lesson.
2.1. Requirements for the theoretical readiness of applicants to perform practical classes:
the applicant must know the modern definition, etiology, pathogenesis, classifications of anemias, leukemias, hemorrhagic diatheses, subjective and objective data in these diseases, know laboratory and instrumental data in this pathology.

List of didactic units:
the applicant must know the etiology, pathogenesis and classification of secondary immunodeficiencies (level I-II).
the applicant must know the main symptoms and syndromes of secondary immunodeficiencies (III level)
the applicant must know the principles of treatment of secondary immunodeficiencies (level III-IV).
the applicant must know the role of the dentist in the diagnosis and treatment of patients with secondary immunodeficiencies.

2.2. Questions to check basic knowledge on the topic of the lesson:

1. Definition and classification of secondary immunodeficiencies;
2. Mechanisms of development of acquired immunodeficiency diseases;
3. Clinical and laboratory manifestations of immunodeficiency states, methods of their detection;
4. The most common forms of secondary immunodeficiency: clinic, diagnosis;

5. Causes of the development of secondary immunodeficiencies, possibilities of their correction and prevention, in particular in therapeutic, surgical and obstetric practice;
6. Principles of treatment of acquired immunodeficiencies;
7. Etiopathogenesis, diagnosis, immunotherapy of AIDS, immunoprophylaxis of HIV infection.

3. Formation of professional skills and abilities:

mastering communication skills (collecting complaints, detailing complaints, collecting anamnesis, evaluating the results of the interview)

formation of the ability to perform a clinical examination of a patient for secondary immunodeficiency (the applicant must be able to perform a physical examination of the patient),

formation of the ability to give an assessment obtained during the clinical examination of a patient with secondary immunodeficiencies;
carry out a clinical interpretation of the main symptoms and syndromes in secondary immunodeficiencies

formation of the ability to conduct a modern laboratory-instrumental examination of a patient with secondary immunodeficiencies (the applicant must be able to prescribe a plan for a laboratory-instrumental examination, give an assessment of the examination results)

3.1. Control materials for the final stage of the lesson:
TASK 1.
A 21-year-old patient has manifestations of ulcerative-necrotic stomatitis. For 3 months, he noted weakness, temperature rise to 37^0 C, sharp weight loss. During the examination: the face is pale, the lymph nodes are enlarged, painless. What is the most likely diagnosis?

A. +AIDS
B. Acute leukemia
C. Vincent's stomatitis
D. Hypovitaminosis C
E. Agranulocytosis