

**MINISTRY OF HEALTH PROTECTION OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY**

**International faculty
Department of Internal Medicine 1**



APPROVED
Acting vice-rector for research and educational work
Eduard Buryachkivskiy
_____ 2023

**Methodical recommendations for the independent work of higher
education applicants in the academic discipline**

for 6th year students, international faculty
Academic discipline: "Internal Medicine"

The program was discussed and approved at the meeting of the Department of Internal Medicine
No. 1, 05.09.2023. Protocol No. 1.

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Topic 1. Management of a patient with arterial hypertension

The main goals: to acquire communication skills and skills of clinical examination and treatment of a patient with arterial hypertension

Key words: determination of arterial hypertension; modern classification of hypertension by degree, stage, risk according to the SCORE scale; method of measuring blood pressure; evaluation of the results of the following research methods: DMAT, ECG, Holter monitoring, Echo-CS, ultrasound of brachiocephalic arteries, Ankle-brachial Index, lipidograms; mechanisms of action of the main five groups of drugs; main contraindications and side effects of hypotensive drugs; tactics of hypotensive therapy in a patient with concomitant pathology.

Plan

1. Theoretical questions:

1. State the main causes of symptomatic arterial hypertension.
2. What laboratory tests help diagnose arterial hypertension of endocrine and renal genesis?
3. What objective signs of organic damage to the target organs are taken into account when establishing the II stage of arterial hypertension?
4. What objective signs of organic damage to the target organs with their symptoms and dysfunction are taken into account when establishing the III stage of arterial hypertension?
5. List the main risk factors used to estimate the cumulative risk of complications of arterial hypertension.
6. List the target organ damage used to estimate the cumulative risk of complications of arterial hypertension.
7. Name the comorbidities that are taken into account to estimate the total risk of complications of arterial hypertension.
8. What laboratory-instrumental examinations must be prescribed for all patients with increased blood pressure?
9. What is the diagnostic significance of the results of ambulatory blood pressure monitoring?
10. Give the main principles of treatment of arterial hypertension.
11. Describe the features of non-drug therapy of hypertension, the DASH diet.
12. List the groups of drugs of the first and second line of treatment, name 3-4 drugs from each group.
13. Indicate which groups of antihypertensive drugs have advantages in special clinical situations:
 - a. GLSH
 - b. Asymptomatic atherosclerosis
 - c. Microalbuminuria, renal dysfunction
 - d. History of stroke
 - e. History of heart attack
 - f. Angina
 - g. SN
 - h. AF is paroxysmal
 - i. FP is permanent
 - j. Pathology of peripheral arteries
 - k. Isolated SAG
 - l. Metabolic syndrome
 - m. diabetes
 - n. Pregnancy
14. Name the indications and rules for prescribing combined antihypertensive therapy. Desirable and undesirable combinations.
15. Specify the side effects of the main groups of drugs of the 1st and 2nd lines of treatment.
16. Give the criteria of a hypertensive crisis, the classification of hypertensive crises.
17. Name the rules of differentiated therapy of hypertensive crises depending on the type of crisis and clinical manifestations.

18. Name the rules of primary and secondary prevention of arterial hypertension.
19. State the basic principles of determining the prognosis and working capacity for a patient with hypertension.

2. Practical tasks:

1. Name 10 the most frequent complications of arterial hypertension:

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

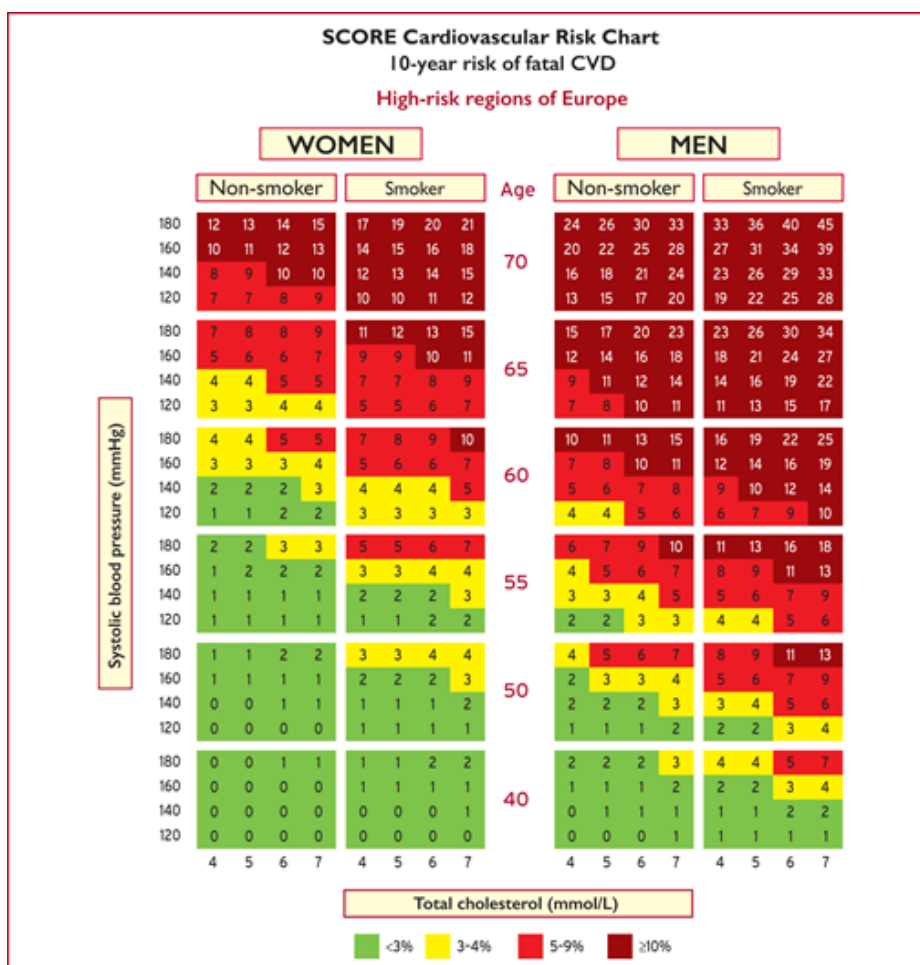
2. What is the expected risk to die of cardiovascular disease according to the SCORE scale:

1) for the smoking man of 65 years with an average systolic BP of 180 mm. Hg. and with total cholesterol 8 mmol/l in the nearest 10 years? _____%

2) for the non-smoking woman of 47 years with an average systolic BP of 160 mm. Hg. and with total cholesterol 6.5 mmol/l in the nearest 10 years? _____%

3) for the non-smoking man of 45-th years with an average systolic BP of 140 mm. Hg. and with total cholesterol 6.0 mmol/l in the nearest 10 years? _____%

4) for the smoking woman of 55-th years with an average systolic BP of 160 mm. Hg. and with total cholesterol 8 mmol/l in the nearest 10 years? _____%



3. Name the ECG signs which can specify in the presence of arterial hypertension.

3. *Clinical task.*

Patient M., 53-th years, protractedly suffering from AH, appealed to his general practitioner with complaints of headache in a cervical area, dizziness, periodic sense of nausea, decline of sight. During the last 5 years he suffers from diabetes mellitus of type 2. He does not smoke, drinks little alcohol, and has a sedentary lifestyle.

On examination: obese. Skin is pale, moist. Cyanosys of lips. Respiratory system: normal findings. Pulse 78 in a minute, rhythmic, satisfactory filling. BP 170/90 mm. Hg. Heart borders: right - on the right edge of the breastbone, left - 1 cm left from a left midclavicular line. Heart tones are muffled, noises are absent. A stomach is soft, painless. A liver and spleen not palpable.

À) Specify key symptoms and objective signs of arterial hypertension:

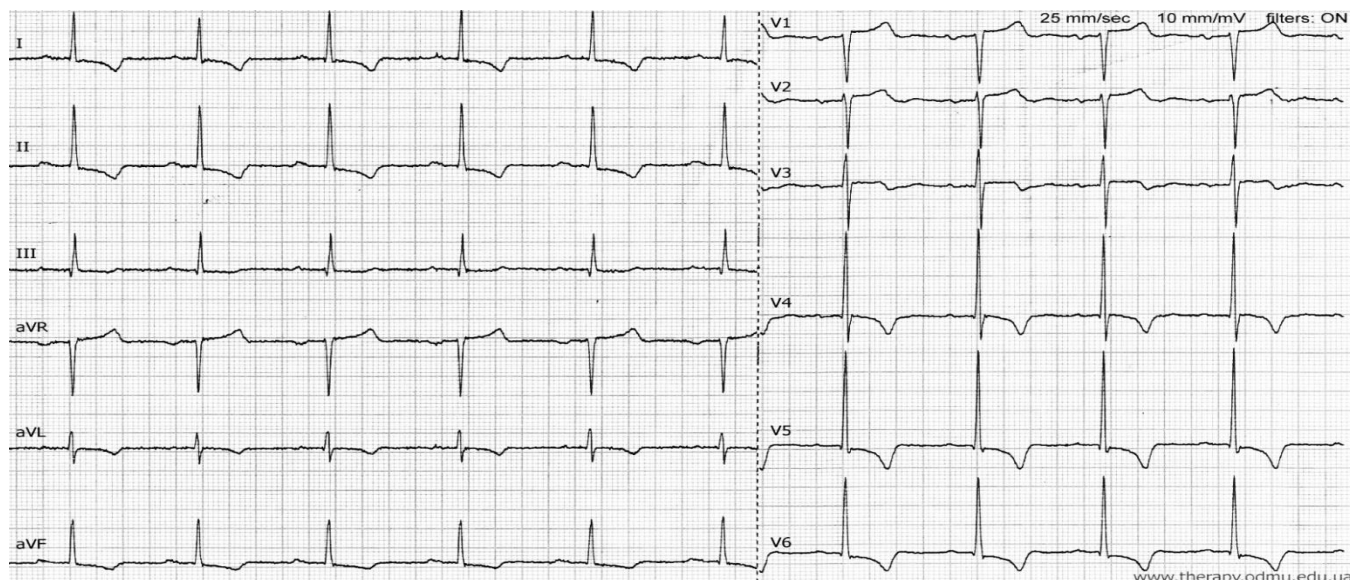
B) Specify a preliminary clinical diagnosis:

C. What instrumental and laboratory investigations will you appoint and for what purpose?

Instrumental:

Laboratory:

D. Describe the presented cardiogram of patient I.:



E. Blood analysis of patient I.:

Index	Result	Norm
Glucose	8.0 mmol/l	3.3-6.1 mmol/l
Creatinine	0.100 mmol/l	0.044-0.104mmol/l
General bilirubin	18 mmol/l	1.7-25.5 mmol/l
Triglycerides	3.2 mmol/l	0.14-1.77 mmol/l

Index	Result	Norm
HDLC	0.5 mmol/l	> 1 mmol/l
LDLC	5.0 mmol/l	< 3 mmol/l
VLDLC	1.3 mmol/l	0.26 - 1.05 mmol/l
Total cholesterol	6.1 mmol/l	3.1-5.2 mmol/l

Describe a blood test of patient I.:

F. Write the treatment plan of patient I.:

Non-medical:

Medicinal:

Drug therapy:

A 36-year-old woman complains of headache, paresthesias, muscle weakness, cramps, increased thirst and nocturia. On examination: temperature - 36.6 C°, RR - 18 in mins, pulse - 92 in a minute , BP 180/110 mm Hg. Obese. On ECG - STsegment depression in lateral leads.

A. Describe results of analysis of patient:

Index	Result	Norm
Potassium	2.1	3.5-5.0 mmol/l
Sodium	181	135-145 mmol/l
Renin	1.8	4.4 - 46.1 mME/ml
Aldosterone	35	2-16 ng/100 ml

B. What does a positive spironolactone test mean for this patient?

C. Specify a preliminary clinical diagnosis:

D. What instrumental investigations will you appoint to this patient and for what purpose?

E. Describe urinalysis by Zimnicki of this patient:

Daily diuresis			Night diuresis		
Time of urine sample, h.	Volume, ml.	Relative density of urine	Time of urine sample, h.	Volume, ml.	Relative density of urine
9	200	1011	21	100	1009
12	200	1010	24	180	1008
15	250	1008	3	-	-
18	250	1010	6	100	1011

F. Write a treatment plan:

List basic hypotensive preparations and contraindications to their admission:

	Medications:	Contra-indications to their use:
ACE inhibitors		
β -blockers		
Calcium channel blockers		
Diuretics		

4. List of recommended literature :

Basic literature:

- Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition - (August 13, 2021). - 736 pages
- Pocket Medicine: The Massachusetts General Hospital Handbook of Internal Medicine / 007 edition (12 Sept. 2019). - 272 pages
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Topic 2. Management of a patient with heart rhythm disorders

The main goals: to acquire communication skills and skills of clinical examination of a patient with arrhythmia, to be able to diagnose emergency conditions in patients with heart rhythm disorders, to master the tactics of providing emergency medical care to patients with heart rhythm disorders; to be able to perform therapeutic manipulations in patients with arrhythmias.

Key words: modern classification of heart rhythm disorders, its main classifications; pathophysiological mechanisms and the most frequent etiological factors of arrhythmias; ECG diagnosis of various variants of arrhythmias; instrumental methods of diagnosing arrhythmias, diagnostic possibilities and indications for carrying out ECG, HM ECG, Echocardiography, electrophysiological research; classification and clinical pharmacology of antiarrhythmic drugs; modern standards of treatment of arrhythmias; methods and indications for electroimpulse therapy; surgical methods of treatment of cardiac arrhythmias, indications for their use; primary and secondary prevention of arrhythmias.

PLAN

1. Theoretical questions:

- conduct an ECG diagnosis of extrasystole; differential diagnosis between various topical variants of extrasystole and between extrasystole and parasystole;
- determine the prognostic value of extrasystole in each specific case;
- draw up a scheme of examination and treatment of a patient with extrasystole and choose an effective antiarrhythmic agent;
- conduct an ECG diagnosis of atrial fibrillation and atrial flutter, sinus node weakness syndrome and WPW syndrome;
- carry out a differential diagnosis between atrial flutter and paroxysmal tachycardia; between different electrophysiological variants of paroxysmal tachycardias in WPW syndrome;
- carry out differential diagnosis in case of bradycardia (various variants of sinus node weakness syndrome, AV-blockade);
- interpret the data of HM ECG, transesophageal ECG and Echocardiogram;
- provide emergency care for paroxysmal and persistent atrial fibrillation / atrial flutter, paroxysmal tachycardias in WPW syndrome, bradycardia and MAS syndrome;
- prescribe examination and treatment for various categories of patients with atrial fibrillation/atrial flutter, SNWS and WPW syndrome;
- determine the indications for surgical treatment for various arrhythmias and SNWS syndrome

2. Practical tasks:

1. Specify the most common types of arrhythmias:

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____

2. What diseases or syndromes predispose to arrhythmias?

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____

3. List the laboratory tests needed to establish the causes of arrhythmias.

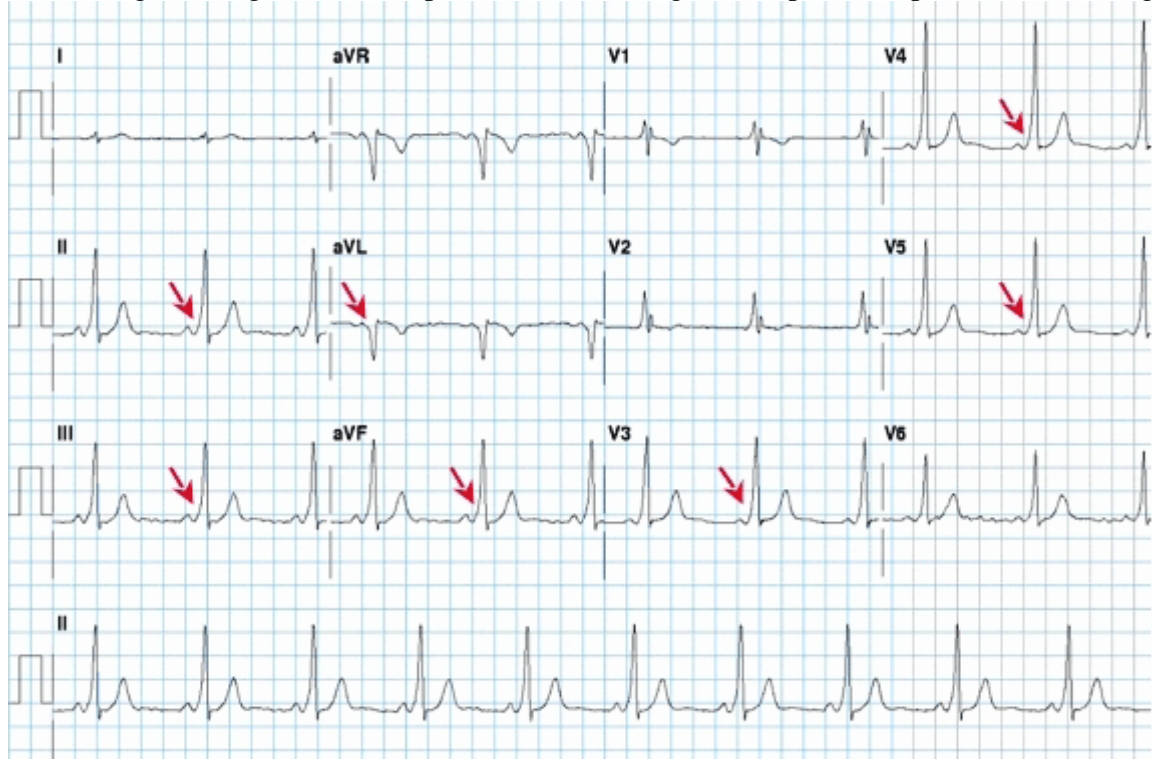
4. Enter the name and the basic mechanisms of action of each class of anti-arrhythmic drugs:

- 1. IA _____
- 2. IB _____
- 3. IC _____
- 4. II _____
- 5. III _____

6. IV

3. Clinical task:

1) Female 20 years old, complains of palpitations attacks, which are accompanied by dizziness, shortness of breath and aching pain in the left chest. Noticed such episodes for the last several years, in the beginning they were observed 1-2 times a month, were short-lived. Recently, attacks have become more frequent. OBJECTIVE: heart sounds sonorous, regular. Heart rate - 60/min., BP - 120/80 mm Hg. Resting ECG of the patient while having no complaints is presented in the figure.



The ECG during the attack: heart rate - 180/min. QRS morphology corresponds to the one from resting ECG. What type of arrhythmia is diagnosed in a patient?

How to conduct prevention and management of paroxysmal tachycardia in these patients?

What are the indications for surgical treatment of such conditions?

Clinical task 2:

The patient, 28 years old, a history of mitral valve prolapse, body mass index 34.5 kg/m². To reduce the weight took a combination of drugs with a diuretic effect for a long time. In the last week there were three episodes of sudden pain behind the sternum, accompanied by palpitations, dizziness, lasted several minutes. The ECG, which at the time of attack has registered the following changes within 75 seconds:



Describe the discovered arrhythmia.

What reasons can provoke this kind of arrhythmia?

Make a plan of examination of patient.

Make a plan of treatment of patient.

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Topic 3. Management of a patient with impaired cardiac conduction.

The main goals: to acquire communication skills and skills of clinical examination of a patient with impaired conduction, to be able to diagnose emergency conditions in patients with impaired conduction, to master the tactics of providing emergency medical assistance to patients with impaired conduction, as well as to be able to perform medical manipulations in this category of patients.

Key words: diseases that can be complicated by conduction disorders; ECG criteria of the following disorders: SA-blockade, AV-blockade of the I, II, III degree, BLNPH, BPNPH and their clinical manifestations; instrumental studies of a patient with a conduction disorder: ECG, Holter monitoring, Echo-CS; the main drugs used to treat conduction disorders; indications for temporary and permanent cardiac stimulation; indications for SVR implantation; prognosis and work capacity in patients with cardiac conduction disorders.

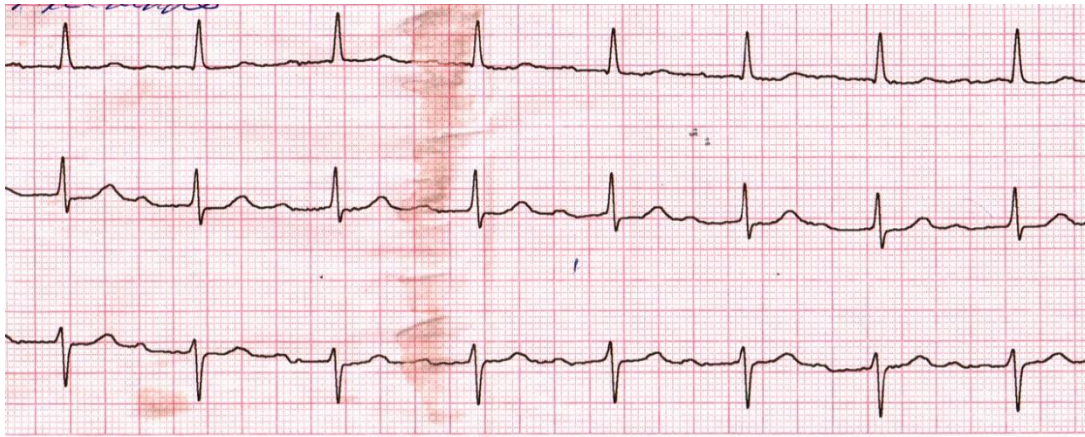
PLAN

Theoretical questions:

1. Name the diseases that can be complicated by rhythm disorders.
2. Name the ECG criteria of the following disorders: SA-blockade, AV-blockade I, II, III degree, BLPNG, BPNPG.
3. Name the differences between BLNPGH and BPNPGH.
4. Name the clinical manifestations of the above rhythm disorders.
5. Perform the following practical skills: collection of complaints and history, palpation and determination of pulse properties, auscultation of the heart.
6. Indicate for what purpose the instrumental studies of a patient with a conduction disorder are prescribed: ECG, Holter monitoring, Echo-CS.
7. Name the main drugs used for the treatment of II and III degree AV block.
8. Name the tactics of AV blockade depending on its degree.
9. Choose the tactics of managing a patient with BNLPH depending on how long ago the changes occurred. Sgarboss and Smith criteria (SRS).
10. List the indications for temporary and permanent cardiac stimulation.
11. Name the indications for SVR implantation.
12. Name the operating modes, single-chamber-two-chamber EKS (SRS)
13. Determine the prognosis and work capacity in patients with the following conduction disorders: SA-blockade, AV-blockade I, II, III degree, BLPNH, BPNPPH.

Practical tasks:

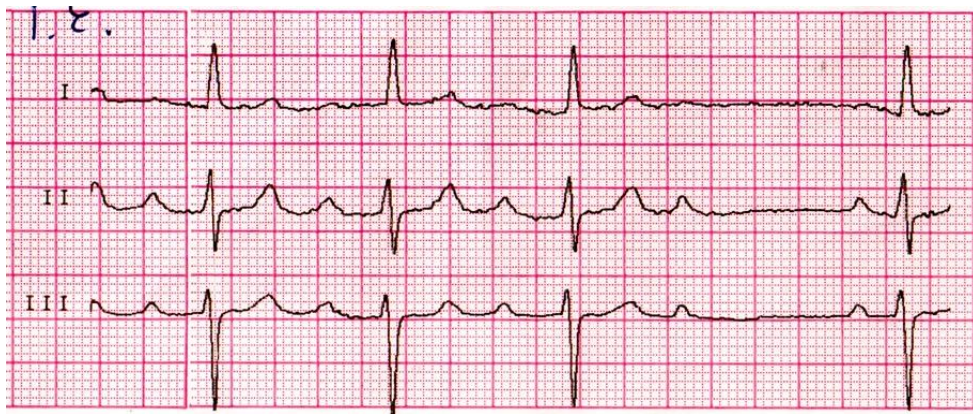
Task №1. A 69-year-old male patient without any specific complaints undergoes a routine checkup.



1.1: What kind of block is found on his ECG? _____

1.2: What recommendations will you give to this patient?

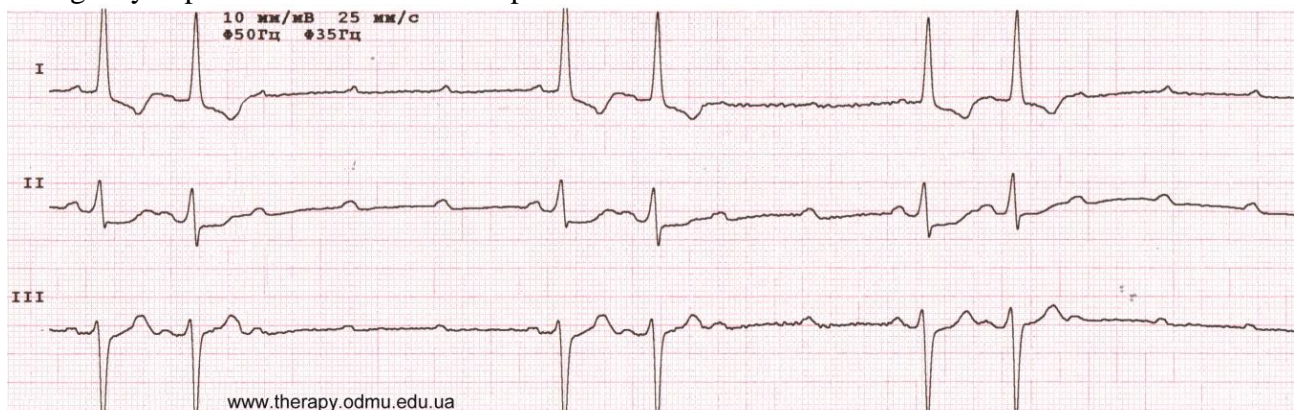
Task №2. A 57-year-old garden worker complains of “irregular heartbeat”, episodes of dizziness. ECG was recorded:



2.1: What kind of block is found on his ECG? _____

2.2: What recommendations will you give to this patient?

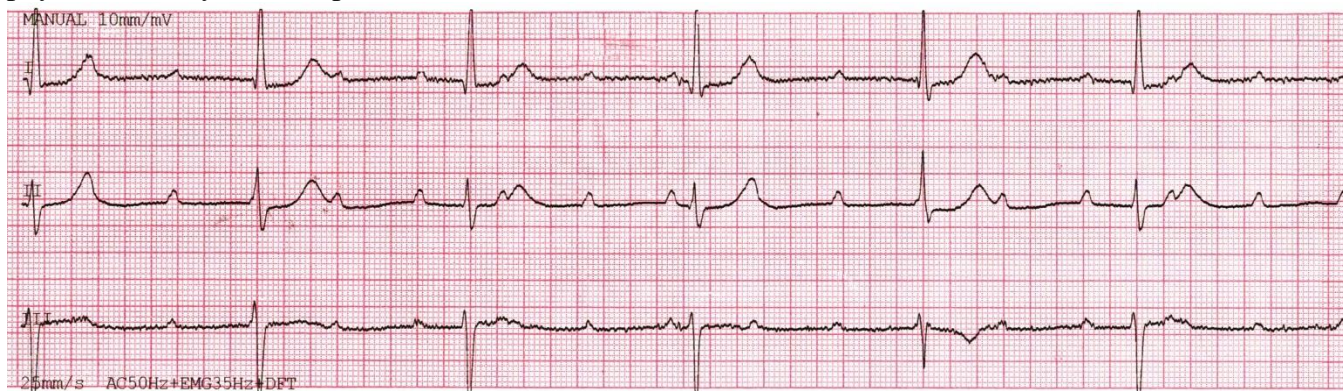
Task №3. A 68-year-old patient with a 30-year history of hypertension was admitted to the emergency department after recurrent episodes of loss of consciousness. His ECG:



3.1: Label all P-waves and all QRS complexes with a pen.

3.2: What kind of block is it?

Task №4: A 55-year-old female, working as a middle school teacher, turned to her family doctor due to recurrent episodes of lightheadedness, weakness, loss of coordination during mild intensity physical activity. ECG is presented below:

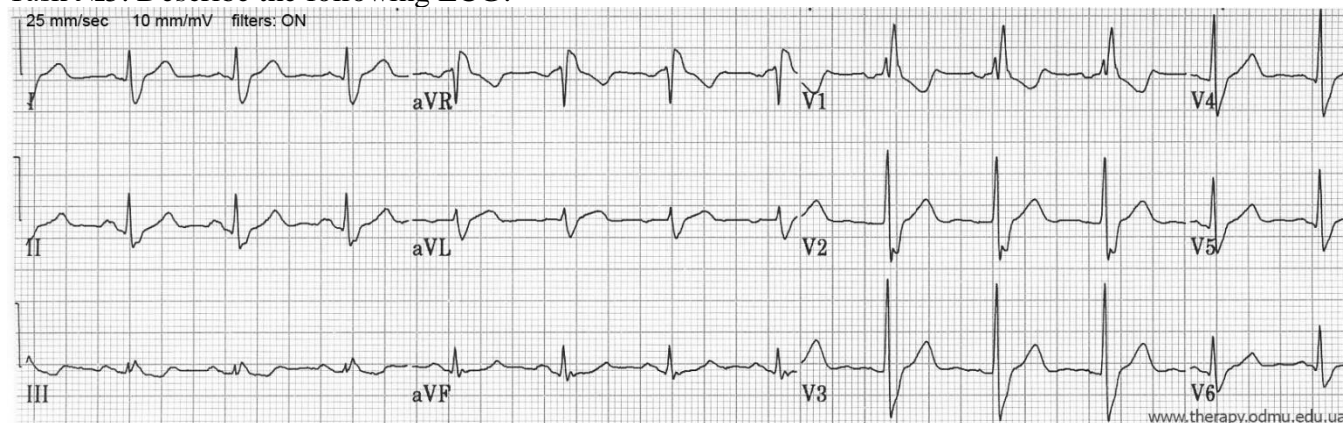


4.1: Label all P-waves and all QRS complexes with a pen.

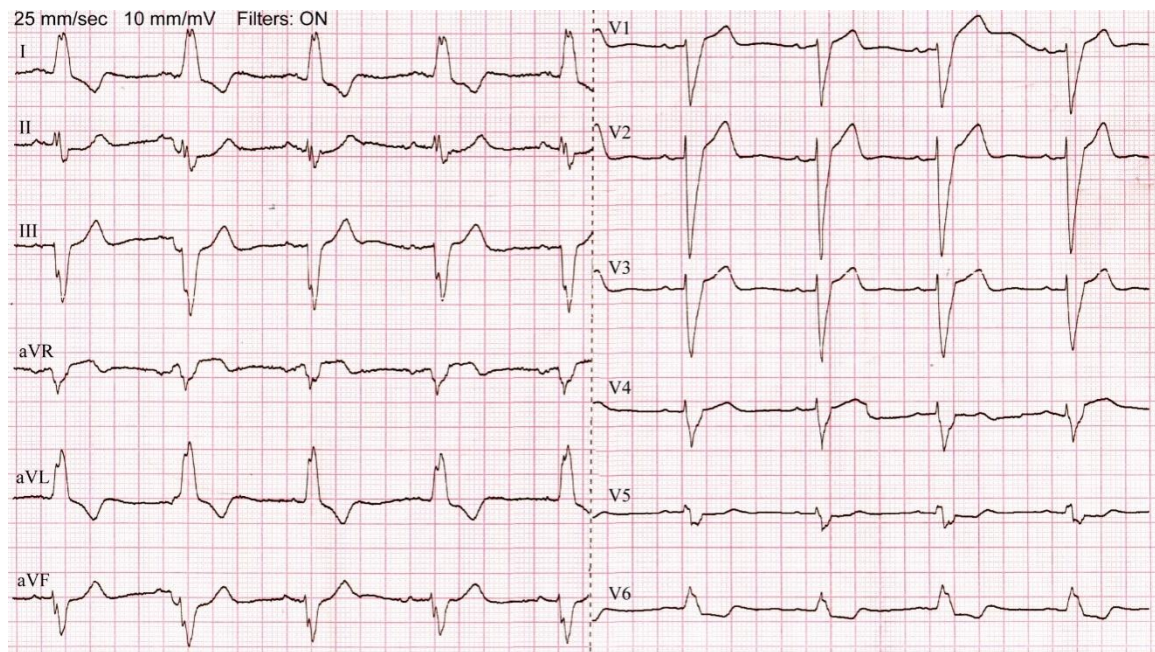
4.2: What kind of block is it?

4.3: What treatment step should be taken next?

Task №5. Describe the following ECG:



Task №6: Asymptomatic 48-year-old patient has his ECG recorded.



Describe any block present:

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Topic 4. Management of a patient with cardiac pain.

The main goals: to acquire communication skills and skills of clinical examination of a patient with cardiac pain; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with cardialgia; master the principles of treatment, recommendations for lifestyle changes in the management of patients with cardialgia; learn how to diagnose emergency conditions in patients with cardiac pain; master the tactics of providing emergency medical care to patients with cardiac pain; to be able to perform therapeutic manipulations in patients with cardiac pain.

Key words: the technique of carrying out a differential diagnosis according to the leading syndrome of cardialgia; principles and methods of differential therapy of patients with cardialgia syndrome; differences between psychogenic and somatic pain; CNS-induced pain; main laboratory and instrumental research methods.

PLAN

Theoretical questions:

1. List which diseases of the heart, respiratory, digestive, nervous and musculoskeletal systems can be accompanied by the syndrome of cardialgia.
2. List the main parameters that characterize the pain syndrome.
3. What instrumental research methods can confirm the diagnosis of angina pectoris, myocardial infarction, dissecting aortic aneurysm, pericarditis, PE, pneumothorax, esophagitis, cholecystitis, thoracic radiculitis?
4. What laboratory research methods can confirm the diagnosis of myocardial infarction, myocarditis, PE, cholecystitis, shingles?
5. What is the drug therapy of an acute attack of angina pectoris and preventive antianginal therapy?
6. What is the therapy of pain syndrome in acute myocardial infarction.
7. Name the tactics of treatment of patients with neuro-circulatory dystonia.
8. What are the features of the treatment of cardialgia in diseases of the digestive system?
9. What are the features of treatment of cardialgia in diseases of the musculoskeletal system.
10. What are the features of the treatment of cardiac pain in inflammatory heart diseases?

Practical tasks:

1. What are the main causes of chest pain?

Cardiovascular diseases	Ischemic	
	Non-ischemic	
Diseases of the respiratory system	Lung disease	
	Pleural disease	
Diseases of the digestive system	Diseases of the esophagus and the diaphragm	
	Diseases of the stomach	
	Biliary pathology	
	Pancreatic pathology	
Mental disorders	State of anxiety	
	Affective states	
Etc.	Pathology of the spine	
	Diseases of the chest muscles, cartilages and ribs	

	Endocrine pathology	
	Viral diseases	
	Organic diseases of the central nervous system	

2. Fill in the table instrumental methods of examination for the differential diagnosis of cardialgia

Diagnosis (confirmation / exclusion) coronary artery disease and angina	Diagnosis of non-coronary cardialgia
•	•
•	•
•	•
•	•
•	•
•	•
•	•

3. Complete the table "The main differences between angina pain and cardialgia of other origins".

Signs	The pain in stable angina	The pain of another origin
Age		
Risk factors for CHD		
The character of pain		
Localization		
Irradiation of the pain		
Factors causing pain		
Link of pain with physical load		
Duration		
Pain relief		
Other symptoms		

5. Fill in the table "Treatment cardialgia" drugs from the list: proton pump inhibitors, NSAIDs, spasmolytics, minor tranquilizers, antidepressants, vasoactive agents, enzymes, neurometabolics, benzodiazepines, α - and β -blockers.

Myocarditis, pericarditis, pleuritis	Gastroesophageal reflux disease, peptic ulcers	Biliary and pancreas pathology	Psychogenic Cardialgia

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Topic 5. Management of a patient with chronic coronary syndrome.

The main goals: to acquire communication skills and skills of clinical examination of a patient with stable angina pectoris; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with stable angina pectoris; master the principles of treatment, recommendations for lifestyle changes in the management of patients with stable angina pectoris; learn how to diagnose emergency conditions in patients with stable angina pectoris and master the tactics of providing emergency medical care; to be able to perform therapeutic manipulations in patients with stable angina pectoris.

Key words: modern classification of CHD; functional classes of stable angina pectoris according to the Canadian classification and their compliance with stress tests (VEM, treadmill); differences between stable angina and other forms of CHD; examination plan for a patient with stable angina pectoris; ECG signs of myocardial ischemia during exercise; the possibilities of Holter monitoring in the diagnosis of myocardial ischemia, indications for the appointment of Holter monitoring ; clinical and instrumental signs of coronary X syndrome; features of the phenomenon of painless myocardial ischemia (in whom it occurs, what are its manifestations, how to diagnose it); indications for coronary angiography ; assessment of lipidogram , troponin test results; management tactics of a patient with stable angina depending on FC; additional research methods: PET, myocardial scintigraphy , dipyridamole test.

PLAN

Theoretical questions:

1. Name the modern classification of CHD
2. Name the functional classes of stable angina pectoris according to the Canadian classification and the corresponding load in stress tests (VEM, treadmill)
3. Name the differences between stable angina and other forms of CHD.
4. Examination plan for a patient with stable angina pectoris.
5. ECG signs of myocardial ischemia during exercise

6. Possibilities of Holter monitoring in the diagnosis of myocardial ischemia, indications for prescribing Holter monitoring.
7. Clinical and instrumental signs of coronary syndrome X.
8. The phenomenon of painless myocardial ischemia: in whom does it occur, what are its manifestations, how to diagnose it?
9. Indications for coronary angiography.
10. Practical skills: evaluation of lipidogram results.
11. Tactics of management of a patient with stable angina pectoris depending on FC.
12. Additional research methods: PET, myocardial scintigraphy, dipyridamole test.

Practical tasks:

1. Select modifiable and non-modifiable risk factors for stable angina:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

2. Describe the pain in a typical stable angina attack on the basic parameters:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

3. Give a description of the classes of angina, according to the Canadian Classification:

1. IFC: _____
2. II FC: _____
3. III FC: _____
4. IV FC: _____

3. Clinical task:

Patient D., aged 55, complains of a constricting pain in the chest that occurs when walking 300 - 400 meters, relieved by nitroglycerin. Suffers these symptoms for the last 3 years. OBJECTIVE:

Pulse - 82/min., BP - 130/80 mm Hg. The ECG at rest: without pathological changes.

What is a preliminary clinical diagnosis:

5. Letter of disease with which you will conduct a differential diagnosis:

10. Make a plan of treatment of patient D, according to the current guidelines:

Drug-free treatment:

Medications:

List of recommended literature:

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Topic 6. Management of a patient with cardiomegaly.

The main goals: to acquire communication skills and clinical examination skills of a patient with cardiomegaly ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with cardiomegaly ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with cardiomegaly ; to be able to perform therapeutic manipulations in patients with stable angina pectoris.

Key words: basis of complaints, anamnesis, percussive and auscultatory data in patients with cardiomegaly ; a patient examination plan to establish the etiology of cardiomegaly ; ECG analysis and changes characteristic of myocarditis, cardiomyopathy or pericarditis; differential diagnosis and establishing the causes of heart enlargement; specific changes during ultrasound examination; treatment plan for a patient with the appropriate nosology, drugs used in the treatment of cardiomegaly ; basic measures of rehabilitation and prevention.

PLAN

Theoretical questions:

1. Give definition cardiomegaly. Criteria cardiomegaly.
2. Practical skills: in and meaning borders heart , diameter of the heart , width of the vascular bundle.
3. Which options total or local cardiomegaly possible in patients ? (Four configurations : aortic , mitral , bulb (acute pericarditis, acute myocarditis), trapezoidal (hydropericardium).
4. Laboratory methods: rheumatic tests (ASLO, ASH, ASA), inflammatory tests , antibodies to herpes ½, CMV, E-B, Borrelia , syphilis , chlamydia , mycoplasma , toxoplasma.
5. Spend differential diagnosis between DCMP and HCMP.
6. Principles treatment patients with:
 - 1) Diffuse myocarditis, pancarditis
 - 2) Exudative pericarditis
 - 3) Dilatational cardiomyopathy
 - 4) Hypertrophic cardiomyopathy

Practical tasks:

- 1 . Fill in the table:

	Common signs of cardiomegaly
1	
2	
3	
4	

- 2 . Fill in the table:

The main causes of cardiomegaly

Disease	Causes of cardiomyopathy
Coronary artery disease cardiosclerosis cardiosclerosis
Arterial hypertension
Heart defects
Myocarditis	Infectious

	Parasitic
Cardiomyopathy Restrictive
Pericarditis Constrictive
Tumors of the heart Metastatic
Secondary lesions of the heart	Endocrinopathies Neuromuscular diseases Uremia
"Sports" heart	

3 . Fill in the table:

Methods of instrumental studies and their significance for the diagnosis of cardiomegaly

Methods	The purpose of the application
PCG	
Holter ECG monitoring, stress tests, Echo - CG	
Doppler study of the carotid arteries and the lower extremities	
Ocular fundus examination	
Biopsy of the mucosa of the gums and rectum	

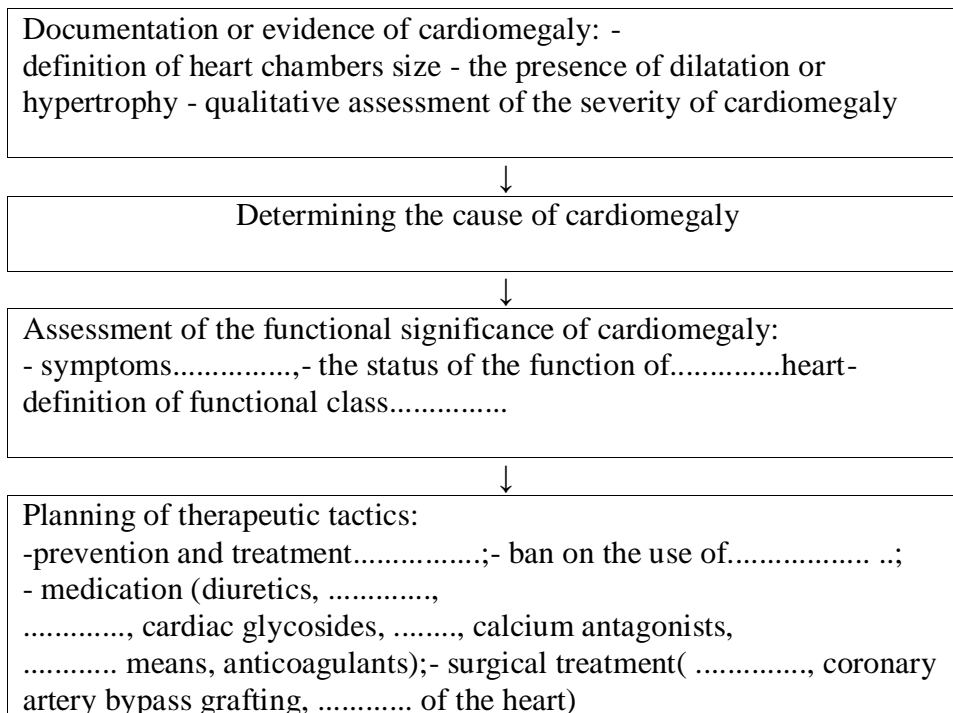
4. Fill in the table:

Laboratory diagnosis of cardiomegaly

Methods	The purpose of the application
General analysis of blood	Diagnosis of anemia , polycythemia , leukocytosis and ESR
Blood and urine glucose	Diagnosis
Lipids of blood plasma	Diagnosis and combination with IHD
Rheumatoid factor in serum	Diagnosis
Rheumatology test (ASLO)	Diagnosis
Free and bound iron in the blood	Diagnosis
T3 and T4 in the blood	Diagnosis
Wasserman reaction	Diagnosis of aortic valve
Bacterial examination of blood	Diagnosis

5. Complete the diagram:

The diagnostic algorithm for cardiomegaly



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Topic 7. Management of a patient with heart murmurs

The main goals: to acquire communication skills and skills of clinical examination of a patient with heart murmurs; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with heart murmurs; master the principles of treatment, recommendations for lifestyle changes in the management of patients with heart murmurs ; to be able to perform therapeutic manipulations in patients with heart murmurs .

Key words: etiology, pathogenesis and pathomorphology of diseases accompanied by heart murmurs; clinical classification of heart murmurs: nature of course, degree of activity of the process, clinical and morphological characteristics of the lesion; clinical manifestations of diseases accompanied by heart murmurs; diagnostic significance of additional research methods (general clinical, biochemical, immunological, instrumental); diagnostic criteria for diseases accompanied by heart murmurs; principles of treatment of diseases accompanied by heart murmurs, groups of drugs used and tactics of their use.

PLAN

Theoretical questions:

1. List the features of functional heart murmurs
2. In which patients can Flint's murmur, Coombs' murmur, Graham-Still's murmur be heard? Describe these noises.
3. What laboratory diagnostic methods help establish the cause of heart disease?
4. Give the classification of stages of heart defects.
5. What clinical syndromes (4) are characteristic of patients with mitral valve prolapse.
6. What auscultatory signs are characteristic of heart defects: 1) mitral stenosis 2) mitral insufficiency 3) aortic stenosis 4) aortic insufficiency 5) mitral valve prolapse
7. Principles of treatment of patients with rheumatic heart disease. Secondary prevention of rheumatic fever
8. Possibilities of medical treatment of mitral valve prolapse, indications for surgical correction.
9. List the indications for surgical treatment of patients with stenosis of the mitral orifice.
10. List the indications for surgical treatment of patients with mitral valve insufficiency.
11. List the indications for surgical treatment of patients with aortic valve stenosis.
12. List the indications for surgical treatment of patients with chronic aortic insufficiency.
13. What are the features of treatment of heart failure in patients with various heart defects?
14. In what clinical situations are patients with heart defects prescribed anticoagulant therapy? How is the safety of such treatment monitored?
15. What methods of primary and secondary prevention of heart defects are possible? Basic principles of prevention of infectious endocarditis in patients with acquired heart defects.
16. What is the prognosis and rules for determining work capacity in patients with heart defects?

Practical tasks:

1. List the types of cardiac murmurs:

According to presence or absence of organic

heart pathology:

According to the phase of cardiac cycle:

- | | |
|----------|----------|
| 1. _____ | 1. _____ |
| 2. _____ | 2. _____ |

According to loudness:

According to duration of murmur:

- | | |
|----------|----------|
| 1. _____ | 1. _____ |
| 2. _____ | 2. _____ |

2. Select the circle and heart disease, accompanied by systolic murmur:

1. Mitral insufficiency
2. The failure of the tricuspid valve
3. Mitral stenosis

4. Aortic stenosis

3. Select the circle and heart disease, accompanied by diastolic murmur:

1. Mitral insufficiency
2. The failure of the tricuspid valve
3. Mitral stenosis
4. Aortic stenosis

Clinical problems:

1. Patient K., 28 years old, was admitted to the hospital with complaints of pain in the large joints, disruptions in the heart, low-grade fever, fatigue. From anamnesis: frequent sore throats during childhood and adolescence, in 11 years - lacunar tonsillitis with temperatures up to 39-40 ° C, "volatile" pain in the joints, not surveyed, treated at home. Objective examination: systolic murmur over the apex of the heart, pain on palpation in the right knee and wrist joint, blood biochemistry: CRP - 28 mg / L, ASL-O - 1250 U/mL.

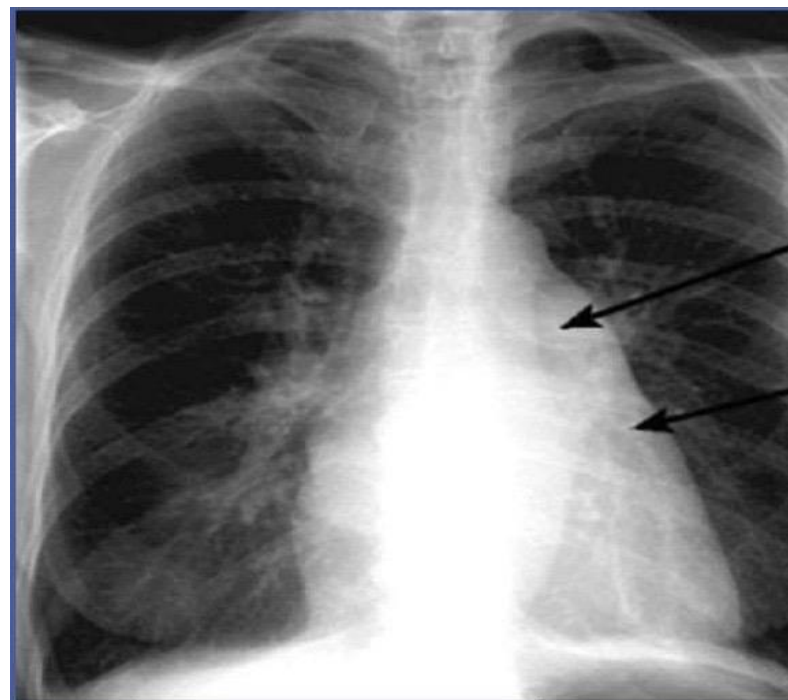
List the list of diseases for differential diagnosis:

Use Jones Criteria for Diagnosis of Rheumatic Fever

<https://reference.medscape.com/calculator/278/jones-criteria-for-diagnosis-of-rheumatic-fever>

List the additional studies needed for confirmation or rejection of the diagnosis:

2. Working as a cardiologist in a cardiology clinic you see a patient came from a rural area with the following X-ray image:



the X-Ray:

Describe all pathological changes you can find on

What disease do you suspect and what kind of cardiac murmur on auscultation should it prove?

3. Heart ultrasound of a 32-year-old patient.

Parasternal position of the short axis of the left ventricle at the level of the mitral valve, diastole. Planimetric measurement of the area of the mitral orifice. RV - right ventricle (enlarged), PE - a small amount of fluid in the pericardial cavity, MVA - area of the mitral orifice.

Your actions after evaluating these results of cardiac ultrasound?

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Topic 8. Management of a patient with heart failure.

The main goals: to acquire communication skills and skills of clinical examination of a patient with heart failure; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with heart failure ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with heart failure ; to be able to perform therapeutic manipulations in patients with heart failure .

Key words: definition of the term chronic heart failure; types of HF: right and left ventricular; diastolic and systolic (with reduced left ventricular ejection fraction (RLVEF), with preserved left ventricular ejection fraction (PLVEF), with an average level of left ventricular ejection fraction (ALVEF)); classification of HF according to Vasylenko-Strazhesko and according to NYHA ; collection of anamnesis from a patient with HF; mastering practical skills (listening for the presence of the III tone (gallop rhythm), recognizing congestive rales in the lungs, the presence of transudate, determining the expansion and pulsation of the jugular veins, signs of congestive hepatomegaly, hepatojugular reflux, assessment of edema of the lower extremities); characteristics of laboratory methods (BNP , NT - proBNP , general blood test, general urinalysis; biochemical tests: K +, Na +, creatinine and KFR, plasma cholesterol, bilirubin, "liver" enzymes, glucose, uric acid); interpretation of the results of instrumental research methods (ECG (aneurysm, scars), EchoCS, ultrasound of the pleural cavity, pleural cavity, Rg chest, 6-minute walk test).

PLAN

Theoretical questions:

- 1 . List which diseases of the heart, respiratory, nervous and musculoskeletal system can be accompanied by such a complication as heart failure.
- 2 . List the main clinical symptoms that make it possible to suspect the presence of HF.
- 3 . What laboratory research methods can confirm the diagnosis of HF?
- 4 . What instrumental research methods can confirm the diagnosis of HF and determine its type?
- 5 . Tactics for preventing or delaying the development of HF.
- 6 . Basic principles of management of a patient with HF.
7. Peculiarities of HF management in patients with cardiomyopathy,
8. Peculiarities of HF management in patients with aortic stenosis and aortic insufficiency.
9. Peculiarities of HF management in patients with myocarditis and pericarditis.

Practical tasks:

1. Name 4 diseases that frequently lead to the development of chronic heart failure (CHF)

1 _____
 2 _____
 3 _____
 4 _____

2. Specify the main symptoms and objective signs of CHF for small and large circles of blood circulation.

	Small circle of blood circulation	Big circle of blood circulation
Symptoms		
Objectivesigns:		

3. Which laboratory (basic and supplementary) tests do you designate and for what purpose?

4. List the parameters of Echocardiography, which may indicate the presence of HF:

3. Clinical task.

Patient E., 72 years old, was admitted to the cardiology department with complaints of shortness of breath when walking on a flat place at a distance of 100 m and climbing one flight of stairs, weakness, fatigue, swelling of legs and feet. From history it is known that she suffers for about 22 years from hypertension with a maximum rise of blood pressure to 220/110 mm Hg. She is not regularly treated, takes diuretic treatment in large doses, not systemically. Suffers from type 2 diabetes.

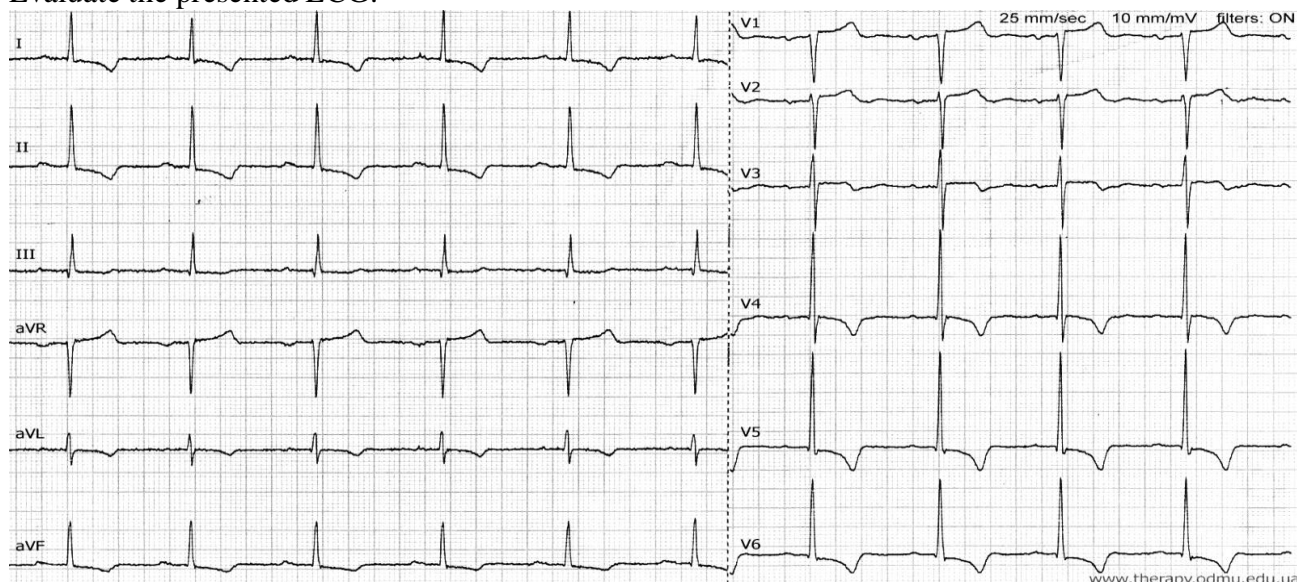
On examination: moderate severe state. Height 155 cm, weight 102 kg. Skin of normal coloration. A small swelling of legs and feet. Thorax conical, symmetrical. Respiratory rate is 18/min.

Auscultation over the lungs is determined by hard breathing, no wheezing. Borders of relative dullness of the heart: the right - the right border of the sternum, the left in the V intercostal space 2.5 cm outwards from the midclavicular line left, top - the top edge of the third rib. Auscultation of the heart tones is clear, accent of II tone in the II intercostal space to the right of the sternum, no noises. The regular heart rhythm, heart rate 96 / min. BP 180/100 mm Hg. The abdomen is soft, painless. The size of the liver on Kurlov: 12x11x8 cm. Abdominal circumference - 120 cm.

Specify a preliminary clinical diagnosis according to the classification:

3.1 ECG of the patient:

Evaluate the presented ECG:



3.2 Evaluate the results of labs of the patient:

General blood analysis: hemoglobin 132 g/l, leucocytes - 7.g/l, erythrocytes - 4.h/l, eosinophils - 2%, stab - 5%, segmented - 68%, lymphocytes 20%, monocytes - 5%, ESR - 14 mm/h.

Urinalysis: relative density 1011, the reaction of the acidic, protein 75 mg/day, glucose is absent, 0 erythrocytes in the field of view, leukocytes 1-2 in the field of view.

In the biochemical analysis of blood - cholesterol level of 8.3 mmol/l, glucose of 7.8 mmol/l, urea 10.2 - mmol/l

BNP - 450 pg/ml.

K - 3.6 mmol/l, Na - 115 mmol/l.

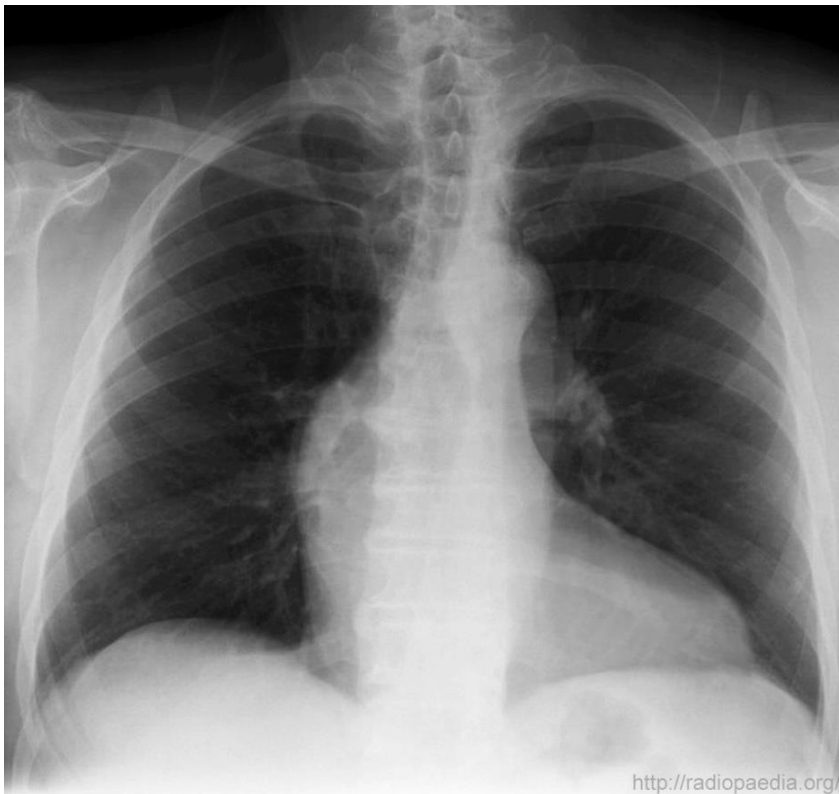
3.4 Estimate the risk with a calculator <https://www.mdcalc.com/maggic-risk-calculator-heart-failure>

3.5 Write the treatment plan of the patient:

Non-pharmacological:

Drugs:

3.6 Describe the X-ray:



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Topic 9. Management of a patient with shortness of breath.

Purpose: to acquire communication skills and skills of clinical examination of a patient with shortness of breath ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with shortness of breath ; to master the principles of treatment, recommendations for lifestyle changes when managing patients with shortness of breath ; to diagnose emergency conditions in patients with shortness of breath; master the tactics of providing emergency medical aid to patients with shortness of breath; to be able to perform therapeutic manipulations in patients with heart failure .

Basic concepts: definition of shortness of breath ("expiratory shortness of breath", "inspiratory shortness of breath", "mixed shortness of breath"); etiology and pathogenesis of diseases that cause shortness of breath (exudative pericarditis, bronchial asthma (BA), chronic obstructive pulmonary disease (COPD), pneumonia, exudative pleurisy, pulmonary emphysema, pneumosclerosis, lung and heart failure); diagnostic value of clinical, instrumental and laboratory examination data to determine the disease that caused shortness of breath; principles of non-drug and drug treatment of patients with diseases that progress with shortness of breath syndrome; complications, prognosis and working capacity of patients with diseases accompanied by shortness of breath; primary and secondary prevention of diseases accompanied by shortness of breath.

PLAN

Theoretical questions:

1. Define shortness of breath and shortness of breath, tachypnea.
2. What is more characteristic of inspiratory and expiratory shortness of breath?
3. What diseases of the heart and blood vessels, respiratory, nervous and other systems can cause shortness of breath and dyspnea?
4. Describe the features of shortness of breath and shortness of breath in patients with diseases of the respiratory system.
5. Describe the features of shortness of breath and shortness of breath in patients with diseases of the cardiovascular system.
6. Describe the features of shortness of breath and shortness of breath in patients with diseases of the nervous system.
7. What diagnostic information can we obtain in determining the causes and severity of dyspnea and shortness of breath in patients with cardiovascular pathology using the following methods:
 - Spirography
 - ECG
 - ECG with exercise
 - ECHO-CG
 - 24-hour Holter monitoring

- roentgenoscopy of the heart and lungs
- CT angiography

8. What is the diagnostic value of determining BNP, preBNP, D-dimer, immunoglobulin E, eosinophils, blood gases.
9. Prognosis and working capacity of patients with shortness of breath and dyspnea.

Practical tasks:

1. symptom of dyspnea:
2. What types of shortness of breath do you know?

3. Name the diseases accompanied by symptoms of shortness of breath

4. What are the main pathogenetic mechanisms of dyspnea in various diseases

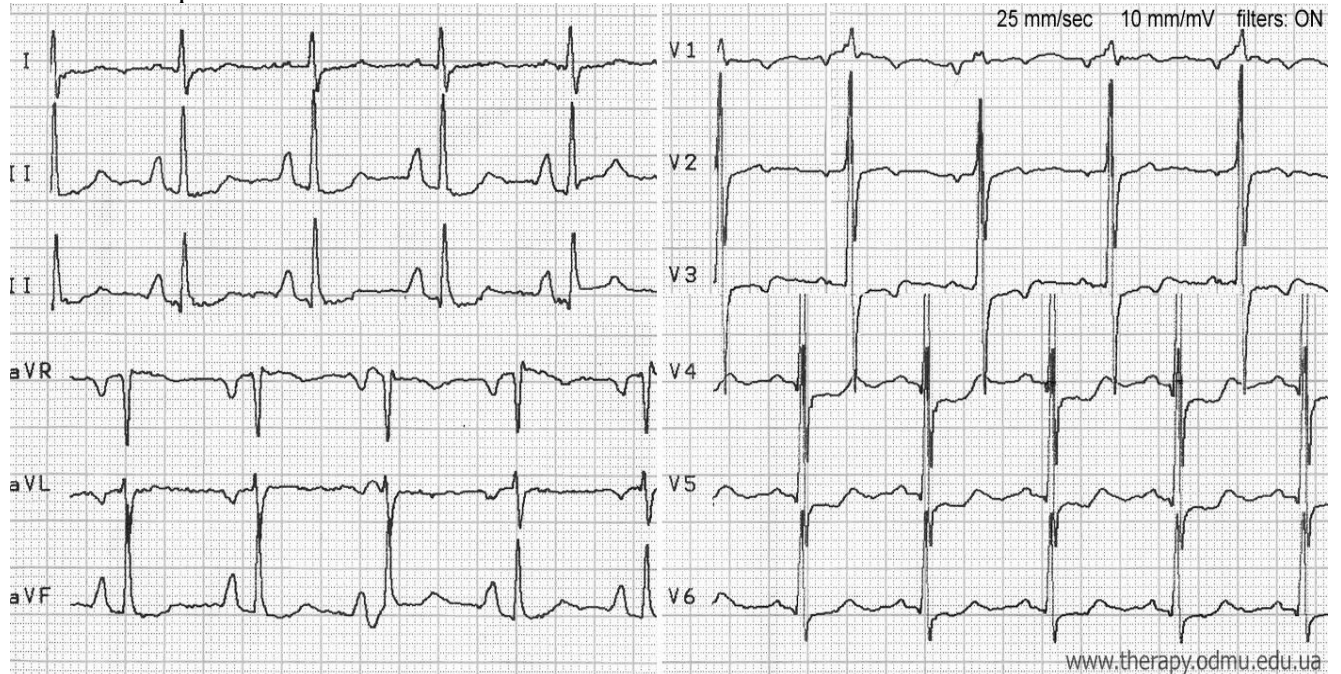
Clinical task

Patient R., 48 years old, driver, went to a general practice doctor with complaints of shortness of breath, cough with purulent sputum, fever up to 37.5°C, sweating, headache, general weakness. Coughs for 20 years, first dry, then with a small amount of purulent sputum, the volume of which is gradually increased. Was not treated. The last 5 years, mainly in spring and autumn (after cooling), due to an increase in the cough began the increase in body temperature to 37.2°C. The present deterioration within 2 weeks, when after cooling, increased cough with expectoration of purulent sputum, fever up to 37.5°C. Appealed to the doctor in the clinic. Bad habits - smoking for 20 years 1-1.5 packs of cigarettes a day. Objectively: the condition is satisfactory. Skin is cyanotic, high humidity. The rib cage is expanded in the anteroposterior direction. Percussion over the lungs sounds with box shade. Auscultation: on the weakening of breath are heard scattered dry and moist rales on exhalation. From the side of other organs and systems - without features.

What is a preliminary diagnosis?

What laboratory and instrumental methods of examinations will you designate in the presented clinical case

Describe the presented ECG:



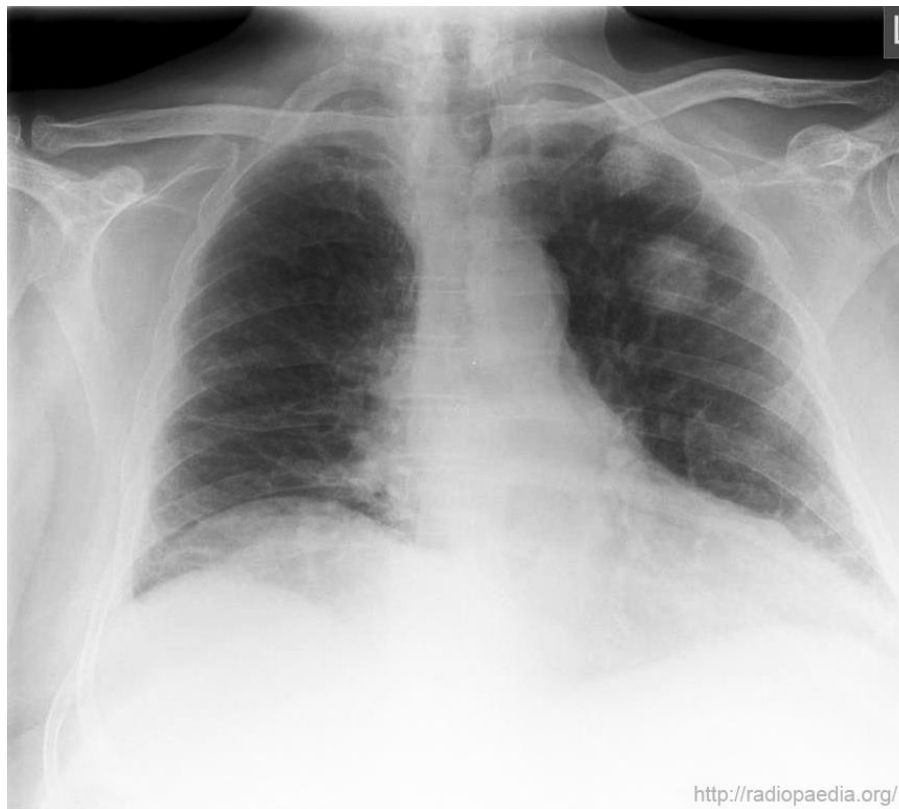
Differential-diagnostic signs of dyspnea due to heart and respiratory failure

Signs	Heart failure	Respiratory failure
Nature of dyspnea		
Cyanosis		
Percussion data		
Auscultation data		
Type of respiratory function violation		
ECG-signs		
Laboratory signs		

--	--	--

What is the difference between paroxysmal and constant shortness of breath?

Describe the presented X-ray:



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- <http://www.oxfordmedicaleducation.com/>
- <http://ard.bmj.com>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 10. Management of a patient with edematous syndrome.

Purpose: to acquire communication skills and clinical examination skills of a patient with edematous syndrome ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with edematous syndrome ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with edematous syndrome ; to diagnose emergency conditions in patients with edematous syndrome; master the tactics of providing emergency medical care to patients with edematous syndrome; to be able to perform therapeutic manipulations in patients with edematous syndrome .

Basic concepts: etiology, pathogenesis, pathomorphology, clinical features of the course of diseases accompanied by the development of edematous syndrome (acute and chronic glomerulonephritis, heart failure with "congestive kidney", diabetic nephropathy, liver cirrhosis); laboratory-instrumental signs of the diseases listed above; the technique of interviewing the patient to identify signs of organ damage and diseases that caused swelling; formulation of the preliminary diagnosis of the disease; differential diagnosis of edematous syndrome; tactics of treatment of a patient with edematous syndrome; prognosis of the course of the disease, recommendations for treatment and prevention of the detected disease.

PLAN

Theoretical questions:

1. Define the concepts of edema, edematous syndrome.
2. Spend systematization of swellings according to prevalence, pathogenetic mechanisms of development.
3. Define mechanisms of formation of edematous syndrome in chronic heart failure.
4. Define the concept of nephrotic syndrome. State the main reasons of its development.
5. Define mechanisms and formation of " edematous " syndrome in myxedema.
6. What is the mechanism and formation of edematous syndrome in hypoproteinemic states?
7. Classification of diuretics. Mechanism of action, indications, contraindications.
8. Basic principle and therapy of chronic heart failure
9. Basic principle and therapy of nephrotic syndrome
10. Basic principle and therapy of myxedema.

Practical tasks:

1. Give the definition of "edematous syndrome":

Excessive accumulation of fluid in _____ the body and _____, which is manifested by an increase in _____ and change in capacity _____, the change of physical properties and dysfunction of swollen tissues and organs

2 . Fill the main pathogenetic factors leading to the formation of edema

1. Increase in hydrostatic pressure in capillaries .
- 2.
- 3.
4. The reduction of tissue mechanical pressure .
- 5.
6. The outflow disorders of venous blood and lymph .
- 7.
- 8.

3. Add to the table the main diseases in the classification category of edema

Generalized	Local			Caused by medication
	Venous	Lymphatic	Other types	
Cardiac diseases				

4. Fill in the table

Types of edema	Clinical features	Examples of diseases in which edematous syndrome occurs
Venous edema		
Cardiac edema		
Lymphatic edema		
Renal edema		
Edema due to liver disease		
Edema with enteropathy with loss of protein		
Edema of nutritional origin		
Edema of pregnant		

5. Name the first and second line studies when edema

1. The first line – urinalysis, the test of daily proteinuria ;

2. Thesecondline – studies of thyroid hormones (if hypothyroidism is suspected),

6. Probes of Trendelenburg-Troyanov, Perthes, Prett are used in the diagnosis of

Probes of Homans, Moses, Lowenberg are used in the diagnosis of

Describe them .

1. Assign treatment to a patient with CHF III st. :

2. Prove the feasibility (or vice versa) of management of the patient with edematous syndrome by this algorithm

False edema→ ↓	Yes→	Myxoedema O besity S cleroderma
No ↓		
True → ↓	Yes →	Location: Thrombophlebitis Phlebothrombosis Varicose veins Lymphostasis
No ↓		
Generalized → ↓	Yes→	With polyuria Tumors of the intestine
Without polyuria: swelling appears gradually, accompanied by shortness of breath→ ↓	Yes→	Avitaminosis B1 Alcoholism The hunger strike Coronary heart disease Hea rt defects Myocarditis Cardiomyopathies Chronic pulmonary heart

Swelling appears fast, accompanied by BP increase→ ↓	Yes→	Glomerulonephritis Diabetic kidney disease Systemic lupus erythematosus Pregnant nephropathy
No ↓		
Ascites → ↓	Yes→	Cirrhosis of the liver Chronic pericarditis Liver cancer Metastasis of tumors Tuberculo us peritonitis Combined heart defects
No ↓		
Idiopathic edema		

Test tasks:

1. Which feature is not likely to the nephritic syndrome:

- A. Edematic syndrome.
- B. Hypolipidemia (hypocholesterinemia)
- C. Proteinuria.
- D. Hypoalbuminemia.
- E. Syndrome of arterial hypertension.

2. Name three typical symptoms of CHF:

- A. Oliguria.
- B. Macrohematuria.
- C. Proteinuria.
- D. Hypocholesterolemia.
- E. Hypercholesterolemia.

3. Name the disease due to which low erextremities edema occurs :

- A. Infectious endocarditis ;
- B. Heart failure ;
- C. Sinus tachycardia ;
- D. Leucosis ;
- E. Nothing from listed .

4. Patient 18 years old complains of headache, weakness, dizziness. Got sick this morning. 3 weeks ago had a sore throat. Objectively: pulse 90/min BP is 180/105 mm Hg. Moderate accent of II tone on the aorta. No other changes have been identified. Blood analysis: er - 3.h/l, Leu - 6.h/l, ESR-12 mm/hour. Urine analysis: protein - 1.65 g/l, Leu-10-15, erythrocytes leached - 60-80, hyaline cylinders – 4-6, granular – 1-2, relative density 1024. What is the most likely diagnosis?

- A. Acute glomerulonephritis
- B. Acute pyelonephritis.
- C. Hypertonic disease
- D. Shenleyn-Genoh purpura.
- E. Lupus erythematosus.

List of recommended literature:

Basic literature:

- Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition - (August 13, 2021). - 736 pages
- Pocket Medicine: The Massachusetts General Hospital Handbook of Internal Medicine / 007

edition (12 Sept. 2019). - 272 pages

- Davidson's Principles and Practice of Medicine: Enhanced Digital Version Included / Elsevier; 23rd edition (25 April 2018). - 1440 pages

Additional literature:

- Macleod's Clinical Examination /Elsevier; 14th edition (11 Jun. 2018). - 400 pages

- Current Medical Diagnosis and Treatment /McGraw-Hill Education; Updated edition (14 Sept. 2021). - 1840 pages

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- Goldman-Cecil Medicine, 2-Volume Set (Cecil Textbook of Medicine) / Elsevier; 26th edition (20 Dec. 2019). - 2944 pages

- The Washington Manual of Medical Therapeutics / Wolters Kluwer Health; 36th edition (6 Jun. 2019). - 1074 pages

- Harrison's Manual of Medicine / McGraw-Hill Education; 20th edition (5 Nov. 2019). - 1245 pages

Electronic information resources

- World Health Organization. URL: www.who.int/ru/index.html.

- European Regional Office of the World Health Organization. URL: www.euro.who.int.

- <https://www.aasld.org/>

- https://academic.oup.com/ndt/pages/General_Instruction

- <https://cprguidelines.eu/>

- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

- <http://www.oxfordmedicaleducation.com/>

- <http://ard.bmj.com>

- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 11. Management of a patient with pain in the back and limbs.

Purpose: to acquire communication skills and skills of clinical examination of a patient with pain in the back and limbs; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with pain in the limbs and back; master the principles of treatment, recommendations for lifestyle changes when managing patients with pain in the limbs and back; diagnose emergency conditions in patients with pain in the limbs and back; master the tactics of providing emergency medical care to patients with edematous syndrome; to be able to perform therapeutic manipulations in patients with pain in the limbs and back.

Basic concepts: etiological factors of pain in the limbs and back; classification and clinical types of back pain and limbs pain; basic principles of diagnosis of patients with pain in the back and limbs, according to existing standards; possible risk factors for pain syndrome in the back and limbs; etiology and pathogenesis of ankylosing spondylitis (AS) / synonym - Bekhterev 's disease (CB), myeloma disease; the results of laboratory and instrumental examination methods that are important for diagnosis; tactics of differential therapy; secondary prevention measures; prognosis and degree of working capacity.

PLAN

Theoretical questions:

1. Explain the pathogenesis and clinical features of reflected back pain in diseases of internal organs (myocardial infarction, pericarditis, pleurisy, disintegrating aortic aneurysm, spontaneous pneumothorax, penetrating gastric ulcer, acute cholecystitis, renal colic).

2. What clinical features are characteristic of pain in the back and limbs associated with herniated intervertebral discs?
3. What are the clinical features of back and limb pain associated with metastatic lesions and myeloma?
4. List the diagnostic criteria for ankylosing spondylitis and reactive arthritis. Why was the name of Reiter's disease changed?
5. Describe the methods of objective examination of patients with ankylosing spondylitis spondyloarthritis .
6. What extra-articular lesions are possible in patients with ankylosing spondylitis spondyloarthritis and reactive arthritis?
7. What laboratory research methods are necessary to verify the cause of back pain?
8. What X-ray changes are characteristic of patients with ankylosing spondylitis spondyloarthritis and reactive arthritis?
9. Name the main principles of medical treatment of patients with ankylosing spondylitis spondyloarthritis and reactive arthritis.
10. What antimicrobial agents and for what purpose are they prescribed to patients with reactive and postenterocolitis arthritis?

Practical tasks:

1. List what groups of diseases are characterized by the appearance of pain in the limbs and back:

2. Specify which laboratory and instrumental methods of examination are used in the diagnosis of diseases of the joints and muscles of unknown etiology :

Laboratory :	Instrumental :
--------------	----------------

3. List the X-Ray signs that are most typical for the following diseases:

Disease	X-Ray signs
Gout	
Rheumatoid arthritis	
Osteoarthritis	
Systemic scleroderma	
Ankylosing spondylitis (Bechterev's disease)	

4. Name of the diseases other than musculoskeletal pathology , which May be accompanied by pain in the back

Organ system	Diseases
Heart and aorta	
Respiratory system	
Gastro-intestinal tract	
Pelvic organs	
Peripheral nervous system	

5. Fill in the table with medications from the list:

methotrexate , sulfasalazine , methylprednisolone , delagil , certolizumab , prednisolone , Plaquenil , meloxicam , aceclofenac , rituximab , leflunomid , Don a , etarnetsept , ibuprofen , infliximab , glucosamine , movalis , nimesil , diprospan , ketoprofen , anakinra , hyalgan , chondroitin

NSAIDs	Corticosteroids	Disease-modifying drugs	C chondroprotectors	Biological agents



6. Give a conclusion on the presented X-ray; name all the pathological changes you can find.

List of recommended literature :

Basic literature:

- Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition - (August 13, 2021). - 736 pages
- Pocket Medicine: The Massachusetts General Hospital Handbook of Internal Medicine / 007 edition (12 Sept. 2019). - 272 pages
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(20 Dec. 2019). - 2944 pages

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- European Regional Office of the World Health Organization. URL: www.euro.who.int.
- <https://www.aasld.org/>
- https://academic.oup.com/ndt/pages/General_Instruction
- <https://cprguidelines.eu/>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>
- <http://www.oxfordmedicaleducation.com/>
- <http://ard.bmj.com>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 12. Management of a patient with joint syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with joint syndrome ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with joint syndrome ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with joint syndrome ; to diagnose emergency conditions in patients with joint syndrome; master the tactics of providing emergency medical care to patients with edematous syndrome; to be able to perform therapeutic manipulations in patients with joint syndrome .

Basic concepts: main clinical manifestations of rheumatic diseases; joint syndrome - nosological features; basic and additional research methods in rheumatology; laboratory research methods and their clinical significance; instrumental methods of research of patients with rheumatic diseases and their clinical significance.

PLAN

Theoretical questions:

1. Describe the clinical, laboratory and X-ray manifestations of joint syndrome in patients with acute rheumatic fever.
2. Describe the clinical, laboratory and X-ray manifestations of joint syndrome in patients with rheumatoid arthritis.
3. Describe the clinical, laboratory and X-ray manifestations of joint syndrome in patients with reactive arthritis.
4. Describe the clinical, laboratory and X-ray manifestations of joint syndrome in patients with SLE.
5. Describe the clinical, laboratory and X-ray manifestations of joint syndrome in patients with osteoarthritis.
6. Describe the clinical, laboratory and X-ray manifestations of joint syndrome in patients with gout arthritis.
7. Give modern diagnostic criteria for rheumatism, rheumatoid arthritis, SLE, gout.
8. List the modern principles of treatment of SLE, which drugs are effective in the most manifest joint syndrome?
9. List the modern methods of treatment of rheumatoid arthritis. What complications are possible when using NSAIDs, CS, basic NSAIDs.
10. List the current principles of treatment of gout arthritis.

Practical tasks:

1. List the most common diseases associated with joint syndrome.

2. What objective signs you should evaluate during any physical examination of the affected joint:

1. _____
2. _____
3. _____
4. _____
5. _____

3 . You suspect rheumatoid arthritis in a 37-year-old female patient. Which tests will be most useful to confirm your diagnosis?

4. Which joint damage is most characteristic in rheumatoid arthritis?

5. Which joints are usually affected in osteoarthritis?

6. Clinical task:

Patient K., 39 years old, was admitted to the hospital with swelling and intense pain in the left knee and both ankles, excluding the last 2 days the ability to walk. In anamnesis - 1.5 months ago, suffered an acute urethritis, 1 month ago - low-activity conjunctivitis, last week there were pains at first in small joints of the foot, then in both ankles, and 2 days ago - in his left knee. OBJECTIVE: joints are hyperemic sharply painful, restricted movement, moderate tenderness of the left Achilles tendon.

What diagnosis do you suspect?

What additional methods of examination will you assign to confirm the diagnosis?

7. Which rheumatic diseases are considered systemic and what do they have in common?

8. How do you call such a hand shape and what disease is it specific for?



9 . What are the two most specific signs of cutaneous manifestations in systemic lupus erythematosus:

1. _____
2. _____

10. Assign treatment regimen for a patient with severe systemic manifestations and a high degree of activity of SLE:

11. You are examining a patient who complains of intense pain in both feet. X-ray was performed:



Give a description of the presented X-ray:

Further tactics of examination and treatment of a patient:

List of recommended literature:

Basic

1. Harrison's Principles of Internal Medicine. Vol. 2. / J. Larry Jameson [et al.]. — 20th. ed. — New York [etc.] : McGraw-Hill, 2018. — XLI, 1648-3528, 1-214 p.
2. Internal medicine [Text] : textbook for English-speaking students of higher medical educational establishments / KM Amosova, O. Ya. Babak, IP Katerenchuk [et al.] ; ed.: MA Stanislavchuk, VK Sierkova; National Pirogov Memorial Medical University, Vinnytsya. - (National textbook). Pt. 1: Cardiology. Rheumatology. Haematology, 2019. - 407 p.
3. Internal Medicine [Text] : textbook for English-speaking students of higher medical educational establishments / KM Amosova, O. Ya. Babak, IP Katerenchuk [et al.] ; ed.: MA Stanislavchuk, VK Sierkova; National Pirogov Memorial Medical University, Vinnytsya. - (National textbook). Pt. 2: Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate, 2019. - 359 p.
4. Kovalyova, OM Propedeutics of Internal Medicine: textbook / OM Kovalyova TV Ashcheulova. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 1 : Diagnostics = Diagnostics. — 2020. — 424 p.
5. Kovalyova OM Propedeutics of Internal Medicine [Text] : textbook / OM Kovalyova, SO Shapovalova, OO Nizhegorodtseva. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 2: Syndromes and diseases = Syndromes and diseases. — 2020. — 264 p.

Additional

1. Springer Link [Electronic resource] / Springer International Publishing AG. — Access mode:<https://link.springer.com>.

2. Oxford Medicine Online [Electronic resource] / Oxford University Press. – Access mode: www.oxfordmedicine.com.
3. Oxford ACADEMIK Journals [Electronic resource] / Oxford University Press. – Access mode: <http://www.oxfordjournals.org>.
4. The BMJ (British Medical Journal) [Electronic resource] // Mode of access: <http://www.bmj.com/archive>.
5. Scopus [Electronic resource] / Mode of access: <https://www.scopus.com>.

Topic 13. Management of a patient with broncho-obstructive syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with broncho-obstructive syndrome ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with broncho-obstructive syndrome ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with broncho-obstructive syndrome ; to diagnose emergency conditions in patients with broncho-obstructive syndrome; master the tactics of providing emergency medical care to patients with broncho-obstructive syndrome; to be able to perform therapeutic manipulations in patients with broncho-obstructive syndrome .

Basic concepts: the structure of the bronchial tree and lungs, the function of external breathing, blood circulation and biomechanics of breathing; etiology, pathogenesis of BA; modern classification, clinical features of BA; differential diagnosis of BA with COPD, pneumonia, pulmonary tuberculosis, lung tumors accompanied by broncho-obstructive syndrome; basic instrumental and laboratory research methods that prove the presence of AD; tactics of management of asthma patients depending on the causes, principles of differential treatment, indications for transfer of patients to the intensive care unit; primary and secondary prevention of BA, prognosis.

PLAN

Theoretical questions:

- 1) Definition of the concept of "Bronchial obstruction", clinical criteria.
- 2) What are the main causes and what is the difference between bronchial obstruction in BA and COPD
- 3) According to the definition of WHO, COPD is it? Classification.
- 4) According to the definition of WHO, BA is it? Classification.
- 5) What method of EBF research is used to monitor the course of BA, its diagnostic value.
- 6) The most frequent complications of BA.
- 7) The most frequent complications of COPD.
- 8) The tactics of prescribing bronchodilators for asthma and COPD in accordance with the standard of treatment.
- 9) Tactics of prescribing glucocorticosteroids in asthma and COPD in accordance with the standard of treatment.
- 10) Prevention and non-drug treatment of BA and COPD.

Practical tasks:

1 . Specify the criteria of obstructive spirometry and restrictive spirometry (FVC, FEV1, FEV1/FVC ratio)

Obstructive :

Restrictive :

2. Fill in the table the signs of the degree of severity of COPD

COPD severity degree	COPD signs
I, mild	
II, moderate	
III, severe	

IV, very severe	
-----------------	--

3. Complete differential diagnostic criteria in the table

Features	Chronic obstructive bronchitis	Bronchial asthma
Allergy		
Heredity		
Cough		
Shortness of breath		
Daily changes of FEV1		
Reverse of obstruction		
Eosinophilia		
Sputum		
Edema of the bronchial mucosa		
Smooth muscle of the bronchi		

4. Describe any changes on spirometry. Is this a restrictive or obstructive pattern?

Pulmonary Function Test Results

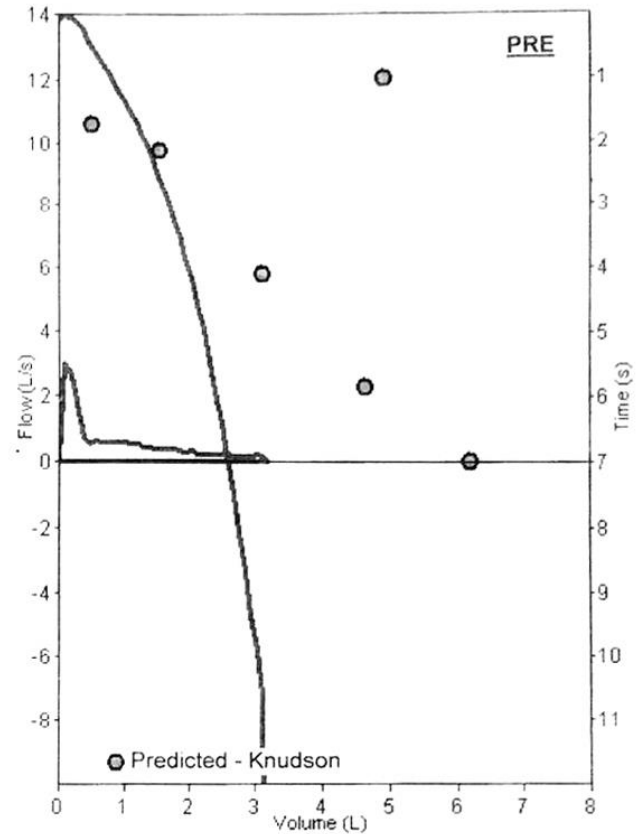
Flow / Volume and Volume / Time Loops

Visit date 25.03.2011

ID	43	Age	70
Surname	[REDACTED]	Gender	Male
First name	[REDACTED]	Height, cm	200
Date of birth	17.06.1946	Weight, kg	110
Ethnic group	Caucasian	Pack-Year	40
Smoke	Smoker		

Interpretation

Conclusion / Medical report



PRE Trial date 25.03.2011 1:26:31

Parameters	BTPS	Pred	PRE	%Pred	POST	%Chg	%Pred	Notes
Forced Vital Capacity								
Best values from all loops								
FVC	L	6,19	3,19	51,53				
FEV1	L	4,92	0,82	16,68				
FEV1%	%	80	25,7	32,15				
PEF	L/s	10,57	3,22	30,47				
Values from best loop								
FEF2575	L/s	4,74	0,31	6,54				
FEF25	L/s	9,74	0,65	6,67				
FEF75	L/s	2,25	0,19	8,46				
FEF50	L/s	5,8	0,33	5,69				
FVC	L	6,19						
FIV1	L	4,92						
FIV1%	%	80	0	0,00				
ELA	Years	204	204					
Lung Volumes and breathing pattern								
VC	L							
IVC	L							
FEV1/VC	%	80						
ERV	L							
IC	L							
Maximum Voluntary Ventilation								
MVV	L/min							

Signature

Instrument used
Spirobank_MF S/N 001129



5. Patient N., whose spirometry is presented above has CAT scores of 18 and three moderate exacerbations in the past year.
How would he be labeled in GOLD (Grade? Group?)
Write the treatment plan for this patient.

List of recommended literature:

Basic literature:

- Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition - (August 13, 2021). - 736 pages
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- Davidson's Principles and Practice of Medicine: Enhanced Digital Version Included / Elsevier; 23rd edition (25 April 2018). - 1440 pages

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- Lippincott Connect Standalone Courseware for Bates' Guide to Physical Examination and History Taking 1.0 /LWW; 13th ed. edition (23 Mar. 2023).
- Step-Up to Medicine / Wolters Kluwer Health; 5th edition (8 May 2019). - 582 pages
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Electronic information resources

- World Health Organization. URL: www.who.int/ru/index.html.
- European Regional Office of the World Health Organization. URL: www.euro.who.int.
- <https://www.aasld.org/>
- https://academic.oup.com/ndt/pages/General_Instruction
- <https://cprguidelines.eu/>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>
- <http://www.oxfordmedicaleducation.com/>
- <http://ard.bmj.com>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 14. Management of a patient with infiltrative darkening in the lungs.

Purpose: to acquire communication skills and skills of clinical examination of a patient with infiltrative darkening in the lungs ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with infiltrative darkening in the lungs ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with infiltrative darkening of the lungs ; to diagnose emergency conditions in patients with infiltrative darkening of the lungs; to master the tactics of providing emergency medical care to patients with infiltrative darkening of the lungs; to be able to perform medical manipulations in patients with infiltrative darkening in the lungs .

Basic concepts: definition of pulmonary infiltrate; leading criteria for assessing the nature of the pathological process (position of mediastinal organs, shadow structure); the method of survey and examination of patients with pulmonary infiltrate; leading syndromes of the disease based on the data obtained during the survey and examination of patients, formulation of the preliminary diagnosis taking into account the classification of the given disease; examination plan; the method of carrying out a differential diagnosis according to the leading syndrome of the disease; formulation of the final clinical diagnosis; principles of treatment of patients with diseases that lead to the formation of pulmonary infiltrate; peculiarities of diagnosis of limited pulmonary infiltrate;

round shadow syndrome; ring-shaped shadow in the lung field; outbreaks and limited dissemination; diffuse dissemination.

PLAN

Theoretical questions:

1. Definition of the concept - pulmonary infiltrate.
2. Variants of infiltrates (size, quantity, shape, density, localization, connection with the root of the lung).
3. Clinical semiotics of inflammatory (pneumonic) infiltrate.
4. Clinical semiotics of tuberculous pulmonary infiltrate.
5. Clinical semiotics of disseminated pulmonary infiltrate.
6. Clinical semiotics of tumor pulmonary infiltrate.
7. Name the diagnostic methods that allow you to verify the etiology and nature of the pulmonary infiltrate.
8. Tactics of management of patients with pneumonic infiltrate.
9. Tactics of managing patients with tumor infiltrate.
10. Tactics of managing patients with disseminated pulmonary infiltrate.
11. Indicate the main principles of determining the prognosis and working capacity for a patient with hypertension.

Practical tasks:

1. Definition of pulmonary consolidation:

of pulmonary consolidation :

Clinical task :

The patient aged 53 years enrolled in the pulmonary department, complaining of marked weakness, constant shortness of breath, cough with a small amount of mucous sputum, increased body temperature.

The above complaints within 1.5 months. Anamnesis: 3 months before right-sided nephrectomy performed in connection with right renal cell carcinoma.

OBJECTIVE: state of medium gravity. Malnutrition. Skin pale. Peripheral lymph nodes were not enlarged. NPV 24 in 1 min. Above the Lung : percussion - the sound is shortened, auscultation - vesicular breath with hard shade, no wheezing. Heart rate/pulse 90 in 1 min. , BP 110/80 mmHg Heart sounds are muffled. The abdomen is painless, soft, right - the post-operative scar.

A manifestation of which disease is described in this clinical situation?

4. The program of examination of the patient :

5. Consultations of which specialists are needed?

6. What changes could be in the study of a CBC?

7. Possible changes in the X-ray examination of the chest cavity?

8. Create a list of diseases for differential diagnosis:

1. _____	5. _____
2. _____	6. _____
3. _____	7. _____
4. _____	8. _____

9. Make a plan of treatment for the patient.

3. Internal Medicine [Text] : textbook for English-speaking students of higher medical educational establishments / KM Amosova, O. Ya. Babak, IP Katerenchuk [et al.] ; ed.: MA Stanislavchuk, VK Sierkova; National Pirogov Memorial Medical University, Vinnytsya. - (National textbook). Pt. 2: Pulmonology. Gastroenterology. Nephrology. Diseases of the internal organs in countries with hot climate, 2019. - 359 p.
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Topic 15. Management of a patient with community-acquired pneumonia. Management of a patient with hospital-acquired pneumonia.

Purpose: to acquire communication skills and skills of clinical examination of a patient with hospital and non-hospital pneumonia ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with hospital and non-hospital pneumonia ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with hospital and non-hospital pneumonia ; to diagnose emergency conditions in patients with hospital and non-hospital pneumonia; master the tactics of providing emergency medical care to patients with hospital and non-hospital pneumonia; to be able to perform therapeutic manipulations in patients with hospital and non-hospital pneumonia .

Basic concepts: etiological agents of non-hospital and hospital-acquired pneumonia, lung abscess; modern classification of pneumonia and lung abscess; clinical manifestations and features of the course of hospital and non-hospital pneumonia, lung abscess; differential diagnosis of hospital-acquired and non-hospital-acquired pneumonia, as well as other conditions accompanied by the syndrome of compaction of lung tissue; the main methods of research that confirm the diagnosis of pneumonia, lung abscess: R g -graphy of OGK, CT, spiral CT, macro- and microscopic examination of sputum, culture of sputum, etc.; tactics of managing patients with community-acquired pneumonia depending on the category. The main groups of antibiotics that are used in different degrees of severity. Principles of differential treatment. Indications for transferring patients to the intensive care unit; treatment of hospital-acquired pneumonia depending on the possible causative agent or its association. Antibiotic therapy of hospital pneumonia. Indications for transferring patients to the intensive care unit; treatment of acute and chronic lung abscess. Indications for operative treatment; primary and secondary prevention of pneumonia and lung abscess.

PLAN

Theoretical questions:

1. Definition of the concept of "nosocomial" pneumonia, classification.
- 2 . Actual pathogens of nosocomial pneumonia.
3. Sources of infection in the hospital. The concept of "ventilator-associated" pneumonia.
4. Clinical semiotics of nosocomial pneumonia.
- 5 . Laboratory criteria of nosocomial pneumonia.
6. X-ray criteria of nosocomial pneumonia.
- 7 . Standard treatment of nosocomial pneumonia.
8. Complications of nosocomial pneumonia.
9. Pathogenetic treatment of nosocomial pneumonia.
10. Criteria of treatment effectiveness. Prevention.

Practical tasks:

- 1 . Fill in the classification of pneumonia and criteria:

	Types of pneumonia	Criteria

1	Community-acquired pneumonia (CAP)	
2		
3		
4		

2. Which scoring systems are used to assess the severity of community-acquired pneumonia?

- 1) _____
 2) _____

3. Fill in the table is not the differential diagnosis of community-acquired pneumonia:

Clinical data			Diagnostics	
Disease	Anamnesis	Physical exam	ECG	X-Ray
Pulmonary embolism				
Acute LV failure				
Lung cancer				
TB				

4. Fill in the table:

Antibacterial drug of choice for the treatment of nosocomial pneumonia:

Etiology	Antibiotic groups
<i>S. pneumoniae</i>	
<i>Haemophilus influenzae</i>	
<i>Staphylococcus aureus</i>	
<i>Klebsiella pneumoniae</i>	
<i>M. pneumoniae</i>	

5. Clinical task:

You called for a consultation with a 52-year-old patient who underwent laparoscopic cholecystectomy. After 6 days after the operation the patient's condition deteriorated sharply - there was a dry cough, increased body temperature to 39.4°C. Objectively: on the left lungs vesicular breathing, no wheezing. Right at the bottom and sides of the - dullness, auscultation there - hard breathing, multiple small-caliber wheezing, crepitations at the height of an inspiration. Heart rate / pulse at 98 1 min. BP 145/95 mm. Hg. Tones rhythmic, sonorous, noise no heart. The liver is not increased.

What disease could cause deterioration of the patient?

4. What are the instrumental and laboratory examination methods you assign and for what purpose?

Instrumental:

Laboratory:

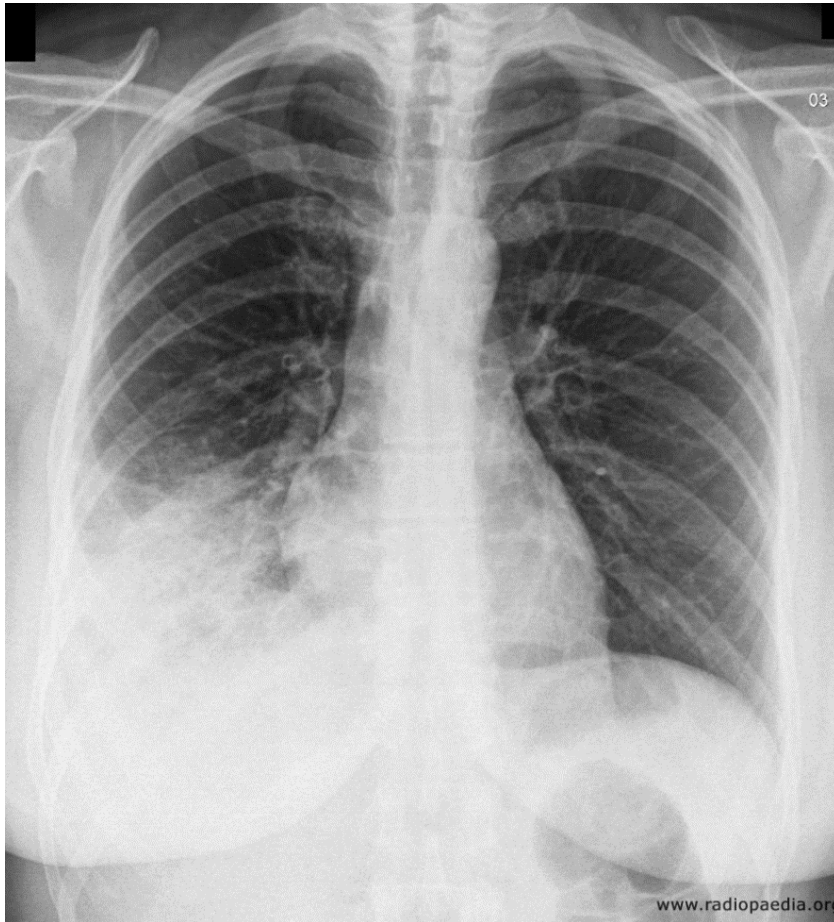
5. General blood count

Indicator	Result	Normal	Indicator	Result	Normal
Erythrocytes	$3.2 \cdot 10^{12}$ /l	3.9-5.0 T/l	eos.	2	0-6%
Hb	110 g/l	120-160 g/l	stabs	11	0-4%
Leukocytes	14.6 g/l	4.0-9.0 G/l	segs	70	45-70%

ESR	42 mm/h	1-15 mm/h	Lymphocytes	12	16-45%
CI	1.03	0.85-1.15	Monocytes	5	4-10%

Characterize the analysis given:

6. X-ray of the patient:



Give a description of X-ray:

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Topic 16. Management of a patient with hemoptysis. Management of a patient with respiratory failure.

Purpose: to acquire communication skills and clinical examination skills of a patient with hemoptysis and respiratory failure; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with hemoptysis and respiratory failure; master the principles of treatment, recommendations for lifestyle changes in managing patients with hemoptysis and respiratory failure; diagnose emergency conditions in patients with hemoptysis and respiratory failure; master the tactics of providing emergency medical care to patients with hemoptysis and respiratory failure; to be able to perform therapeutic manipulations in patients with hemoptysis and respiratory failure.

Basic concepts: definition of the concept; differences in hemoptysis, pulmonary bleeding, bleeding from the upper respiratory tract; etiology of bleeding from the respiratory tract; clinic of bleeding from the respiratory tract; differential signs of pulmonary bleeding and bloody vomiting; features of hemoptysis with various causes of its occurrence; diagnosis of pulmonary bleeding; tactics of managing a patient with pulmonary bleeding; hemostatic therapy (medicated and non-medicated) for pulmonary bleeding.

PLAN

Theoretical questions:

1. Define hemoptysis and pulmonary hemorrhage and respiratory failure.
2. Etiology and pathogenesis of hemoptysis and pulmonary bleeding and respiratory failure.
3. Classification of pulmonary bleeding and respiratory failure.
4. Clinic of hemoptysis and pulmonary bleeding and respiratory failure.
5. Carry out a differential diagnosis of the main diseases that cause hemoptysis, pulmonary bleeding and respiratory failure.
6. What are the main methods of diagnosing pulmonary bleeding and respiratory failure.
7. Analyze and give an interpretation to changes in the data of laboratory and instrumental research methods.
8. Specify the main stages of treatment of patients with hemoptysis and pulmonary bleeding, respiratory failure.
9. What is the algorithm for providing emergency care to patients with pulmonary bleeding and respiratory failure.
10. What are the prevention and prognosis in this category of patients.

Practical tasks:

1. Give the definition of:
Hemoptysis –
-
-

Pulmonary hemorrhage -

Bleeding from the upper respiratory tract (epistaxis) -

Respiratory failure

2. What are the distinctive features of pulmonary hemorrhage and bloody vomiting ?

3. Which investigations are most useful in the diagnosis of chronic cough?

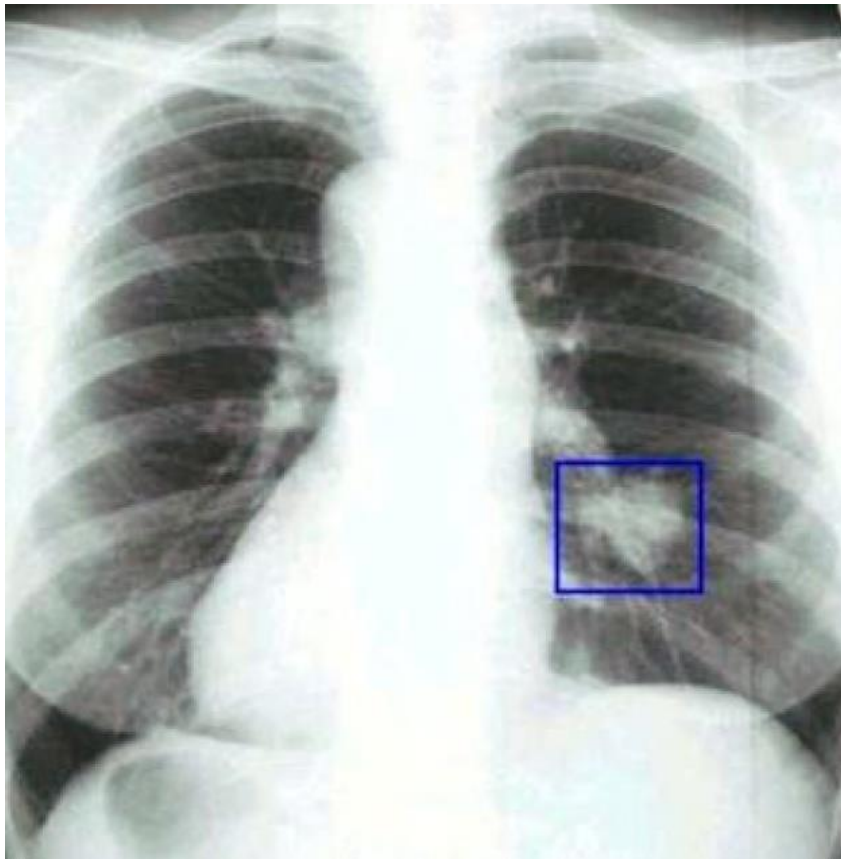
Clinical task:

1) Patient, 65 years old, was admitted to the emergency department with complaints about the discharge of blood stream out of the mouth when coughing. No other complaints. The bleeding started 40 min., ago after physical work associated with heavy lifting. Patient does not consider himself as sick. In history - pneumonia 15 years ago. 40 years ago he took part in the war shooting, was wounded in the thigh, forearm, thorax (the blind wound).

Objectively: pale skin, sweating. RR 22 in 1 min. Over the lungs: percussion - clear lung sounds, auscultation - vesicular breathing, in the right lower parts - rales. Heart rate/pulse 98 in 1 min, BP 130/80 mm Hg. Heart tones are muffled, rhythmic. The abdomen is soft, painless. Liver and spleen are not palpable. On the X-rays of the chest cavity intense shade dimensions 0.5 x 1.5 cm in the projection of the middle lobe of the right lung are found. The patient remembered that in the hospital where he was treated for wounds, told him about the shard. For 40 years it didn't bother him.

Questions: What is the possible cause of pulmonary hemorrhage? Formulate a preliminary diagnosis. What investigation should be done immediately? The program of intensive care management of pulmonary hemorrhage.

2) The patient, 68 years old, was brought to the emergency department by ambulance with pulmonary hemorrhage. X-ray was performed. Give your conclusion.



5. Evaluate the X-ray picture

Patient, 49 years old. Recently noted the loss of weight of 10 kg, night sweats, low-grade fever, cough for three months .



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Topic 17. Management of a patient with fever of unknown origin. Damage to organs and systems during HIV infection.

Purpose: to acquire communication skills and skills of clinical examination of a patient with fever of unknown origin, damage to organs and systems due to HIV infection ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with fever of unknown origin, damage to organs and systems in HIV infection ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with fever of unknown origin, damage to organs and systems in HIV infection ; to diagnose emergency conditions in patients with fever of unknown origin, damage to organs and systems due to HIV infection; master the tactics of providing emergency medical care to patients with fever of unknown origin, damage to organs and systems in HIV infection; to be able to perform therapeutic manipulations in patients with fever of unknown origin, damage to organs and systems due to HIV infection.

Basic concepts: etiology, pathogenesis and pathomorphology of HIV infection; clinical classification of HIV infection and AIDS: nature of the course, stages, clinical and morphological characteristics of the lesion; clinical manifestations of HIV infection and AIDS depending on the course and stage of the disease; diagnostic significance of additional research methods (general clinical, biochemical, instrumental); diagnostic criteria for HIV infection and AIDS; principles of treatment of HIV infection and AIDS, groups of drugs used and tactics of their use.

PLAN

Theoretical questions:

1. Classification of HIV infection in adults.

2. List the ways of transmission of HIV infection.

3. Describe the clinical picture in adults with HIV infection.

4. List opportunistic infections in patients with HIV infection. Diagnosis of clinical manifestations

of HIV-associated infections.

5. Damage to respiratory organs in HIV infection.
6. Damage to the alimentary canal in HIV infection.
7. Describe hematological changes in patients with HIV infection.
8. Describe the methods of laboratory diagnosis of HIV infection.
9. Principles of antiretroviral therapy.
10. Describe the measures for the prevention of HIV infection. Prevention of HIV infection of medical personnel.

Practical tasks:

1. Add the criteria in the definition of fever of unknown origin:

- Raise of patient temperature _____°C (_____°F) and up ;
- Duration of fever _____ and more or periodic temperature rises during this period.
- Uncertainty of the diagnosis after examination by conventional (routine) methods .

2. Add in parentheses transcript classification fever of unknown origin

There are several options course of fever of unknown origin :

- Classic (_____);
- Nosocomial (fever appears in patients admitted to hospital and received intensive care, after 2 or more days after admission)
- Neutropenic (_____).
- HIV associated (_____).

3. Append main types of pathologies involving FUO

- Generalized or local infectious inflammatory processes - 30-50% of all FUO ;
- .
- .
- .
- .

4. What are the initial investigations for patients with FUO :

- CBC

-
-
-
-
-

5. What are the risk factors for possible exposure to HIV:

- Unprotected sexual intercourse
- _____
- _____
- _____
- _____
- _____

6. Describe the 3 Categories of HIV:

HIV infection Category A or AIDS-defining conditions is

Category B is HIV infection with symptoms that are directly attributable to HIV infection (or a defect in T-cell-mediated immunity) or that are complicated by HIV infection. These include the following:

- Oropharyngeal candidiasis (thrush)

Category C is HIV infection with

7 . What tests are performed following the initial diagnosis of HIV infection?

8 . HIV post-exposure prophylaxis duration for _____ days of 2 or _____ antiretroviral agents started within _____ hours are available.

9 . Patient N. is a sex worker, write the regiments for HIV pre-exposure prophylaxis: _____

10 . What are the guidelines for initiation of antiretroviral therapy for HIV infection?

- 1) _____
 - 2) _____
 - 3) _____
 - 4) _____
-

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Topic 18. Management of a patient with gastric dyspepsia

Purpose: to acquire communication skills and skills of clinical examination of a patient with gastric dyspepsia ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with gastric dyspepsia ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with gastric dyspepsia ; diagnose emergency conditions in patients with gastric dyspepsia; master the tactics of providing emergency medical care to patients with gastric dyspepsia; to be able to perform therapeutic manipulations in patients with gastric dyspepsia.

Basic concepts:diagnostic criteria for chronic gastritis, peptic ulcer disease, gastric cancer, functional gastric diseases; pathogenesis, clinical symptoms of gastric dyspepsia; clinical and morphological forms of helicobacter infection (latent form, acute and chronic gastritis, gastroduodenitis, peptic ulcer and stomach cancer); basic principles and methods of treatment for these diseases; basic principles of emergency care for gastrointestinal diseases; principles of primary and secondary prevention of the above diseases.

PLAN

Theoretical questions:

1. List the main symptoms of gastric dyspepsia syndrome.
2. Describe the features of gastric dyspepsia syndrome in chronic gastritis, peptic ulcer disease, gastric cancer and functional gastric diseases.
3. List the main types and variants of gastric dyspepsia syndrome.
4. List the factors contributing to the spread of Helicobacter infection, the mechanism of persistence of N. pylori in the mucous membrane.
5. Describe the features of clinical and morphological forms of N. pylori.
6. Name the forms of chronic gastritis.
7. List the pathogenetic mechanisms of ulcer formation.
8. Give a protocol for the treatment of a patient with an ulcer.
9. What is double and triple therapy for N. pylori eradication.
10. List the types of supportive antireflux therapy.

Practical tasks:

1. Fill in empty cells in the table:

Classification of dyspepsia causes	
<i>Organic dyspepsia</i>	<i>Functional (non-ulcer) dyspepsia</i>

2. Fill the table:

The new Rome IV classification (2016) sub-divides functional dyspepsia into 3 categories:

No	Type of disease	Main symptoms
1	Post-prandial distress syndrome (PDS)	
2	Epigastric pain syndrome (EPS)	
3	Overlapping PDS and EPS	

3. Make a plan for patient investigation with functional gastric dyspepsia:

1. Objective investigation : _____

2. Laboratory methods:

- *obligatory*: _____

- *additional*: _____

- _____

- Instrumental methods :

- *mandatory*: _____

- *additional* : _____

4. List of etiological factors of chronic gastritis:

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

5. Fill in the table with the list of drugs:

Omeprazole, Pantoprazole, Ranitidine, Almagel, Domperidone, Famotidine, Rabeprozol, Metoclopramide, Domperidone.

Antisecretory drugs	H2 - histamine blockers	Antacids	Prokinetics

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Topic 19. Management of a patient with chronic diarrheal syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with diarrhea syndrome ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with diarrheal syndrome ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with diarrheal syndrome ; to diagnose emergency conditions in patients with diarrheal syndrome; master the tactics of providing emergency medical care to patients with diarrheal syndrome; to be able to perform therapeutic manipulations in patients with diarrheal syndrome.

Basic concepts: concept of chronic diarrheal syndrome; basics of pathogenesis; classification of clinical forms of these diseases; peculiarities of the course of intestinal infections depending on the clinical form and type of pathogen; main clinical manifestations of these diseases; possible complications and the timing of their appearance; modern methods of diagnosis of chronic diarrheal syndrome; tactics of managing patients in case of emergencies.

PLAN

Theoretical questions:

1. Definition of diarrheal syndrome.
2. Classification of chronic diarrhea.
3. Clinical-laboratory and instrumental diagnosis of diarrheal syndrome.

4. Diagnosis and treatment of malabsorption and maldigestion syndromes .
5. Differential diagnosis of diarrheal syndrome
6. Features of the course and treatment of nonspecific ulcerative colitis and Crohn's disease.
7. Symptoms of anxiety in diarrheal syndrome.
8. With standards treatment and management patients with diarrhea syndrome.
9. Primary and secondary prevention of diarrhea syndrome. Forecast and performance.

Practical tasks :

1. Give a definition of chronic diarrhea :

Chronic diarrhea - is the appearance of a liquid or unformed stools over _____ times a day for _____ weeks or more.

2. The most common causes of chronic diarrhea are the following diseases:

1. _____ 5.

2. _____ 6.

3. _____ 7.

4. _____ 8.

2. Specify the main features in malabsorption and in inflammatory bowel disease:

	Malabsorption / maldigestion	Inflammatory bowel disease
Stool frequency		
Stool characteristics (as described by the patient)		
The facts of the patient's history		
Objective evidence when examining the gastrointestinal tract		

3. List the "alarm symptoms", which highly probably, exclude irritable bowel syndrome (functional dyspepsia) and require active diagnostic search:

1. _____ 2.

3. _____ 4.

4. Clinical task:

Patient S., 58 years old, complaining of diarrhea that occurs during the day and at night during the last month, nausea, periodically - temperature, weight loss of 5 kg in 3 months. In history - prostate cancer, several courses of radiation therapy two years ago. Three months ago took antibiotics for two weeks after tooth extraction. Two months ago - traveled to Thailand. OBJECTIVE: some skin paleness, aphthae on the oral mucosa, tenderness in all parts of the abdomen.

What conditions must be differentiated?

1. _____

2. _____

3. _____

5. _____

6. _____
7. _____
8. _____
9. _____

5. What instrumental and laboratory examination methods should you assign and for what purpose?

Instrumental:

Laboratory:

6. Patient S's blood test:

Parameters	Result	Normal	Parameters	Result	Normal
Ed blood cells	$3.2 \times 10^{12} / \text{L}$	3.9-5.0 T/ L	C-RP	4.0	0-6 mg / mL
Hemoglobin	92 g / L	120-160 g / L	TSH	2.5 U/L	0.27-4.20 U/L
White blood cells	10.2 G / L	4.0-9.0 G / L	T4	13.8 pmol / L	9-19 pmol / L
ESR	17 mm / h	1-15 mm / h	Anib.toHIV	neg.	neg.

Evaluate the patient's blood:

Coprological examination of patient S:

Parameters	Result	Normal	Parameters	Result	Normal
Ph.D	sl.alkal .	sl.alkal . - neutral _	<i>Candida alb.</i>	Absent	Absent
Mucus	++	Absent	<i>Proteus spp.</i>	10^3	$0-10^4$
Unbound fat	Absent	Absent	Protozoa _	Absent	Absent
Enterococci	10^6	$10^5 - 10^6$	T apewormeggs	Absent	Absent
Bifidobacteria	10^3	$0-10^3$	<i>C. _ difficile</i> toxin	negative	negative

Evaluate patient's coprogram:

7. Colonoscopy results of the patient:

Areas of mucosal changes like "cobblestones " were identified, multiple linear stellate ulcers and scarring in the sigmoid colon, ascending colon and terminal ileum.

Final clinical diagnosis:

8. Write treatment plan for patient S:

Nonpharmacologic:

Pharmacology:

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Topic 20. Management of a patient with jaundice.

Purpose: to acquire communication skills and skills of clinical examination of a patient with jaundice ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with jaundice ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with jaundice ; to diagnose emergency conditions in patients with jaundice; master the tactics of providing emergency medical care to patients with jaundice; to be able to perform therapeutic manipulations in patients with jaundice.

Basic concepts: the level and exchange of bile pigments are normal; ways of its violation in various types of jaundice; the volume of laboratory and instrumental research methods necessary for the differential diagnosis of diseases accompanied by subhepatic, hepatic and suprahepatic jaundice; patient management tactics depending on the cause; modern standards of treatment; basics of primary and secondary prevention.

PLAN

Theoretical questions:

1. Name the main types of jaundice.

2. Name the criteria of mechanical jaundice.
3. Name the syndromes related to functional hyperbilirubinemia.
4. Define the criteria of hemolytic jaundice.
5. Make a differential diagnosis between parenchymal and mechanical jaundice.
6. Name the main stages of bilirubin metabolism in the body.
7. Determine the differences between false and true jaundice.
8. Name the main diseases belonging to the category: hereditary deficiency of the enzyme glucuronyltransferase.
9. Name the main instrumental methods of liver research for the differential diagnosis of jaundice.
10. Name the main laboratory indicators of biochemical blood research related to cytolytic and cholestatic tests.

Practical tasks:

1. Give classification of jaundice based on mechanism of violation of bilirubin exchange

- 1)
- 2)
- 3)
- 4)

2. Which forms of benign hyperbilirubinaemia do you know?

- 1)
- 2)
- 3)
- 4)

3. Fill the table with differential diagnosis jaundice :

Symptoms	Suprahepatic	Hepatic		
	Hemolytic	Hepatocellular	Cholestatic	Enzymopathic
Mechanism of development				
Age				
Anamnesis				
Pain				
Fever				
Itchy skin				
Liver				
Spleen				
Level of bilirubin, bilirubin fraction				
Pigment in feces				
ALT activity				
Akalaine phosphatase				

Cholesterol				
Bilirubinuria				

4. Which findings may suggest a chronic alcoholism etiology for conjugated hyperbilirubinemia?

1) Carbohydrate deficient transferrin (CDT)

2) _____

3) _____

4) _____

—

Clinical task №1

Patient F. _ 55 yoadmitted to the clinic with complaints of yellow skin and sclera , itchy skin , feeling of tenderness in RUQ and epigastric region , general weakness , dark urine .

Fell sick 3 days ago , when first suddenly appeared severe pain in RUQ and epigastrium with radiation to shoulder . Attack continued for 2 h , stopped after IV injection of drotaverine . Same attack repeated 24 h ago . He had nausea, vomiting and a high temperature of 38° C . The attack continued for 8 hours . On the next day appear yellow colored skin and sclera and itchy skin ; stool got discolored . Objective : skin and sclera of yellow color . Pulse 78 per minute . Arterial BP 140/80 mmHg . Tongue moist . An abdomen is soft on palpation without pain . Liver and gallbladder not palpated . Signs: Murphy, Ortner, Blumberg are negative .

Lab indicators : general bilirubin 149 mkmol / l , direct bilirubin 97 mkmol / l , indirect bilirubin 52 mmol / l ; A l A T 415.3 U / L , A s A T 162.2 U / L ; alkaline phosphatase 109.6 units . act./l . _ _

Questions :

1. What cause of jaundice do you suspect ?

2. Which diseases to make differential diagnosis with ?

3. Which additional methodshelp in specifying diagnosis?

List of recommended literature:

Basic literature:

- Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition - (August 13, 2021). - 736 pages
- Pocket Medicine: The Massachusetts General Hospital Handbook of Internal Medicine / 007 edition (12 Sept. 2019). - 272 pages
- Davidson's Principles and Practice of Medicine: Enhanced Digital Version Included / Elsevier; 23rd edition (25 April 2018). - 1440 pages

Additional literature:

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- <http://ard.bmj.com>
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Topic 21. Management of a patient with ascites. Management of a patient with portal hypertension.

Purpose: to acquire communication skills and clinical examination skills of a patient with ascites and portal hypertension ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with ascites and portal hypertension ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with ascites and portal hypertension ; diagnose emergency conditions in patients with ascites and portal hypertension ; master the tactics of providing emergency medical care to patients with ascites and portal hypertension ; to be able to perform therapeutic manipulations in patients with ascites and portal hypertension .

Basic concepts: causes and clinical manifestations of portal hypertension and ascites; the volume of laboratory and instrumental research methods necessary for the differential diagnosis of diseases accompanied by hepatomegaly, portal hypertension and ascites; patient management tactics depending on the cause; modern standards of treatment; basics of prevention of these complications.

PLAN

Theoretical questions:

- 1) Pathogenetic classification of diseases accompanied by ascites.
- 2) Differential diagnosis of ascites in diseases of the abdominal cavity, malignant neoplasms, heart and kidney failure.
- 3) Examination plan for patients with ascites.
- 4) Instrumental and laboratory methods of research in ascites. Examination of ascitic fluid.
- 5) Patient management tactics depending on the causes of ascites, differentiated therapy.
- 6) Standards of treatment of patients with ascites.
- 7) Principles of diuretic therapy for ascites.
- 8) Indications for laparocentesis and surgical treatment.
- 9) Primary and secondary prevention of ascites.
- 10) Prognosis and performance in ascites.
- 11) Differential diagnosis of conditions leading to portal hypertension
- 12) Classification of portal hypertension.
- 13) Examination plan for patients with portal hypertension
- 14) Methods of assessment of portal hypertension (FEGDS, ultrasound, portal dopplerography blood flow, splenoportography, CT and MRI - Angiography of portal blood flow)
- 15) Patient management tactics depending on the causes of portal hypertension, differentiated therapy
- 16) Standards of treatment of portal hypertension
- 17) Indications for endoscopic and surgical methods of treatment (Blackmore probe, clipping and coagulation of esophageal veins, TIPS and other shunt operations,

liver transplant)

- 18) Primary and secondary prevention of portal hypertension
- 19) Prognosis and performance in portal hypertension
- 20) In which diseases is the syndrome of portal hypertension observed

Practical tasks:

1. Describe the main causes of ascites, filling the table:

Main causes of ascites		
Frequent	Not frequent	Rare

2. Fill in the table:

Composition of ascitic fluid in various diseases

Disease	Ascitic fluid			Cell count		Other tests
	Color	Density	Protein, g/L	RBC, > 10,000 in 1 mL	WBC, in 1 mL	
Liver cirrhosis						
Tumor						
Tuberculous peritonitis						
Purulent peritonitis						
Congestive heart failure						
Nephrosis						
Pancreatic ascites (pancreatitis)						

3. Complete the treatment regimen of ascites:

1. _____
2. _____
3. _____

4. Surgical treatment:

4. Fill in the table:

No	Clinical symptoms of portal hypertension
1	Splenomegaly
2	
3	
4	
5	
6	
7	

5. Describe the signs of portosystemic collateral formation:

1) _____

2) _____

3) _____

6. List the measures to prevent bleeding.

Pharmacotherapy: _____

Surgery: _____

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- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 22. Management of a patient with hepatomegaly and hepatolienal syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with hepatomegaly, hepatolienal syndrome ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with hepatomegaly, hepatolienal syndrome ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with hepatomegaly, hepatolienal syndrome ; to diagnose emergency conditions in patients with hepatomegaly, hepatolienal syndrome; master the tactics of providing emergency medical care to patients with hepatomegaly, hepatolienal syndrome; to be able to perform therapeutic manipulations in patients with hepatomegaly, hepatolienal syndrome.

Basic concepts: definition of hepatolienal syndrome; etiology, pathogenesis of HLS; liver diseases (acute hepatitis, chronic hepatitis, liver cirrhosis, liver cancer, benign tumors, liver cysts, echinococcus, tuberculosis, abscess); diseases of the hematopoietic system (acute leukemia, chronic myeloid leukemia, chronic lymphocytic leukemia, lymphogranulomatosis, lymphomas); storage diseases (hemochromatosis, hepatolenticular degeneration, amyloidosis); diseases of the cardiovascular system (insufficiency of blood circulation, constrictive pericarditis); clinical manifestations; mandatory laboratory and instrumental methods of diagnosis of diseases with HLS; additional research methods according to indications: computer tomography, liver biopsy; principles of treatment of diseases with HLS.

PLAN

Theoretical questions:

1. Definition of hepatomegaly and splenomegaly
2. Classification of diseases accompanied by hepato- and hepato-splenomegaly. Differential diagnosis.
3. Examination of patients with hepato- and splenomegaly
4. Basic biochemical syndromes in hepatitis and cirrhosis
5. The main principles of treatment depending on the causes of hepatoileal syndrome or hepatomegaly
6. Hepatoprotectors and antiviral therapy
7. Standards of therapy of patients with hepatoileinal syndrome
8. Indications for surgical treatment
9. Primary and secondary prevention of diseases with an enlarged liver and spleen
10. Prognosis and working capacity in hepatolienal syndrome and hepatomegaly

Practical tasks:

1. List the group of diseases that occur with hepatosplenomegaly:
 - 1)
 - 2)
 - 3)
 - 4)
 - 5)

2. For the screening (provisional) assessment of the nature hepatolienal syndrome using the following set of mandatory (desirable) research methods:

1) Methods of general clinical laboratory diagnostics:

2) Instrumental methods

3) Histomorphological methods

3. Clinical task №1.

A patient with hepatolienal syndrome was performed ultrasound of the liver and spleen: liver high echo-density, non-uniform coarse-grained structure, with attenuation of the echo signal to the diaphragm. When color Doppler mapping of peripheral vascular pattern is unified significantly by the type of symptom "chopped off a tree." The maximum vertical size of the right lobe in the midclavicular line is 16 cm, 8 cm left lobe. Volumetric formations there. Gallbladder 4.7 cm by 2.2 cm, wall slightly compacted to a thickness of 2 mm, content uniformity. Intrahepatic bile ducts are not dilated, the walls are slightly compacted. Intrahepatic vein normal size, the amount of the three veins of less than 12 mm. Gate Vienna convoluted, thickened wall and sealed with a diameter in the area of the gate 15 mm, Doppler study of portal blood flow reduction in blood flow, the signs of discharge flow in splenic and superior mesenteric veins. Choledoch 4 mm wall are not changed, no calculi in the lumen. Lower hollow Vienna 17 mm spadenie on inspiration and 50%. Spleen homogeneous, high echogenicity, spleen square cut on the gate level 104 cm sq., Splenic index of 42 units., Splenic vein diameter of 10 mm.

Questions:

1) Give an opinion on ultrasound, assessing all parameters.

2) Plan for additional studies

3) What are the reasons hepatolienal syndrome allowed us to exclude this ultrasound?

4) further management of the patient.

4. Clinical task №2

Patient D., 62 years old, musician, complains of pain and feeling of heaviness in the right upper quadrant, nausea, considerable general weakness, muscle atrophy. OBJECTIVE: asthenic physique, yellowness of the skin and visible mucous, Dupuytren's contracture, gynecomastia, testicular atrophy, liver Kurlov 15 × 13 × 10 cm, thick edge, spleen × 12 9 cm thick.

1) The most likely diagnosis?

2) With what diseases it is necessary to carry out a differential diagnosis?

3) What study gives the most accurate diagnosis confirmation?

5. Clinical task №3

Patient with hepatosplenomegaly held blood analysis: Hemoglobin - 114 g / l, erythrocytes - 3.85 T / L, the CPU - 0.9 Leukocytes - 22.7 g / l Platelets - 85 g / l, ESR - 17 mm / h Leukocyte formula: E - 1 %, P - 1% C - 15% A - 80%, M - 3%, in the blood smear shadows Botkin, basket cells.

1) What is the most likely cause of hepatosplenomegaly in this patient?

2) What are the methods of additional research needed to confirm the diagnosis?

3) What place in the treatment of the patient hepatoprotectors will take?

6. Clinical task №4

The patient with Banti's syndrome and a slight increase in transaminases and bilirubin had a blood test for markers of viral hepatitis. The following results:

Anti-HAV IgM – negative;	Anti-HBc IgG - positive;
Anti-HAV IgG – doubtful;	HBV DNA – positive – 56,800 viral particles per mL
HAV RNA – negative;	Anti-HCV IgM – negative
HBsAg – positive;	Anti-HCV IgG – positive;
Anti-HBs– positive;	Anti-HCV NS4 - negative
HBeAg – positive;	HCV RNA is negative
Anti-HBe– positive;	Anti-HDV - negative
Anti-HBc IgM - positive;	HDV DNA – positive – 7500 viral particles per mL

Questions:

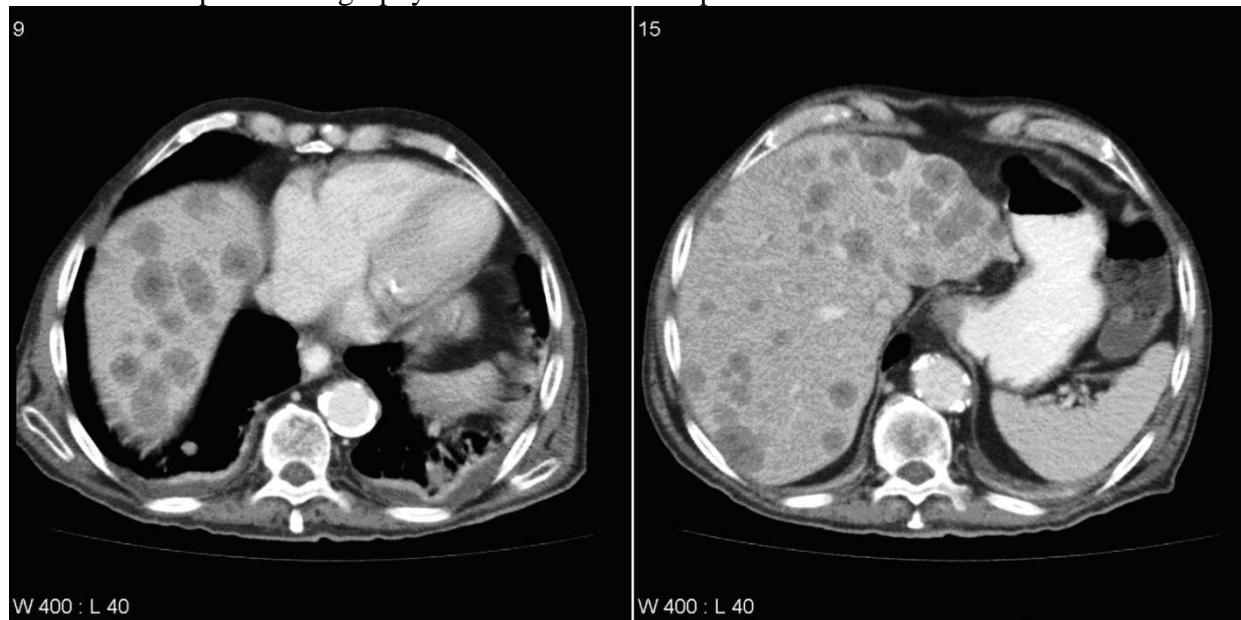
1) Give the interpretation of the results

2) How to change your ideas about the nature of the disease makes it possible for a history of data - a 7-year-old was in the infectious diseases hospital with the disease Botkin, about 10 years ago, the patient's husband had been ill with gonorrhea, and hepatitis, and a half months ago, was a blood transfusion after which the state of health has deteriorated?

3) Make a plan of remedial measures.

7. Clinical task No. 5

Patient D., 73 years old, complains about lack of appetite, occasional black chair, progressive weight loss, heaviness in the right upper quadrant. On examination: low power, skin and mucous bit of jaundice, liver and spleen are moderately enlarged, palpation of the liver edge uneven slightly sensitive. Computer tomography of the abdomen was performed.



Questions:

1) Give the interpretation of CT scans.

2) What studies can confirm the diagnosis?

3) Your idea of the prognosis and treatment of the patient.

List of recommended literature:

Basic literature:

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- <http://ard.bmj.com>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 23. Management of a patient with urinary syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with urinary syndrome ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with urinary syndrome ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with urinary syndrome ; to diagnose emergency conditions in patients with urinary syndrome; master the tactics of providing emergency medical care to patients with urinary syndrome; to be able to perform therapeutic manipulations in patients with urinary syndrome.

Basic concepts: etiology, pathogenesis, pathomorphology, clinical features of the course of diseases accompanied by the development of urinary syndrome (acute and chronic glomerulonephritis, urolithiasis, pyelonephritis, heart failure with "congestive kidney", diabetic nephropathy, hypernephroma, cystitis, bladder cancer , hemorrhagic vasculitis); laboratory-instrumental signs of the diseases listed above; formulation of the preliminary diagnosis of the disease in the supervised patient; an examination plan for the monitored patient, aimed at clarifying the diagnosis and carrying out a differential diagnosis for the leading urinary syndrome; interpretation of the results of laboratory and instrumental studies in a supervised patient;

peculiarities of urinary syndrome in patients; tactics of treatment of a patient with urinary syndrome and evaluation of the prognosis of the disease.

PLAN

Theoretical questions:

- 1) Define urinary syndrome
- 2) Characterization of components of urinary syndrome.
- 3) Make a differential diagnosis for hematuria, leukocyturia, and proteinuria.
- 4) Tactics of managing a patient with urinary syndrome depending on the cause.
- 5) Causes of urinary syndrome in diseases of the urinary tract.
- 6) The role of laboratory examination methods for clarifying the diagnosis of urinary syndrome (general and biochemical tests, urine tests according to Nechyporenko, Zemnytsky, etc.).
- 7) The role of instrumental diagnostic methods for clarifying the diagnosis of urinary syndrome (ultrasound, X-ray, ECG, etc.).
- 8) Basic principles of drug and non-drug treatment of a patient with Urinary Syndrome depending on the cause.
- 9) Primary and secondary prevention.
- 10) Prognosis and work capacity in patients with Urinary syndrome.

Practical tasks:

1. What are the signs of kidney damage combined with the concept of uric syndrome:

- 1)
- 2)
- 3)
- 4)

2. The main types of proteinuria:

- 1)
- 2)
- 3)
- 4)
- 5)

3. What groups are divided into the disease underlying hematuria?

- 1)
- 2)
- 3)

4. Types of leukocyturia:

- 1)
- 2)

5. What research methods are needed for the diagnosis and choice of appropriate treatment with bladder syndrome?

1) Laboratory:

2) Instrumental:

3) Histomorphological:

4) The microbiological, immunological, molecular-genetic:

6. Clinical task №1

At the reception at the family doctor the patient B. 22 years. He complains of weakness, malaise, headache, swelling of the eyelids, pulling back pain on both sides, raising the temperature to 37.7 ° C, the appearance of the color of urine "meat slops". Associates with his state transferred about a week ago on his feet sore throat. Objectively: pale swelling of the eyelids and face, pasty legs and feet. Borders of the heart are not changed, the rhythmic activity of the heart. Blood pressure - 160/95 mm Hg. Art. Heart rate - 85 beats / min. In the lungs vesicular breathing, no wheezing. Abdomen soft painless, the liver and spleen are not enlarged. Symptom effleurage in the lumbar region slightly positive. On examination: OAK: HB - 110 g / l, Er - 3.2 g / Lake. - 11.2 g / l, the formula: E - 1%, P - 5%, C - 72% A - 19%, M - 3%, ESR - 35 mm / h. OAM: the color red - brown. sp. weight - 1029, Protein - 0.65 g / ep. flat - 2-3 p.zr., Lake. - 2-4 p.zr., er. - Completely leached, hyaline cylinders - 5-8 in p.zr. Biochemistry: total bilirubin - 20.3 mmol / l, total protein - 65 g / l, glucose - 4.3 mmol / l, urea - 8.0 mmol / L, creatinine - 112 mmol / l, cholesterol - 3.8 mmol / l.

1) Highlight the main clinical syndromes

2) Put the preliminary diagnosis

3) Evaluate the results of laboratory tests

4) Describe the urinary syndrome

5) Write the necessary investigation plan

7. Clinical task №2

Patient S. 45 years complains of pain in the right lumbar region, swelling and tenderness of the right testicle, unmotivated weakness, weight loss, increased body temperature to 38-39 ° C, blood in the urine. Objectively, pale, emaciated, depressed mood. Objective data from the cardiovascular and respiratory system without deviations. Abdomen soft painless, the liver and spleen are not enlarged. Palpated significantly increased maloboleznennaya right kidney. In the study of bodies of scrotum signs right varicocele. Urine: the proportion of 1016, traces of protein, fresh red blood cells completely. MRI of retroperitoneal space:



1) Describe the urinary syndrome

2) Give the interpretation of MRI

- 3) Put the preliminary diagnosis
- 4) List the studies confirming the diagnosis
- 5) Specify the prognosis and treatment of the patient.

8. Clinical task №3

The patient, 52 years old, complains of frequent urination, pain in the lumbar region aching more on the right, low fever, turbid appearance, and sometimes red urine. From history we learned that five years ago in prison was being treated for tuberculosis. The worsening state of the last year, which binds with the nervous stress, starvation in order to reduce weight. **OBJECTIVE:** looks skinny, sunken. When the percussion field boundaries Kreniga significantly narrowed the right side, the unit auscultation crepitus in the suprascapular and interscapular region to the right, there is a shortening of percussion sounds. Borders of the heart are not changed. rhythmic activity of the heart, sounds are muffled. Blood pressure - 145/95 mm Hg HR - 1 80 min. Abdomen soft painless liver near the edge of the costal arch, the spleen is not enlarged. On palpation of the kidneys uneven slightly enlarged, more on the right. In a study of urine: urine is cloudy, pinkish in color, specific weight - 1009 Protein - 0.32 g / l to 100 leukocytes in sight, the red blood cells and fresh - 20-25 p.zr. leached - 4-5 in paragraph .zr. At microscopy of sediment with the color of Ziehl-Nielsen revealed acid-fast bacteria.

- 1) Describe the urinary syndrome
- 2) Specify the possible causes of hematuria
- 3) Write a plan of inspection

List of recommended literature:

Basic literature:

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Topic 24. Management of a patient with nephrotic syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with nephrotic syndrome ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with nephrotic syndrome ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with nephrotic syndrome ; to diagnose emergency conditions in patients with nephrotic syndrome; master the tactics of providing emergency medical care to patients with nephrotic syndrome; to be able to perform therapeutic manipulations in patients with nephrotic syndrome.

Basic concepts: main risk factors, etiology and pathogenesis of nephrotic syndrome; clinical symptomatology of nephrotic syndrome with different nosologies; methods of diagnosing nephrotic syndrome; the main syndromes of diseases, with which it is necessary to differentiate nephrotic syndrome; basic principles of differentiated treatment, prevention and rehabilitation of patients with nephrotic syndrome; principles of providing emergency care for nephrotic crises.

PLAN

Theoretical questions:

1. Define nephrotic syndrome.
5. Etiology, pathogenesis of nephrotic syndrome.
6. What diseases are accompanied by nephrotic syndrome, diagnostic criteria, differential diagnosis.
7. Clinical manifestations in diseases accompanied by nephrotic syndrome.
8. Tactics of managing a patient with nephrotic syndrome depending on the cause.
9. The role of laboratory monitoring methods for clarifying the diagnosis in nephrotic syndrome.
10. The role of instrumental diagnostic methods for clarifying the diagnosis in nephrotic syndrome.
11. Basic principles of drug and non-drug treatment of patients with nephrotic syndrome. Standards of treatment.
12. Primary and secondary prevention.
13. Prognosis and work capacity in patients with nephrotic syndrome.

Practical tasks:

1. Nephrotic syndrome - a clinical and laboratory complex of symptoms, characterized by
.....
.....
.....
.....
.....
.....
.....
2. What are the main pathogenic factors for proteinuria:
 1. Increased permeability of the glomerular filter
 - 2...
 - 3...
3. Add feature clinical data with nephrotic syndrome:

.....

4. major causes of secondary nephrotic syndrome:

- Infections (post-streptococcus, paendocarditis, secondary syphilis, mononucleosis, hepatitis B, malaria, etc ..)
- .
- .
- .
- .
- .
- .

5. Name major clinical criteria of acute and chronic kidney disease:

Acute nephritis syndrome	Chronic renal failure

6. What additional methods of investigation can be performed in systemic connective tissue diseases:

antineutrophil cytoplasm antibodies (ANCA),

.....

7. Fill in the missing links in the table "Instrumental studies"

Type of inspection	GN at the stage of diagnosis and treatment	frequency
Control blood pressure	In the presence of hypertension	
Research fund	At the stage of diagnosis	
Control of body weight	When edema	1 time in 1-2 months
	In other cases	
Electrocardiography	At the stage of diagnosis	

Ultrasound of the urinary system with pulsed Doppler	At the stage of diagnosis	
Ultrasonography of the abdomen	At the stage of diagnosis	
X-ray study of the kidneys, bones, lungs	At the stage of diagnosis	
Radionuclide studies (indirect renoangiography, dynamic and static reno-scintigraphy)	On stage at diagnosis and monitoring treatment	
fine needle aspiration	At the stage of diagnosis, until the appointment of treatment, in an unfavorable disease	

8. Fill in the table - "Scheme of prednisolone prescription in the treatment of glomerulonephritis with nephrotic syndrome"

route of administration	Average dose	test	Notices
internally	9.00- %	mg / kg / day	Normal mode
Parenteral	12.00- % 15.00- %	mg / kg / day	With a significant edema syndrome

9. Assign treatment for a patient with a diagnosis of chronic kidney disease stage 4. Polycystic kidney. Hypertension 2 degree.

.....

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- <https://cprguidelines.eu/>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>
- <http://www.oxfordmedicaleducation.com/>
- <http://ard.bmj.com>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 25. Management of a patient with chronic kidney disease.

Purpose: to acquire communication skills and skills of clinical examination of a patient with chronic kidney disease ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with chronic kidney disease ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with chronic kidney disease ; diagnose emergency conditions in patients with chronic kidney disease; master the tactics of providing emergency medical care to patients with chronic kidney disease; to be able to perform therapeutic manipulations in patients with chronic kidney disease.

Basic concepts: definition of the term chronic kidney disease (CKD); modern classification of CKD; clinical and diagnostic criteria of the main nosologies included in CKD; the main instrumental and laboratory research methods that prove the presence of CKD; principles of differential treatment of CKD, depending on the causes and stage; methods of primary and secondary prevention of CKD, prognosis.

PLAN

Theoretical questions:

1. Define the term CKD.
2. Specify the criteria for CKD.
3. Determination of the stage of CKD.
4. List the etiological factors of CKD.
5. Specify the main clinical manifestations of CKD, depending on the stage of the disease.
6. Specify the main laboratory indicators that change in a patient with CKD.
7. Specify which instrumental methods are used to examine a patient with CKD.
6. What are the possible complications of CKD?
7. List the main measures to prevent the progression of CKD
8. What are the tactics of managing a patient with stage 3-4 CKD?
9. What methods of treatment are used in patients with stage 5 CKD?
10. List the indications and contraindications for the use of the hemodialysis method.

Practical tasks:

1. Definition of chronic kidney disease:
-

2. Stage and criteria of chronic kidney disease:

1. _____
2. _____
3. _____
4. _____
5. _____

3. List the causes of chronic kidney disease:

- | | |
|----------|-----------|
| 1. _____ | 7. _____ |
| 2. _____ | 8. _____ |
| 3. _____ | 9. _____ |
| 4. _____ | 10. _____ |
| 5. _____ | 11. _____ |
| 6. _____ | 12. _____ |

4. What are the main clinical syndromes of chronic kidney disease:

1. _____
2. _____
3. _____
4. _____
5. _____

5. Clinical task №1:

At a reception at the family doctor, a 38-year-old woman with complaints of general weakness, nausea, vomiting, thirst, dry mouth, headache, dull aching pain in the lumbar region. The increase of these symptoms notes for the past 7 years. Relatives on the mother suffered from kidney disease. Objective: pale skin, dry, blood pressure 185/95 mmHg. pulse 76 in1 min. On both sides palpable enlarged nodular, moderately painful kidneys. The negative symptom Pasternatsky on both sides. The liver and spleen are not enlarged. Mild edema of legs and feet. Urine specific gravity 1006, neutral reaction, leukocytes 12- 15 insight, erythrocytes-0- 1 inthe field of view.

What is a preliminaryclinical diagnosis :

The program of examination of the patient:

6. Clinical task №2:

The nephrologist asked patient M., 42 years old, the battery attendant of a large company, for examination regarding the microhematuria in the test of urine revealed on arterial hypertension in the clinic by place of residence. During a medical examination at the age of 18 there were no changes in urine, more then 22 years of age were not surveyed. Expect 35-40 cigarettes a day. In the genus of chronic kidney disease was not. During examination: height 193 cm, weight 98 kg., there is no swelling., BP 170/110 mm Hg. The general analysis of urine: protein 2.7 g/l, specific gravity 1009, erythrocytes 40- 50 infv, leukocytes 1- 3 infv Blood analysis: Hb 85 g/l, Ht - 23%, creatinine - 0.670 mmol/l, uric acid 595 mmol /l, albumin 47 g/l, potassium 6.7 mmol/l, cholesterol 7.7 mmol/l, protein in daily urine 1.3 g. Renal ultrasound: right and left kidney decreased to 7.7 cm×4.9 cm, thickness of parenchyma 9- 10 mm.

What is a preliminaryclinical diagnosis ?

Does the patient have the indications for renal biopsy?

List the factors of accelerated progression of CKD in this patient:

What additional data should be specified?

Make a plan of treatment patient M.

Monitoring of the performance and the frequency required by the patient?

7. Answer the following questions:

1. What variant of chronic glomerulonephritis may not be accompanied by the development of chronic renal failure?

- A. Latent
- B. Hypertonic
- C. Hematuric
- D. Nephrotic
- E. Mixed

2. What test can identify the decrease of GFR in CKD?

- A. Nechiporenko test
- V. Reberg-Tareev test
- S. Test of Zymnitsky
- D. Test of Addis-Kakhovskiy
- E. Hamburg test

3. What are the antibiotics most shown in CKD? Select only the correct answers:

- A. tetracycline
- B. penicillin
- C. oxacillin;
- D. gentamicin;
- E. streptomycin.

4. What should be the calorie daily diet appointed by the patient with CKD to prevent the catabolism of proteins?

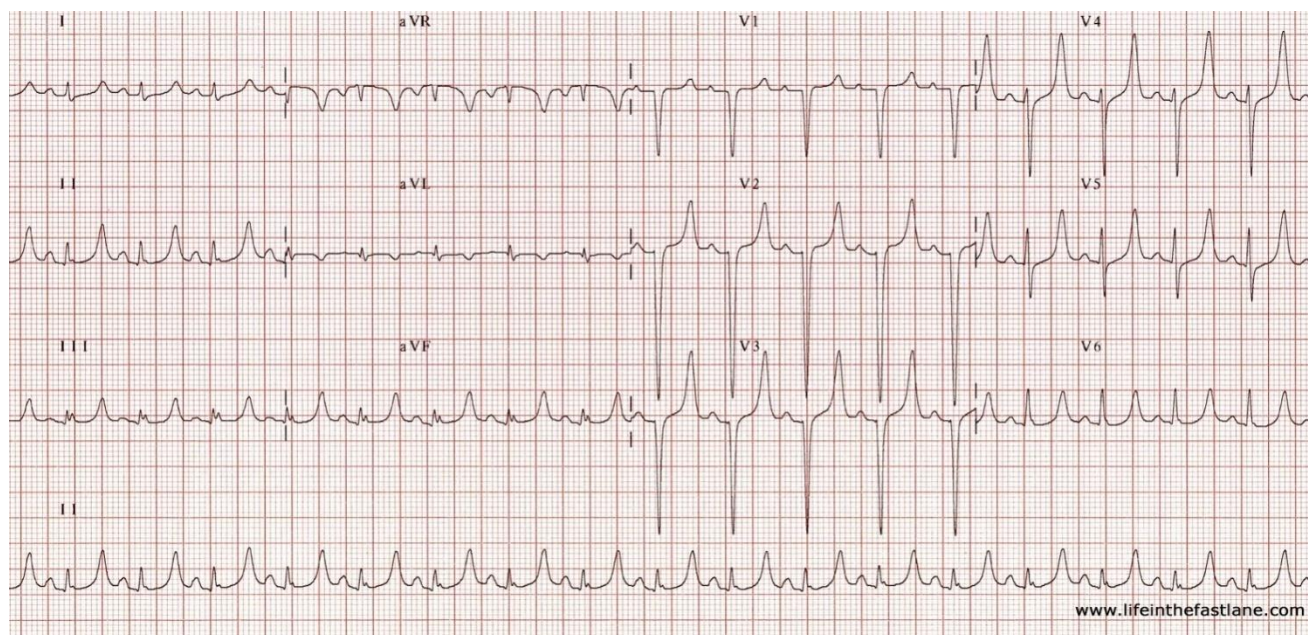
- A. 1200-1800 kcal
- V. 1800-2200 kcal
- S. 2200-2500 kcal
- D. 2500-3000 kcal
- E. 3000-3500 kcal

8. Clinical task №3:

Patient C. 36 years old, who was on hemodialysis for about 5 years, after attending a friend's birthday lost consciousness. The father of the patient died from myocardial infarction at the age of 40. It is known that at the holiday table the patient ate Greek salad, prunes with nuts in cream sauce, fruit cake, alcohol was consumed, drank cranberry juice. Was called the ambulance. Blood pressure

90/60 mmHg. Auscultation of the heart: systolic-diastolic murmur in the 4-5 intercostal space left of the sternum.

ECG of patient C.:



What is the pathology identified on the ECG? What are the ECG signs?

What is the cause of syncope in patient C.?

Does the patient have indications for thrombolysis?

On ultrasound of the heart in this patient upon admission to the hospital revealed a slight thickening of sheets of pericardium, heart chambers, the valves of the heart and the pumping function without material deviations. What do the data show an ultrasound of the heart and auscultatory picture?

What additional research is needed to execute the patient?

Make a plan of treatment of patient C.:

What is the prevention of these conditions?

List of recommended literature:

Basic literature:

- Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition - (August 13, 2021). - 736 pages
- Pocket Medicine: The Massachusetts General Hospital Handbook of Internal Medicine / 007 edition (12 Sept. 2019). - 272 pages

- Davidson's Principles and Practice of Medicine: Enhanced Digital Version Included / Elsevier; 23rd edition (25 April 2018). - 1440 pages

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Topic 26. Management of a patient with anemia.

Purpose:to acquire communication skills and skills of clinical examination of a patient with anemia ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with anemia ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with anemia ; to diagnose emergency conditions in patients with anemia; master the tactics of providing emergency medical care to patients with anemia; to be able to perform therapeutic manipulations in patients with anemia.

Basic concepts:definition of the term anemia; etiology and pathogenesis of anemia; modern classification of anemias; clinical manifestations, possible complications; basic methods of diagnosing anemias; general and dietary recommendations for patients with anemia, basic pharmaceuticals for treatment, options for supportive therapy; options for the course of the disease; terms and methods of monitoring the effectiveness of treatment.

PLAN

Theoretical questions:

- 1) Define anemia.
- 2) Give the classification of anemia according to etiology, pathogenetic mechanisms of development, as well as morphological features of erythrocytes.
- 3) Explain the differential diagnosis of hypochromic anemias.
- 4) Conduct a differential diagnosis of hypochromic anemias associated with impaired heme synthesis.
- 5) Carry out a differential diagnosis of normochromic anemias.
- 6) Define the concept of megaloblastosis and name the main causes of megaloblastic anemia.
- 7) Name the three main types of hereditary hemolytic anemias and explain the mechanisms of their formation.

- 8) Name the main laboratory tests necessary for the differential diagnosis of anemia.
- 9) Explain the basic principles of anemia therapy.
- 10) Make a differential diagnosis between hemolytic and aplastic crisis. Outline the principles of emergency situations for this crisis.
- 11) Differential diagnosis in iron-deficient and B₁₂-deficient anemias.
- 12) The main causes of iron deficiency.
- 13) Indications for hemotransfusion.
- 14) Tactics of management of patients with anemia of various genesis.
- 15) Mechanisms of intravascular and intracellular hemolysis.
- 16) Transfusion of blood components and components.
- 17) Differential diagnosis of hemolytic, hypoplastic, posthemorrhagic anemia.
- 18) Peculiarities of clinic and laboratory diagnostics in hemolytic hypoplastic, posthemorrhagic anemia.
- 19) Basic principles of drug and non-drug treatment of patients with anemia of various genesis. Standards of treatment.
- 20) Primary and secondary prevention.

Practical tasks:

1. Name four of the main anemias belonging to the group of Microcytic Hypochromic Anemias

- 1
- 2
- 3
- 4

2. Name five of the main anemias classified as Normocytic Normochromic Anemias

- 1
- 2
- 3
- 4
- 5

3. Name two of the main anemias related to the group of Hyperchromic Macrocytic Anemias

- 1
- 2

4. What are the changes seen in the Biochemical Blood Analysis in case of Iron-deficiency Anemia?

- 1
- 2
- 3
- 4

Clinical Case № 1:

52 years old male, complains of general weakness, lack of appetite, aches and burning sensation in the tongue, numbness of fingertips and toe tips and diarrhea. Considers himself ill for four months; with the occurrence of general weakness also appeared an unsteady gait.

Objective State : severe condition, expressed skin paleness with a yellowish discoloration, on the tongue: bright red spots were found. Pulse: 82 bpm, rhythmical. BP: 140/90 mmHg. Peripheral lymph nodes are not enlarged. Abdomen is soft, sensitive upon palpation of the epigastrium. The lower liver border is on the right costal arch, the spleen cannot be palpated.

Formulate the preliminary diagnosis.

What laboratory analysis should be indicated and for what purpose?

Blood Analysis:

CBC			
Hemoglobin	56 g/L	Eosinophils	3%
RBCs	$1.2 \times 10^{12}/L$	Stab Cells	4%
Color Index	1.4	Segmented Cells	58%
Reticulocytes	1‰	Lymphocytes	30 %
WBCs	$2.5 \times 10^9/L$	Monocytes	5%
ESR	10 mm/hr	Megaloblasts	7 :100
Platelets	$120 \times 10^9/L$		

How do you evaluate the results of the Blood Analysis?

What should be the treatment for this patient?

7.If the results of the Stage 1 of Schilling test are abnormal and those of Stage 2 are within the normal ranges, what are the most probable reasons for the revealed anemia?

8. Clinical Case № 2:

27-year-old male, complains of periodic pain attacks on the right hypochondrium, which first appeared two years ago and on weakness. Since the age of 13, he has noticed periodic yellow skin discoloration.

Objective state : Icteric skin and mucous membranes, coated tongue, lymph nodes are not enlarged, abdominal palpation is painful on the right hypochondrium.

Bloodanalyzeswereordered .

1. CBC			
Hemoglobin	80 g/L	Stab Cells	4%
RBCs	$2.8 \times 10^{12}/L$	Segmented Cells	54%
Color Index	0.8	Lymphocytes	37%
Reticulocytes	2.0% (20‰)	Monocytes	3%
WBCs	$7.5 \times 10^9/L$	ESR	15 mm/hr
Eosinophils	2%	Microspherocytosis of erythrocytes	

Osmotic Fragility Test :

Osmotic Fragility of RBCs: Hemolysis onset at 0.6%NaCl, hemolysis complete at 0.4%NaCl.

What alterations can be identified in the analyses?

What instrumental methods of treatment would you prescribe?

Abdominal Ultrasound:

Liver is not enlarged. Within the gallbladder: gallstones. Splenic size: 16 x 12 cm.

Formulate the Clinical Diagnosis:

Write down the Treatment Plan for this Patient:

List of recommended literature:

Basic literature:

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Topic 27. Management of a patient with a leukemic reaction and leukemia..

Purpose: to acquire communication skills and clinical examination skills of a patient with leukemia and a leukemic reaction ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with leukemia and a leukemoid reaction ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with leukemia and leukemic reactions ; to diagnose emergency conditions in patients with leukemia and leukemic reaction; to master the tactics of providing emergency medical care to patients with leukemia and a leukemic reaction; to be able to perform therapeutic manipulations in patients with leukemia and leukemic reaction.

Basic concepts:hematopoietic mechanism; main elements of myelogram; definition of acute leukemia (AL) and chronic leukemia (CL); determination of the leukogenic factor; pathogenesis of AL and CL; classification of AL and CL; typical clinical syndromes of AL and CL; typical laboratory signs; principle of treatment; definition of "lymphogranulomatosis", "lymphocytic lymphoma", "lymphadenopathy"; diseases related to tumors of the immune system; classification of lymphogranulomatosis and lymphocytic lymphomas; peculiarities of the impression of lymph nodes in lymphogranulomatosis and lymphocytic lymphomas; main clinical syndromes in lymphogranulomatosis and lymphocytic lymphomas; diagnosis of the main manifestations and complications of lymphogranulomatosis and lymphocytic lymphomas; principles of treatment of lymphogranulomatosis and lymphocytic lymphomas; patterns of development of manifestations and complications of lymphogranulomatosis and lymphocytic (non-Hodgkin) lymphomas; the main diseases that occur with lymphadenopathy syndrome; peculiarities of the impression of lymph nodes in infectious diseases, oncopathology, systemic diseases of connective tissue, etc.

PLAN

Theoretical questions:

- 1) Explain the proliferation of bone marrow ballast cells.
- 2) What is a leukosis factor?
- 3) The formula of the general blood analysis is normal.
- 4) What is cellular atypism?
- 5) What is tumor progression?
- 6) What does lymphatic infiltration look like in different organs?
- 7) What does myeloid infiltration look like in different organs?
- 8) How are pharmacological agents used to treat leukemia?
- 9) What are the side effects of cytostatic drugs?
- 10) Which cell is the progenitor of hematopoiesis?
- 11) What is the difference between acute leukemia and chronic?
- 12) How do leukemic cells differ from normal cells of the same row?
- 13) What cells are the substrate of chronic myelogenous leukemia?
- 14) What drugs are included in the acute leukemia eradication program?
- 15) Name the main syndromes of acute leukemia?
- 16) Name the types of leukemic reactions?
- 17) What is the main drug prescribed for the treatment of chronic lymphocytic leukemia ?
- 18) What research method is the main one in the differential diagnosis of acute leukemia?

Practical tasks:

1. How can acute and chronic leukemias be differentiated based on clinical, laboratory instrumental studies?

Studies	Acute Leukemia	Chronic Leukemia
---------	----------------	------------------

Clinical		
Laboratory analysis		
Instrumental Studies		

2. Define what the leukemic gap is.

3. Which clinical, morphological and laboratory studies are necessary for the differential diagnosis between leukemia and leukemoid reaction?

Clinical case №1:

Patient D., 65 years old female, she is brought in to the surgical department with the diagnosis: Abscess of the thigh. She complains of fever up to 39°C, weakness, dizziness. The patient considers herself to be sick for about three months, since general weakness first appeared. About a week ago, on the site of injury, a hardening was found, which quickly increased in size and became purulent.

Objective state : moderate condition, pale skin, hot to the touch. Vesicular breathing. Heart auscultation revealed rhythmic heart sounds and a systolic murmur at the apex. Blood pressure: 130/70 mmHg. Pulse: 88 bpm. Abdomen is soft. Liver and spleen present no enlargement.

CBC: RBC: 2.8×10^{12} /L; Hemoglobin: 84 g/L; Color Index: 0.9; Platelets: 80.0×10^9 /L; WBC: 18.0×10^9 /L; Stab Neutrophils: 2%; Segmented Neutrophils: 64%; Basophils: 2%; Eosinophils: 1%; Lymphocytes: 47%; Monocytes: 4%; Blasts: 60%; ESR: 52 mm/hr.

Myelogram: Blasts: 30%; Promyelocytes: 1%; Myelocytes: 14%; Metamyelocytes: 8%; Band Cells: 12%; Segmented: 3%; Eosinophils: 1%; Plasma Cells: 1 %.

What type of leukemia would you think of?

What additional studies should be done?

Where should patients with such conditions be treated?

5. What are the clinical remission criteria of acute leukemia?

6. What other organs can be involved in acute leukemia, besides the bone marrow?

7. What are the direct hematological signs of acute and chronic leukemia?

Acute Leukemia:

Chronic Leukemia:

8. What type of leukemia is characterized by the occurrence of DIC syndrome?

9. Clinical case №2:

Patient A., 55 years old female, belongs to the first group of disability. Has been ill for five years. The disease started with pain in the lumbar region, urinalysis revealed proteinuria up to 0.99%,

blood analysis showed acceleration off the ESR to 70mm/hr. During the last two years bone pains have occurred, worse in the ribs and pelvic bones. Up to the appearance of the present disease, she considered herself to be healthy.

Objective state : moderate condition, skin and mucous membranes are pale, lymph nodes are not enlarged. Palpation and percussion of shin bones, pelvic bones and thorax is painful. Lung percussion revealed normal lung resonance. Vesicular breathing on lung auscultation. Relative heart borders in normal position. Muffled heart sounds, rhythmical. BP: 140/80 mmHg. Pulse: 80 bpm. Liver palpation: lower border on the costal arch. Spleen palpated in the depth of the left hypochondrium. Negative Pasternatsky bilaterally. Micturition is not deranged.

CBC : RBC: 2.8×10^{12} /L; Hemoglobin: 70 g/L; Color Index: 0.9; Platelets: 100×10^9 /L; WBC: 2.8×10^9 /L; Eosinophils: 2%; Band Neutrophils: 2%; Segmented: 56%; Lymphocytes: 35%; Monocytes: 5%; ESR: 86 mm/hr.

Urinalysis: Specific Gravity: 1.015; Protein: 0.99%; Bence Jones protein found.

Biochemical Blood Analysis : Urea: 15 mmol/L; Creatinine: 100 mcml/L; Cholesterol: 4.9 mmol/L; Formalin Test: sharply positive; Protein: 113 g/L.

Skull X-Ray : Clearly seen bones of the frontal, parietal and mandibular regions, slight enlightenments of oval and round shape. A bone marrow puncture was done.

Myelogram : Myeloblasts: 1%; Promyelocytes: 2%; Myelocytes: 4%; Band Cells: 25%; Segmented: 14%; Eosinophils: 4%; Plasma Cells: 31%; Lymphocytes: 9%.

Patient began treatment.

What symptoms and syndromes can be identified?

How do you interpret the results of the myelogram?

Formulate the clinical diagnosis. Conduct a Differential diagnosis.

What are the possible complications?

Where should the patient be admitted?

List of recommended literature:

Basic literature:

- Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition - (August 13, 2021). - 736 pages
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Topic 28. Management of a patient with lymphadenopathy.

Purpose: to acquire communication skills and clinical examination skills of a patient with lymphadenopathy ; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with lymphadenopathy ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with lymphadenopathy ; to diagnose emergency conditions in patients with lymphadenopathy; master the tactics of providing emergency medical care to patients with lymphadenopathy; to be able to perform therapeutic manipulations in patients with lymphadenopathy.

Basic concepts: definition of the concept of lymphadenopathy (LDP); on diseases and pathological processes accompanied by LDP; diagnostic search in LDP patients; localization and prevalence of LDP; detection of additional symptoms in LDP patients; about the effectiveness of LDP in various diseases; features of peripheral blood analysis for various causes of LDP; features of LDP in leukemias; features of LDP in oncological diseases.

PLAN

Theoretical questions:

- 1) The structure and function of the lymph node and its role in normal conditions and in various diseases
- 2) Definition of the concept of "lymphogranulomatosis", "lymphocytic lymphoma", "lymphadenopathy".
- 3) What diseases are tumors of the immune system?
- 4) What are the main clinical manifestations of lymphogranulomatosis, non-Hodgkin's lymphomas?
- 5) What are the features of the impression of lymph nodes and other organs and systems in lymphogranulomatosis, non-Hodgkin's lymphomas?
- 6) Laboratory and instrumental methods of diagnosis of lymphogranulomatosis, non-Hodgkin's lymphomas.
- 7) Basic principles of treatment of lymphogranulomatosis, non-Hodgkin's lymphoma.
- 8) Tactics of managing patients with tumors of the immune system.
- 9) What complications can occur with lymphogranulomatosis and non-Hodgkin's lymphomas?
- 10) The main causes of lymphadenopathy.
- 11) Differential diagnosis of lymphadenopathy in infectious diseases, oncopathology, systemic connective tissue diseases, etc.
- 12) Tactics of managing patients with lymphadenopathy.

Practical tasks:

1. Give the definition of Lymphadenitis and of Lymphadenopathy

Lymphadenopathy

2. Classification of Lymphadenopathies

Tumoral:

Infectious:

Reactive:

3. What studies should be performed on a patient with lymphadenopathy?

4. What are the peculiarities of the lymph nodes in case of:
Epstein–Barr Virus Infection:

Lymphocytic Leukemia:

Lymphogranulomatosis:

5. What disease should you think of, if a patient presents with enlarged lymph nodes, splenomegaly and blastosis?

Clinical Case №1:

Patient K., 42 years old male, on General Blood Analysis presents with: RBCs: 2.7×10^{12} /L; Color Index: 1.0; Hemoglobin: 90 g/L; Platelets: 110×10^6 /L; WBCs: 12×10^9 /L; Eosinophils: 1%; Basophils: 1%; Stab Cells: 10%; Segmented Cells 45%; Lymphocytes: 40%; Monocytes: 3%; ESR: 20 mm/hr.

Sternal Puncture: Blasts: 30%; Cytochemical study of blast cells revealed glycogen granules.

Formulate the preliminary diagnosis:

Treatment:

7. Clinical Case № 2:

65 years old male, has been sick for several years, remarks the enlargement of submandibular lymph nodes, sweating and weakness. Two weeks ago his condition became worse. Appeared enlargement of the liver, the spleen and of lymph nodes.

Blood Analysis : RBCs: 2.8×10^{12} /L; Hemoglobin: 92 g/L; WBCs: 68×10^9 /L; Lymphocytes: 86%; ESR: 48 mm/hr. Gumprecht's shadow cells were found on peripheral blood films.

What is the most likely diagnosis?

What will be the most informative method in this case?

What other diseases should be considered for the differential diagnosis?

8. Clinical Case № 3:

A 65-year-old male, who has been observed for a long time due to Prostatic Hyperplasia with increased PSA, was admitted to the Gastroenterological Department with complaints of nausea and lack of appetite. Physical examination revealed enlargement of inguinal lymph nodes. An abdominal CT was ordered.

What can you see on the CT scans?



List of recommended literature:

Basic literature:

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- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>
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- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 29. Management of a patient with hemorrhagic syndrome. Management of a patient with purpura.

Purpose: to acquire communication skills and skills of clinical examination of a patient with hemorrhagic syndrome and purpura; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with hemorrhagic syndrome and purpura; master the principles of treatment, recommendations for lifestyle changes in the management of patients with hemorrhagic syndrome and purpura; diagnose emergency conditions in patients with hemorrhagic syndrome and purpura ; master the tactics of providing emergency medical care to patients with hemorrhagic syndrome and purpura; to be able to perform therapeutic manipulations in patients with hemorrhagic syndrome and purpura.

Basic concepts: definition of hemorrhagic syndrome and purpura ; hemostasis system and characteristics of the main types of bleeding; the main diseases that are accompanied by hemorrhagic syndrome; the main diseases that are accompanied by purpura; etiological factors of diseases accompanied by hemorrhagic syndrome and purpura; pathogenesis of diseases accompanied by hemorrhagic syndrome and purpura; clinic of diseases accompanied by hemorrhagic syndrome and purpura; mechanisms of hematopoiesis and blood coagulation disorders, quantitative and qualitative changes in the composition of peripheral blood in hemorrhagic syndrome; interpretation of the main modern ideas about etiology and pathogenesis; interpretation of changes in the general blood test and myelogram; hemorrhagic syndrome, purpura treatment tactics; basic principles of diagnosis and stages of diagnostic search for patients with hemorrhagic syndrome and purpura; basic principles of treatment of diseases accompanied by hemorrhagic

syndrome and purpura ; prognosis for the patient; issues of medical rehabilitation and secondary prevention.

PLAN

Theoretical questions:

1. Define the term hemostasis system and characterize the main types of bleeding.
2. Explain the mechanisms of hematopoiesis and blood coagulation disorders, quantitative and qualitative changes in the composition of peripheral blood in hemorrhagic syndrome and purpura.
3. Correctly interpret the main modern ideas about etiology and pathogenesis.
4. Interpret changes in the general blood test and myelogram.
5. Basic principles of diagnosis and stages of diagnostic search for patients with hemorrhagic syndrome and purpura.
6. Basic principles of treatment of diseases accompanied by hemorrhagic syndrome and purpura.
7. Forecast for the patient.
8. Issues of medical rehabilitation and employment.
9. The issue of secondary prevention.
10. To which group of diseases do all hemophilias belong?
11. What indicators of hemostasis are most important for the diagnosis of thrombocytopenic purpura?
12. What is the main pathogenetic treatment for idiopathic autoimmune thrombocytopenic purpura?

Practical tasks:

1. Fill in the blanks

Skin Lesion	Peculiarities	Characteristics of which diseases
Ecchymoses		
Petechiae		
Mixed Purpurae-Petechiae		
Vascular-Purpural		
Angiomatous		

2. Complete the pathogenesis of Bleeding Diathesis

A) Bleeding diathesis due to violation of _____(thrombocytopenia and thrombocytopathy)

B) _____ Bleeding diathesis due to _____ disorders of _____(coagulopathy)

C) Bleeding diathesis due to disorders of _____ and _____stasis

D) _____ Bleeding diathesis due to primary lesions of _____(vasopathies).

3. Fill in the disease accompanied by Secondary Hemorrhagic Syndromes

Cardiovascular:

Autoimmune:Collagenoses(SLE,RA,Dematomyositis,etc.)

Neoplastic:

LiverDiseases:

Kidney Diseases:

ObstetricPathologies:

InfectiousToxic:

Endocrine:

Side effects of drugs:

4. Fill in the following table with the following medicines:

Azathioprine, Factor VIII (Antihemophilic globulin B), Cyclophosphamide, Methylprednisolone, Concentrated Factor VIII - IX, Curantil (Dipyridamole), Prednisolone, Plaquenil, Meloxicam, Aceclofenac, Vincristine, Timaline, Cryoprecipitate, antihemophilic Plasma, Ibuprofen, Aminocaproic Acid, Thrombocytic mass, Movalis, Nimesil, Prothrombin Complex Concentrate, Ketoprofen, Protein C Concentrate, Para-aminobenzoic Acid, Splenin, T-Activin, Ticlopidine, Heparin, Solu-Medrol, Clopidogrel

Inhibitors of Fibrinolysis	Glucocorticoids, NSAIDs	Immunosuppressants, Immunomodulators	Antiplatelet, Anticoagulants	Blood Components

5. Define Thrombocytopenic Purpura, one of the diseases or syndromes most often found in hematology, which can provoke many serious conditions, met by doctors.

6. Write down:

- Which bone marrow stem cells form and develop in thrombopoiesis?

- From which cells derive mature platelets?

7. Fill in the blanks

Skin Lesion	Peculiarities	Characteristics of which diseases
Ecchymoses (Hematomas)		
Petechaie		
Mixed Purpurae-Petechiaie		
Vascular-Purpural		
Angiomatous		

8. Complete the following table: Severity degrees of Thrombocytopenia

Degree	Platelet Count	Likelihood of Bleeding
Mild		
Moderate		
Severe		
Very Severe		

9. To which type of Bleeding Diathesis does this skin rash belong? With what type of Purpura should it be differentiated?



10. What is the role played by the spleen in the pathogenesis of hemorrhagic syndrome?

11. Which disease, do you think, is the reason for this Petechial-Pustular Rash? Which conditions should be included in the differential diagnosis?



12. Name the diseases causing inhibition of platelet formation

- Hypoplastic and Aplastic Anemia

-
-
-
-
-

13. Name the main methods for the laboratory diagnosis of thrombocytopenia

- Platelet count in peripheral blood

-
-
-
-

14. Drugs and treatment methods for the management of Thrombocytopenic Purpura (Werlhof's disease)

- Glucocorticoids

-
-
-
-

List of recommended literature:

Basic literature:

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Topic 30. Management of a patient with a complicated hypertensive crisis. Management of a patient with cardiac asthma and pulmonary edema.

Purpose:to acquire communication skills and skills of clinical examination of a patient with complicated hypertensive crisis, cardiac asthma and pulmonary edema ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with a complicated hypertensive crisis, cardiac asthma and pulmonary edema ; master the principles of treatment, recommendations for lifestyle changes in the treatment of

patients with complicated hypertensive crisis, cardiac asthma and pulmonary edema ; learn to diagnose emergency conditions in patients with complicated hypertensive crisis, cardiac asthma and pulmonary edema and master the tactics of providing emergency medical aid; to be able to perform therapeutic manipulations in patients with complicated hypertensive crisis, cardiac asthma and pulmonary edema .

Basic concepts: definition of the term hypertensive and complicated hypertensive crisis; diagnostic criteria of complicated hypertensive crisis; the main clinical manifestations of hypertensive crises with the following complications: acute coronary syndrome, acute hypertensive encephalopathy, subarachnoid hemorrhage, ischemic stroke, hemorrhagic stroke, acute left ventricular failure (pulmonary edema), acute stratifying aortic aneurysm; eclampsia and preeclampsia; intra- and postoperative hypertension, hypersympatheticotonia (phaeochromocytoma, cocaine, amphetamine intoxication); features of blood pressure correction (target levels), depending on the damage to the target organ; the main groups of drugs used in complicated hypertensive crises and the peculiarities of their appointment depending on the damage to the target organ; defining the terms acute heart failure, cardiac asthma and pulmonary edema; the main causes of acute heart failure (ACS, hypertensive crisis, arrhythmia, acute mechanical cause, PE).

PLAN

Theoretical questions:

- 1) Define hypertensive crisis.
- 2) How are crises divided depending on treatment tactics?
- 3) Give a description of complicated HC.
- 4) Describe uncomplicated HC, types of complicated crises?
- 5) What mandatory diagnostic measures are carried out to clarify the degree of involvement of target organs in HC?
- 6) What are the tactics of treatment of complicated HC.
- 7) What are the tactics of treatment of uncomplicated HC.
- 8) What are the target blood pressure levels depending on the damage to the target organ.
- 9) What are the features of treatment of ischemic and hemorrhagic strokes against the background of HC?
- 10) What are the features of treatment of acute left ventricular failure against the background of HC?
- 11) What are the features of treatment of acute coronary insufficiency and myocardial infarction against the background of HC?

Practical tasks:

1. Give the definition of complicated hypertensive crisis

Hypertensive crisis is an urgent serious condition caused by

_____, is manifested by the clinical picture of the lesion of _____ and provides immediate _____ for prevention _____.

2. Specify typical target organs, the lesion of which is characteristic for complicated hypertensive crisis

1.

2.

3.

4.

3. Specify the most common complications of hypertensive crisis

1. From the side of the brain :

2. From the side of lungs :

3. From the side of the heart :

4. From the side of kidneys :

5. From the side of great vessels :

4. What urgent steps must be performed on complicated hypertensive crisis? How to influence its main pathogenetic links?

1. Left ventricle of heart:

2. Coronary arteries:

3. Acute heart failure:

4. Blood volume:

5. Peripheral vessels:

6. Brain:

7. Diuresis:

8. Stress, agitation :

9. Seizures activity

5. Immediate actions of a physician are :

If it is obvious that in the patient there developed certain complications of hypertensive crisis, therapy should be intensively performed with _____ the introduction of drugs. In the case of aortic aneurysm stratification blood pressure should be reduced _____ to the level of _____ mm Hg. In acute violations of cerebral circulation, reduce the pressure to _____ (to specify the speed and reduce the target value). When hypertensive crisis, which turned out to be complicated, patient _____

_____ (to specify the department and amount of medical assistance).

6. Distribute the proposed medication

Nitroprusside sodium; Benzohehexonyl; Labetalol; Nicardipine, Clonidine (clonidine); hydralazine, minoxidil, diazoxide, nifedipine; Nitroglycerin, isosorbide dinitrate, beta-blockers; ACE inhibitors; loop diuretics furosemide, torasemide; Diazoxide, verapamil; monotherapy of beta-blockers; Enalaprilat Dibazol, papaverine, loop diuretics, narcotic analgesics, sedatives, other (optional)

<i>Hypertonic crisis complications</i>	The medication of choice	Second-line medication	Medications that are contraindicated
Acute hypertensive encephalopathy			
Intracerebral hemorrhage, subarachnoid hemorrhage			
Acute cerebral infarction			
Acute myocardial infarction, unstable angina			
Acute left ventricular heart failure and pulmonary edema			
Dissecting aneurysm of the aorta			
Preeclampsia, eclampsia			
Azotemia			
The condition with excess of circulating catecholamines			

7. Give the definition of pulmonary edema

It is a pathological condition caused

by _____

In _____;

8. Give the definition of cardiac asthma :

_____ failure, caused by

_____ In _____ the circle of

blood circulation and _____ lungs. Attacks of cardiac asthma are accompanied by a

feeling _____. Is manifested by the following

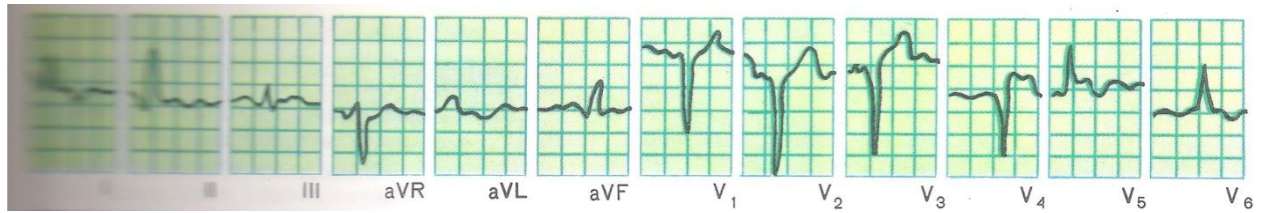
symptoms:

—

___ The diagnosis of cardiac asthma is based on evaluation of clinical symptoms, examination data, medical history, chest x-ray, ECG. Attack of cardiac asthma is treated

with _____

9. Instrumental methods of diagnosis of pulmonary edema: provide a description of typical for pulmonary edema ECG pattern



10. Instrumental methods of diagnosis of pulmonary edema: provide a description of typical x-ray picture for pulmonary edema



11. Give the main points of application of the therapy for the edema and give examples of drugs that are required for successful therapy

Respiratory center:

Heart:

Small circle of blood circulation :

Oxygenation

CNS

-Circulating volume of blood:

- Other

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- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>
- <http://www.oxfordmedicaleducation.com/>
- <http://ard.bmj.com>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 31. Management of a patient with acute coronary syndrome. Management of a patient with myocardial infarction. Management of a patient with cardiogenic shock.

Purpose:to acquire communication skills and skills of clinical examination of a patient with acute coronary syndrome, cardiogenic shock; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with acute coronary syndrome, cardiogenic shock; master the principles of treatment, recommendations for lifestyle changes in the management of patients with acute coronary syndrome, cardiogenic shock; learn to diagnose emergency conditions in patients with acute coronary syndrome, cardiogenic shock and master the tactics of providing emergency medical aid; to be able to perform therapeutic manipulations in patients with acute coronary syndrome, cardiogenic shock.

Basic concepts:modern definition of acute coronary syndrome (ACS) and cardiogenic shock; main issues in the etiology and pathogenesis of ACS; ACS classification (ICD-10 and recommended by WHO); variants of the clinical course of ACS and cardiogenic shock; ECG diagnosis of ACS;

laboratory and biochemical diagnosis of ACS; stages of differential diagnosis according to the leading syndrome; complications of ACS and cardiogenic shock; principles of treatment of ACS and its complications; rehabilitation of patients after ACS.

PLAN

Theoretical questions:

- 1) Give the definition of ACS.
- 2) Explain the difference between non-ST-segment elevation and ST-segment elevation ACS.
- 3) List the clinical diagnostic criteria of ACS.
- 4) What research methods are mandatory for ACS without ST segment elevation?
- 5) What research methods are additional for ACS without ST segment elevation?
- 6) List the ECG criteria of ACS.
- 7) What biochemical indicators are markers of ACS.
- 8) Basic principles of ACS treatment.
- 9) What is the criterion of treatment effectiveness?
- 10) Define cardiogenic shock.
- 11) What pathogenetic mechanisms underlie the development of acute coronary syndrome?
- 12) What are the diagnostic criteria for cardiogenic shock?
- 13) What are the clinical manifestations of cardiogenic shock?
- 14) Describe the changes on the ECG characteristic of the development of cardiogenic shock.
- 15) Describe the biomarkers inherent in cardiogenic shock.
- 16) List the main and additional examination methods for cardiogenic shock.
- 17) What urgent medical measures should be taken in patients with cardiogenic shock?
- 18) Describe the treatment measures for the development of cardiogenic shock.
- 19) What are the criteria for the quality of treatment in patients with cardiogenic shock?
- 20) What is the prognosis for patients with cardiogenic shock?
- 21) What preventive measures are recommended for cardiogenic shock?

Practical tasks:

1. Give the definition of acute coronary syndrome:

ACS is a set of pathological reactions of the body arising from the development

_____ with _____,
_____ without _____ or _____

The reason is _____.

2. Describe the main symptoms of acute coronary syndrome

The main symptom of acute coronary syndrome is pain: by nature –

Pain localization –

Pain often occurs after duration –

After taking nitroglycerin the pain -

Skin:

CNS:

Cardiac rhythm:

Respiratory system:

Other symptoms:

3. Describe the main forms of acute coronary syndrome

<ul style="list-style-type: none">Acute coronary syndrome with _____ reflects the presence of acute full _____ of coronary arteries, specific for _____ of myocardium.	Acute coronary syndrome without _____ Is specific for _____ Angina pectoris
--	---

4. The diagnosis of ACS. It should be made clear when talking with the patient and family ?

Anamnesis and complaints	
Life history	
Family history	

5. The diagnosis of ACS. What should you pay attention to during the initial examination ?

Medical examination	
---------------------	--

6. The diagnosis of ACS. Specify changes in laboratory parameters, possible due to ACS .

General analysis of blood	
Biochemical analysis of blood	

7. Due to ACS with elevation _____, the reason of which is _____, it is possible the appearance of specific markers, namely :

The study of specific enzymes	
-------------------------------	--

8. Due to ACS with elevation _____, the reason of which is _____, it is possible the specific change of coagulation parameters

Coagulogramm	
--------------	--

9. What are the characteristic for ACS changes of ECG and Echo-CG :

ECG	
ECG monitoring	
Echocardiography (EchoCG)	

10. Indicate what changes in indicators of possible coronary angiography in ACS :

Coronary angiography	
----------------------	--

11. Indicate the expected effect of therapeutic interventions in ACS and give examples of medications (if possible)

Oxygenation :
Adequate analgesia :
Antiischemic medication: - β -adrenoblockers: -nitrates: - Calcium antagonists :
Antithrombotic medication :
Fibrinolytics :
Statins :
Coronary revascularisation :

12. Specify major complications and consequences of ACS :

Myocardial changes :
Changes of rhythm and conduction:
Pumping function of the heart

Pericardium
Fatal outcome

13. Specify the primary prevention of acute coronary syndrome

Lifestyle changes:
Diet changes:
Pharmacotherapy:

14. Define cardiogenic shock — extreme _____, characterized by a sharp decline _____ the ability of the myocardium (the fall _____ release), which is not offset by an increase in vascular _____ and leads to inadequate _____ organs and tissues in particular — _____ organs. Most often it develops as a complication of _____, less often _____ or _____ substances. There are four mechanisms that cause shock:

- Upset _____ the function of the heart muscle.
- Severe cardiac _____;
- _____ ventricular effusion or _____ in the heart sac;
- Massive _____ pulmonary artery as a special form of CS.

15. Describe the main risk factors for cardiogenic shock

Cardiovascular system	
Comorbidities	
General condition	

16. Describe the clinical manifestations of cardiogenic shock.

Arterial hypotension	Systolic blood pressure less than _____ mm of Hg or at _____ mm Hg below normal levels during _____ less or more Cardiac index less _____ L/min/m ² .
Violation of peripheral perfusion	
CNS	
Light	

17. Differential diagnosis of cardiogenic shock. Give examples of conditions that can cause hypotension:

- 1.
- 2.
- 3.
- 4.

5. Specify the drugs to be used to relieve cardiogenic shock

Relief of pain	
Normalizing heart rhythm	
Increased inotropic myocardial function	
Non-specific anti-shock	
Maintenance of water and electrolyte balance	
Thrombolysis	
Vasodilators	
Other	

18. List the indications for thrombolytic therapy:

Myocardial infarction with a combination of three features:

— angina pain, continuing more without support factors _____ less and not needing readmission _____;

— on ECG: _____, minimum in two contiguous precordial leads or two out of three “inferior” leads (_____), or appearance bundle-branch block;

— _____ the first hours of illness

Other indications:

— _____ artery

— peripheral _____;

— thrombosis _____ (except _____ limbs);

19. What are the contraindications to thrombolytic therapy?

- 1.
- 2.
- 3.
- 4.
- 5.

20. What are the main signs of effectiveness of re-perfusion therapy?

1. Dynamics of pain :

2. Changes in the ST segment:
3. Laboratory tests :
4. Rhythm of the heart :
5. Hemodynamics :
6. Signs of left ventricular failure:

List of recommended literature:

Basic literature:

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Topic 32. Management of a patient with pulmonary embolism. Treatment tactics for sudden cardiac death.

Purpose:to acquire communication skills and clinical examination skills of a patient with pulmonary embolism ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with pulmonary embolism ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with pulmonary embolism; learn how to diagnose emergency conditions in patients with pulmonary embolism and master the tactics of providing emergency medical aid in case of sudden cardiac death; to be able to perform therapeutic manipulations in patients with pulmonary embolism

Basic concepts:definition of the PE; etiology and pathogenesis of PE; clinic and course of PE; differential diagnosis of PE ; treatment tactics for PE ; basic laboratory-instrumental methods of cardiovascular system research; interpretation of ECG, evaluation of ECHO-CG data in PE;

interpretation of the main laboratory, instrumental, radiation, radiological, ultrasound methods of examination of patients with PE, in determining the indications and contraindications for their implementation; emergency care for PE at the pre-hospital and hospital stages.

PLAN

Theoretical questions:

- 1) Describe the risk factors of PE.
- 2) What are the clinical manifestations of PE?
- 3) What diagnostic methods are the first-line tests for suspected PE?
- 4) Describe the ECG symptoms of PE.
- 5) What are the radiological criteria for PE?
- 6) What is the diagnostic significance of echocardiography in PE?
- 7) Name the main principles of treatment of PE.
- 8) Describe the indications and contraindications for thrombolytic therapy.
- 9) What are the features of PE anticoagulant therapy?
- 10) Describe the surgical methods of treatment of PE.

Practical tasks:

1. Describe risk factors for pulmonary embolism:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

2. Describe the typical complaints of the patient with pulmonary embolism:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

3. Letter of disease with which you will be a differential diagnosis :

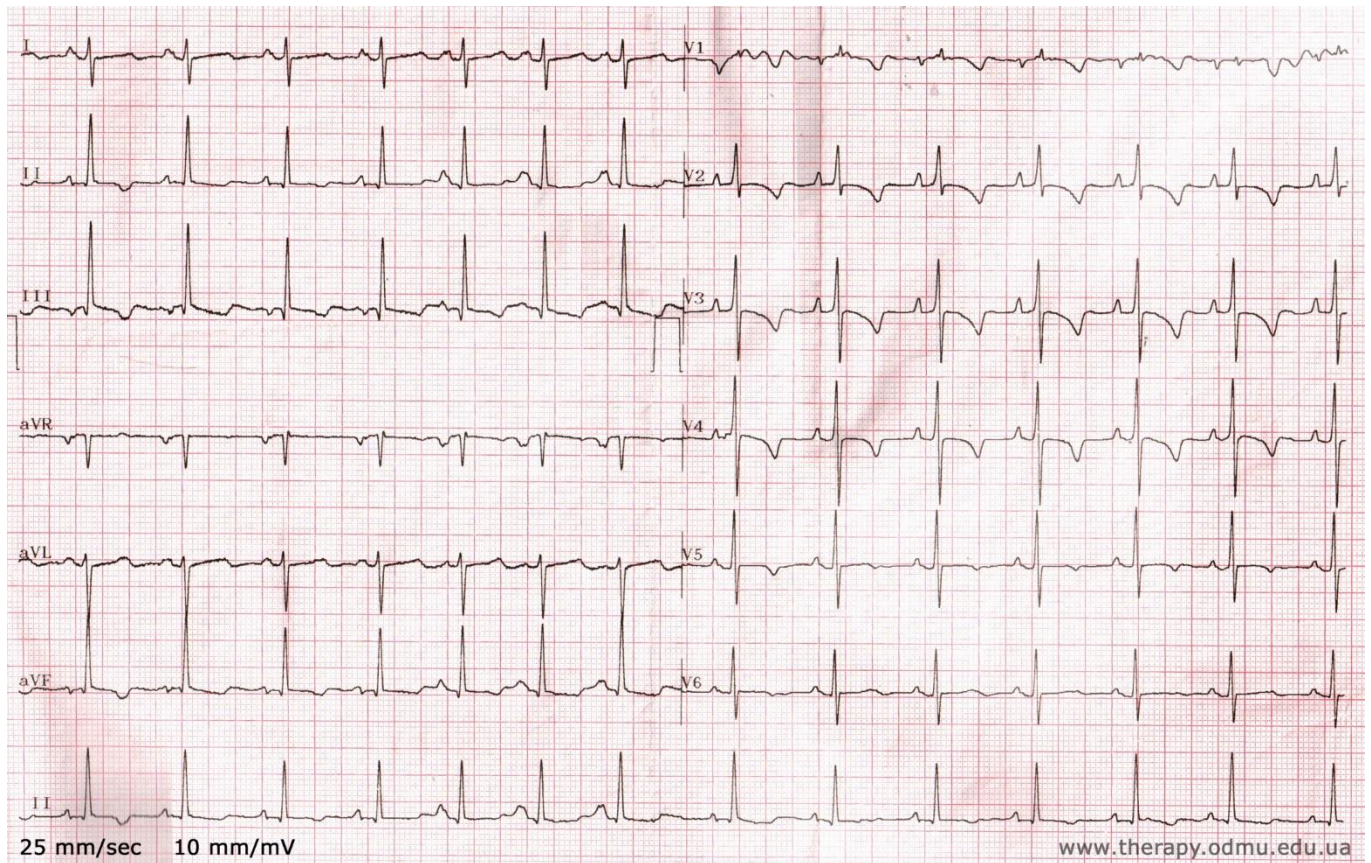
- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

4. Clinical task:

Patient N., 60 years old, presents at the emergency department with severe chest pain, dyspnoea and hemoptysis. He suffers from varicose veins of the lower extremities. OBJECTIVE: in a serious condition, cyanosis, swollen neck veins. Heart rate - 130 per minute. BP - 80/60 mm Hg., t -36.7
Above the apex of the heart I relaxed tone, accentuation of II sound in intercostal space on the left.
In the lungs, the right - moist rales.

What is a preliminary clinical diagnosis :

5. Give your opinion on the following ECG:



6. Which laboratory methods do you assign?

7. What instrumental methods of research do you assign?

8. Describe ECG symptoms of pulmonary embolism:

9. What is the radiological criteria for pulmonary embolism?

10. Write a treatment plan of the patient N. in the ICU:

11. Describe indications and contraindications for thrombolytic therapy:

Indications: Contraindications:

12. What are the further tactics of treating a patient after an episode of pulmonary embolism ?

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Topic 33. Management of a patient with paroxysmal rhythm and conduction disorders..

Purpose: to acquire communication skills and skills of clinical examination of a patient with paroxysmal rhythm and conduction disorders ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with paroxysmal rhythm and conduction disorders ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with paroxysmal rhythm and conduction disorders ; learn to diagnose emergency conditions in patients with paroxysmal rhythm and conduction disorders and master the tactics of providing emergency medical aid; to be able to perform therapeutic manipulations in patients with paroxysmal rhythm and conduction disorders .

Basic concepts: anatomical structure of the conducting system of the heart and physiological bases of its functioning; electrocardiogram indicators in healthy people; pathogenesis of heart rhythm and conduction disorders; classification of heart rhythm and conduction disorders; typical clinical manifestations of heart rhythm and conduction disorders; modern methods of instrumental examination of patients with heart rhythm and conduction disorders; leading syndrome of cardiac or conduction rhythm disturbance; formulation of preliminary and final diagnosis.

PLAN

Theoretical questions:

- 1) Define heart rhythm disorders.
- 2) What forms of impulse formation disorders do you know?
- 3) What forms of impulse conduction disorders do you know?
- 4) What etiological factors can lead to heart rhythm disorders
- 5) and conductivity?
- 6) What are the general principles of diagnosing heart rhythm disorders?
- 7) What are the ECG criteria for supraventricular arrhythmias?
- 8) What are the ECG criteria for ventricular arrhythmias?
- 9) List the general principles of treatment of heart rhythm disorders.
- 10) What are the general principles of diagnosing conduction disorders?
- 11) List the general principles of treatment of conduction disorders.

Practical tasks:

1. Give the definition of cardiac arrhythmias.
-

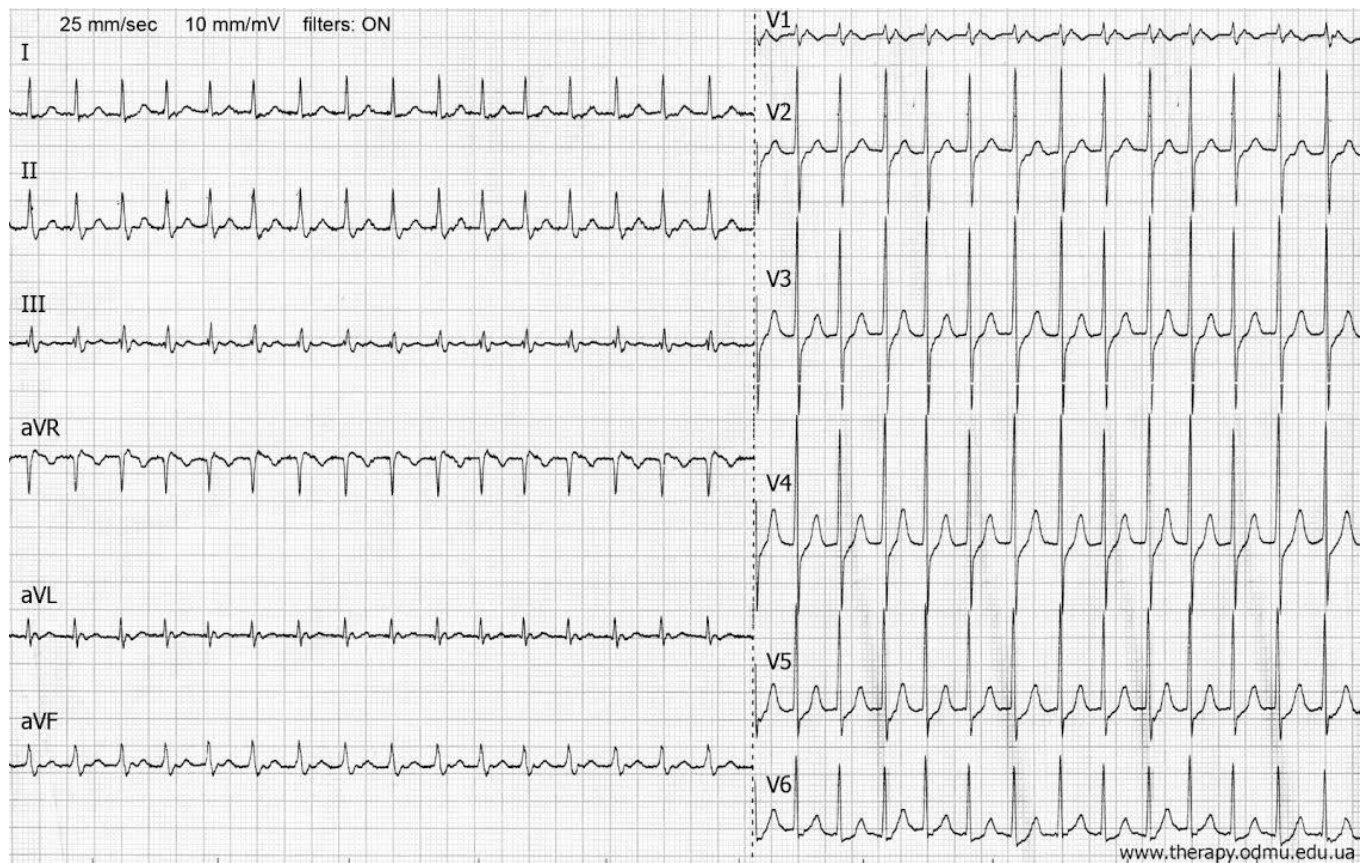
2 . What are the etiological factors that can lead to cardiac arrhythmias and conduction disorders?

3 . What are the basic methods we use for diagnosis of cardiac arrhythmias?

4. Task 1

The patient's 27 years after physical activity was admitted to the hospital with palpitation, pain in the heart. During the 4 years he has been suffering from rheumatism, with mitral heart disease without circulatory disturbances.

ESG of this patient:



What is the most likely diagnosis?

What are the ECG criteria for these arrhythmias?

What is the algorithm of the management of this rhythm disorder?

5. Task 2 .

In patient 65, which is located on ECG monitoring, suddenly appeared on the monitor, small waves instead of teeth R, which is practically impossible to count. Was diagnosed with clinical death.

1. What is the most likely complication in this patient?

2. What therapeutic measures need to be held in the first place?

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6 . Complete the table, which describes the main classes of anti-arrhythmic drugs

Class, group		Electrophysiological mechanism	Drugs	Possible side effects
IA				
IB				
IC				
II				
III				
IV				

7. What is the management of a haemodynamically unstable patient with narrow complex tachycardia?

8. List the general principles of treatment of conduction disorders?

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Topic 34. Management of a patient with severe community-acquired and hospital-acquired pneumonia. Management of a patient with total pleural effusion and pneumothorax.

Purpose: to acquire communication skills and skills of clinical examination of a patient with severe non-hospital and hospital pneumonia, total pleural effusion and pneumothorax ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with severe non-hospital and hospital pneumonia, total pleural effusion and pneumothorax ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with severe community-acquired and hospital-acquired pneumonia, total pleural effusion and pneumothorax ; learn to diagnose emergency conditions in patients with severe non-hospital and hospital pneumonia, total pleural effusion and pneumothorax and master the tactics of providing emergency medical care; to be able to perform therapeutic manipulations in patients with severe non-hospital and hospital pneumonia, total pleural effusion and pneumothorax .

Basic concepts: etiology and pathogenesis of pneumonia; modern classification of pneumonia ; clinical features of various types of pneumonia and possible complications; pneumonia severity criteria and indications for hospitalization; general principles and features of treatment of various variants of pneumonia and possible complications; medical and social examination of pneumonia and its complications; clinical pharmacology of antibiotics; examination of a patient with pneumonia and assessment of the degree of severity and category of this nosology; patient examination plan and evaluation of the results of additional research methods; differential diagnosis of pulmonary infiltrate; substantiation and formulation of clinical diagnosis; prescription of individual treatment for the patient, selection of the most effective antibiotic or combination depending on the causative agent, category and severity of pneumonia; emergency care for spontaneous pneumothorax, pulmonary edema, pulmonary hemorrhage, acute respiratory failure, infectious -toxic shock.

Theoretical questions:

1) Define the term "pneumonia".

What types of pneumonia do you know?

2) What symptoms are "small" criteria for a severe course of pneumonia?

3) What are the "big" criteria for severe pneumonia?

4) Name the diagnostic criteria necessary for making a diagnosis of "pneumonia".

5) What groups are pneumonia patients divided into ?

What antibiotic therapy is indicated for patients with pneumonia of the IV group?

What types of hospital pneumonia do you know?

6) List the diagnostic criteria for hospital-acquired pneumonia.

7) What are the principles of antibacterial therapy for patients with hospital-acquired pneumonia?

Practical tasks:

1. Patient, 25 years old, was admitted with complaints of pain in the left half of the chest, aggravated by deep breathing, shortness of breath, dry cough. 5 days ago after hypothermia there was increased body temperature to 38 C and pain appeared in the left half of the chest. Pain was initially very strong, then became weaker, but increased shortness of breath. Objectively: the patient is in a forced sitting position. RR 32 in 1 min. Left half of the chest bulges and lags while breathing. In the left lung there is shortening of percussion sounds down from IV rib. Breathing in the upper divisions is bronchial, in the lower - weak and not heard. Heart rate/pulse 100 in 1 min., BP 100/65 mmHg. Heart – the right border of relative cardiac dullness is 3 cm to the right from the edge of the sternum. Muffled heart sounds. The abdomen was painless, the liver was at the edge of the costal arch. ECG: sinus tachycardia. Radiography of the chest cavity: left extensive blackout. The displacement of the mediastinum to the right. On pleural puncture was received 1100 ml, specific gravity - 1.023, protein - 4.8%, Rivalt test is positive. Microscopy – 90% degenerative - modified neutrophils.

Questions:

1. Determine the nature of the pleural fluid.

2. Formulate a preliminary diagnosis.

3. Describe the methods to perform pleural puncture.

4. Perform the differential diagnosis between exudates and transudates.

5. What can show the microscopy of pleural fluid?

6. Program of differential diagnosis.

7. Treatment program.

2. Describe the X-ray picture



3. The patient, 55 years old, is in the intensive care unit for severe bronchial asthma. General condition is severe pronounced cyanosis, swelling of jugular veins. Auscultation: breathing hard with different-sized rales, indicated the numb areas. Heart sounds are very deaf, heart rate is 112 beats per minute, BP is 170/110 mm Hg. RR – 30 per minute, oxygen saturation < 90%, PaCO₂ - 60 mm Hg., PaO₂ - 65 mm Hg.

Questions:

- 1) Which complication occurred in a patient?
- 2) What emergency treatment is required for the patient?
- 3) What are the indications for lung mechanical ventilation?

4. Describe the X-ray picture



5. Name the classification of pneumothorax. What is the difference in treatment approaches?

1. _____

2. _____

3. _____

6. List the indications for pleural puncture

7. Describe the technique of a pleural puncture

8. Write pneumonia classifications

Community-acquired pneumonias	Nosocomial pneumonias
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9. Main pneumonia severity criteria

Main signs	Severity degree		
	I	II	III
Temperature			
RR			
Intoxication			
Cyanosis			
Complications of other organs			
Peripheral blood parameters			
Biochemical parameters			

10. Describe the X-ray picture



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- <http://ard.bmj.com>
- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 35. Management of a patient with asthmatic status.

Purpose: to acquire communication skills and clinical examination skills of a patient with asthmatic status; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with asthmatic status ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with asthmatic status ; learn how to diagnose emergency conditions in patients with asthmatic status and master the tactics of providing emergency medical care; to be able to perform therapeutic manipulations in patients with asthmatic status.

Basic concepts: definition of the concept and reasons for the development of asthmatic status; mechanisms of the formation of bronchial obstruction and methods of its detection; clinical manifestations of asthmatic status; stages of asthmatic status and their clinical manifestations; modern approaches to the diagnosis of asthmatic status; clinical pharmacology of broncholytic and anti-inflammatory drugs; principles of providing emergency care for asthmatic status; differential diagnosis of asthmatic status with other conditions accompanied by broncho-obstructive syndrome.

PLAN

Theoretical questions:

- 1) Which type of asthma is more likely to develop asthmatic status?
- 2) What is the basis of the pathogenesis of asthmatic status?
- 3) What forms of status are allocated?
- 4) What are the characteristic symptoms of stage I asthmatic status?
- 5) What is the pathognomonic symptom of stage II asthmatic status?
- 6) As it appears. the third stage of asthmatic status?
- 7) What are the symptoms of the toxic effect of sympathomimetics?
- 8) Principles of treatment of asthmatic status.
- 9) How to treat asthmatic status of the 1st degree?
- 10) What is an unconditional indicator for bronchial lavage in asthmatic status?
- 11) What is the first harbinger of improvement in bronchial patency in asthmatic status?

- 12) What are the symptoms of the III stage of asthmatic status?
 13) Name the most important clinical signs that indicate the effectiveness of the ongoing therapy of asthmatic status.

Practical tasks:

1. Give the definition of status asthmaticus:

_____ complication of asthma that occurs usually as a result of _____ attack. It is characterized by edema _____ accumulation of _____, which leads to an aggravation of dyspnea and hypoxia. The development of status asthmaticus requires _____ therapy, mortality is about 5%.

2 Classification of status asthmaticus

Pathogenetic classification: give the definition of the various forms of status asthmaticus on the basis of their pathogenesis, specify their most characteristic features:

Slow onset status asthmaticus (metabolic):
Immediately developing status asthmaticus (anaphylactic):
Anaphylactoid status asthmaticus:

3. Stages of status asthmaticus. Specify the most characteristic features of the status asthmaticus stages :

First — relative compensation
The second decompensation ("silent lung")
Third — hypoxic hypercapnic coma

4. Give the main reasons that can lead to the development of status asthmaticus

Exacerbation of chronic or acute _____ diseases _____ system
_____ therapy, which is conducted in the acute phase of asthma
Withdrawal syndrome _____
Allergic reaction with _____ on medicinal substances : _____
Excessive intake _____

5. Differential diagnosis of bronchial asthma .

A number of diseases and conditions involving acute respiratory failure could be mistaken for an exacerbation of asthma. These include: - Disease or condition causing incomplete obstruction of the upper respiratory tract. The main symptom of these conditions– _____ the nature of dyspnea with the retraction of the supraclavicular and infraclavicular regions during inspiration, stridor;

- _____ of various etiologies (aspiration syndromes, inhalation of irritating gases and vapors, and others);

- Exacerbation _____ (this does not exclude the presence of severe asthma) ;

- _____ pulmonary artery;

- _____ lungs

6. Clinical picture, diagnosis, differential diagnosis: I stage. Specify the most specific features :

The origin, possible causes	
Cough, shortness of breath	
Posture	
Noises, wheezing	
Skin	
Percussion/ Auscultation	
Cardiovascular system	
CNS	
Laboratory parameters	
ECG	

7. Clinical picture, diagnosis, differential diagnosis: II stage. Specify the most specific features :

General state	
Cough, shortness of breath	
Posture	
Noises, wheezing	
Skin	

Percussion/ Auscultation	
Cardiovascular system	
CNS	
Laboratory parameters	
ECG	

8. Clinical picture, diagnosis, differential diagnosis: III stage. Specify the most specific features :

General state	
Cough, shortness of breath	
Posture	
Noises, wheezing	
Skin	
Percussion/ Auscultation	
Cardiovascular system	
CNS	
Laboratory parameters	
ECG	

9. Basic principles of treatment of status asthmaticus. Describe the main groups of medications used for the treatment of status asthmaticus

Stage:

Stage II:

Stage III:

Give the definition of respiratory failure.

5. Fill in the table the degree of respiratory failure

RF degree	Clinical features	SaO ₂ , %
I degree		

II degree		
III degree		

8. Patient, 56 years old, delivered by ambulance in a severe condition. From the anamnesis it is established that during 8-9 years the patient suffers from bronchial asthma and in the last 3 years taking daily 1 tablet of prednisone. 3 days ago a common cold resumed asthma attacks, which were not relieved, as usual, by Berotek inhalation (up to 10-12 times on the day of hospitalization). No sputum.

Objectively: condition is severe. Psychomotor agitation. Acutely (RR 40 in 1 min) expressed shortness of breath, noisy breathing, wheezing, with the participation of auxiliary muscles. Diffuse cyanosis. Cervical veins are swollen. Puffiness of the face. Percussion over chest - box sound. Breathing weakened, in some areas is not listening. Scattered dry rales. Heart rate/pulse 136 in 1 min., BP 170/95 mm Hg. Liver is palpable 3 cm below the costal margin, painful. No peripheral edema.

Questions:

Name the condition of the patient. Describe the respiratory distress syndrome in a patient.

Formulate a preliminary diagnosis. Formulate the program of examination and treatment.

List of recommended literature:

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- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 36. Management of a patient with anaphylactic shock and Quincke's edema.

Purpose: to acquire communication skills and clinical examination skills of a patient with anaphylactic shock and Quincke's edema ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with anaphylactic shock and Quincke's edema ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with anaphylactic shock and Quincke's edema ; learn to diagnose emergency conditions in patients with anaphylactic shock and Quincke's edema and master the tactics of providing emergency medical aid; to be able to perform therapeutic manipulations in patients with anaphylactic shock and Quincke's edema .

Basic concepts: basic etiological factors anaphylactic shock and Quincke's edema; mechanisms of formation of allergic reactions; clinical manifestations of anaphylactic shock and Quincke's edema; modern approaches to the diagnosis of anaphylactic shock and Quincke's edema; principles of providing emergency care for anaphylactic shock and Quincke's edema; differential diagnosis of anaphylactic shock and Quincke's edema with other conditions accompanied by broncho-obstructive syndrome.

PLAN

Theoretical questions:

- 1) Name the main types of anaphylactic reactions.
- 2) List the main pathophysiological effects of stimulation of H1 -histamine receptors.
- 3) Which drugs cause the highest percentage of anaphylactic shock and why?
- 4) Give the main clinical signs: a) a typical form of anaphylactic shock; b) asthmatic variant; c) hemodynamic form; d) abdominal shape; e) cerebral variant.
- 5) Define Quincke's edema.
- 6) Name the main medical measures of providing emergency medical care for AS.
- 7) Why is epinephrine the drug of choice for anaphylactic shock?
- 8) What properties of glucocorticosteroids determine the need for their use in anaphylactic shock?
- 9) In what periods of anaphylactic shock is the use of antihistamines not indicated?
- 10) What is anaphylactoid shock and how does it differ from anaphylactic shock?
- 11) Name the main medical measures of emergency medical care for angioedema.

Practical tasks:

1. Give a definition of anaphylactic shock:

2. Give a definition of angioedema:

3. List the options for the clinical course of anaphylactic shock:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

4. Clinical task 1.

The doctor in the Therapeutic department was urgently summoned to the patient F. 37 years, who about 20 minutes ago received an injection of bicillin-3. After 3 minutes after the injection complained of anxiety, severe headache, weakness, difficulty breathing, itching all over the body. Nurse entered the patient intravenous calcium chloride and diphenhydramine. The year before he was treated for community-acquired pneumonia and 3-day treatment with penicillin appeared urticaria, itching and an antibiotic was canceled. Objectively: the patient lies on the floor, unconscious, pale, blood pressure and heart rate are not specified, the terminal type of breathing "gasping" type.

1. Put a preliminary diagnosis.

2. Can we assume bicillin full allergen?

3. Whether the action of nurse?

4. What first aid measures are necessary in this situation?

5. What are the measures of prevention of this condition?

5. Clinical task 2.

On reception at the dentist, the patient K., 40 years after the local anesthesia had sudden and sharp pain that spreads throughout the abdomen, aggravated by movement and attempting to lay down, in connection with which the patient took a forced semi-sitting position. Complains of nausea, mentions vomiting once. Tenderness on palpation of the entire anterior abdominal wall, muscle tension anterior abdominal wall, positive symptom Shchetkina-Blumberg. Objectively: the patient is pale, clammy, cold sweat. Respiratory rate was 34/min, BP is 90/40 mm Hg., pulse 110 per minute, filiform. The patient entered spazmalgon intramuscularly, and in connection with a suspected acute abdomen called the ambulance. In the history of the patient H. allergic reactions to Strepsils plus (with local anesthetic) in the form of a rash.

1. What disease can be assumed in this patient?

2. What are the allergic types of interaction between allergens and antibodies?

3. What is the etiology of the disease?

4. What mistakes were made by the dentist?

5. What first aid measures are necessary in this situation?

6. What are the measures of prevention of this condition?

6. Clinical task 3.

Patient K., 39 years old complains of swelling of the face, tightness and tingling of the skin an hour after eating shrimp. On examination: the skin of the face, eyes, cheeks, lips, a swelling, protruding above the level of the surrounding skin, elastic consistency, pale pink color. Marked shortness of breath and hoarseness. Body temperature, heart rate, blood pressure norm. The abdomen is soft, painless, physiological departures in the norm.

1. Define an emergency medical condition that has developed in the patient.

2. Make the emergency care algorithm, and the rationale for each stage.

3. Show oxygen therapy equipment with the use of a nasal catheter.

4. How to change the algorithm of care in case of occurrence of pronounced cyanosis and loss of consciousness?

5. The use of a portable pulse oximeter in this situation.

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- <http://ard.bmj.com>

- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 37. Management of a patient with acute liver failure.

Purpose: to acquire communication skills and skills of clinical examination of a patient with acute liver failure ; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with acute liver failure ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with acute liver failure ; learn to diagnose emergency conditions in patients with acute liver failure and master the tactics of providing emergency medical care; to be able to perform therapeutic manipulations in patients with acute liver failure.

Basic concepts: causes of development of hepatic encephalopathy from minimal manifestations to hepatic coma; pathogenetic options; clinical features of the course of those diseases that lead to the occurrence of such a complication; diagnostic methods (endoscopy, ultrasound, liver tests, viral markers and others); existing standards of treatment, efferent methods of treatment; primary and secondary prevention; prognosis and performance.

PLAN

Theoretical questions :

1. Define acute liver failure syndrome.
2. List the etiological factors of acute liver failure.
3. What types of hepatic coma are distinguished ?
4. What are the clinical criteria for acute liver failure ?
5. Treat the main neuropsychological symptoms of liver failure.
6. What are the complications of acute liver failure ?
7. What is the diagnostic program for patients with acute liver failure ?
8. What emergency care should be provided at the pre-hospital stage ?
9. List the main principles of acute liver failure therapy.
10. What are the criteria for the effectiveness of acute liver failure treatment ?

Practical tasks:

1. Describe the main causes of liver failure:

Causes of liver failure:

Possible reasons:

1. Infections:

2. Toxic factors:

3. ischemia and hypoxia:

4. Metabolic disorders:

5. Other:

2. Classification of acute liver failure. Describe the main mechanisms leading to the development of various forms of acute primary disease:

Endogenous (spontaneous) form	
Exogenous (induced) form	
The mixed form	

3. Complete the description of the stages of acute liver failure.

Compensated stage liver failure manifested enhanced _____ fever, hemorrhage, weakness, impaired _____ and behavior.

Severe decompensated stage liver failure symptoms manifested reinforced previous step.

End-stage liver failure manifested breach of contact while maintaining an adequate response to _____, _____ confused, shouting, _____, and ends with stupor.

4. The main symptoms of liver failure. Fill the table

Syndrome	Clinical manifestations	instrumental manifestations
cholestasis syndrome		
The syndrome of hepatocellular insufficiency		
The syndrome of portal hypertension		
Hepatic encephalopathy		
Other		

5. Make a plan for the treatment of acute liver failure:

<p>Infusion therapy:</p> <p>Drug therapy:</p> <p>Other:</p>

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Topic 38. Management of a patient with acute renal failure

Purpose: to acquire communication skills and clinical examination skills of a patient with acute kidney injury; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with acute kidney damage ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with acute kidney damage ; learn to diagnose emergency conditions in patients with acute kidney damage and master the tactics of providing emergency medical aid; to be able to perform therapeutic manipulations in patients with acute kidney damage .

Basic concepts: definition of the term acute kidney injury; main criteria of acute kidney injury; etiological factors leading to the occurrence of acute kidney damage; RIFLE criteria for acute kidney injury; basic diagnostic methods; treatment tactics; disease prognosis; primary and secondary prevention.

PLAN

Theoretical questions:

1. Give the definition of AKI syndrome.
2. What are the main etiological factors of the development of AKI?
3. What forms of AKI are distinguished depending on the causative factors?
4. Describe the clinical manifestations of AKI.
5. What is the difference between functional and organic forms of AKI?
6. Give the modern classification of AKI (RIFLE)?
7. What complications can develop in patients with AKI?
8. List the changes in laboratory indicators that are characteristic of AKI.
9. What diagnostic program should be carried out in a patient with AKI?
10. Name the main principles of treatment of AKI.
11. What are the indications for renal replacement therapy?
12. What are the criteria for treatment effectiveness?

Practical tasks:

1. Give a definition of acute renal injury:
Acute kidney injury (acute renal failure) -
is _____

2. Fill in the table of acute renal damage according to the AKIN criteria of stages:

Stage	GFR	Diuresis
Risk (stage 1)		
Damage (stage 2)		
Insufficiency (stage 3)		
Loss of function		

4. Specify the five most common causes of the main types of acute renal injury:

Prerenal

Parenchymal:

Postrenal:

5. Choose the reason for the acute stage of kidney damage in these patients:

1. A patient 56 years old, long observed over the failure of the mitral valve IV cent., Was admitted to hospital with acute Q-myocardial infarction. Weight - 85 kg, BP - 95/60 mm Hg, serum creatinine - 190 mmol / l, the daily urine output - 950 ml.

2. The patient is 24 years old, male, weight - 70 kg, found under the rubble of the destroyed building. Serum creatinine - 128 mmol / l for 24 hours diuresis - 300 ml:

3. Patient 36 years old, examined at the worsening of rheumatoid arthritis. Weight - 59 kg, serum creatinine - 168 mmol / l, the daily urine output - 1.9l:

6. Clinical challenge:

The patient 26 years after undergoing a sore throat has marked pallor, anasarca, dyspnea, severe muscle weakness. Sick 3 weeks. Blood pressure - 180/110 mm Hg body weight - 55 kg. Urine output - 0.9 liters. The examination:

Blood count			
Hemoglobin	81 g / L	ESR	22 mm / h
Er	$2.9 \times 10^{12} / L$	BUN	19.8 mmol / L
CI	0.82	Total protein	43 g / L
Leukocytes	$9.0 \times 10^9 / L$	Creatinine	0.320 mmol / L

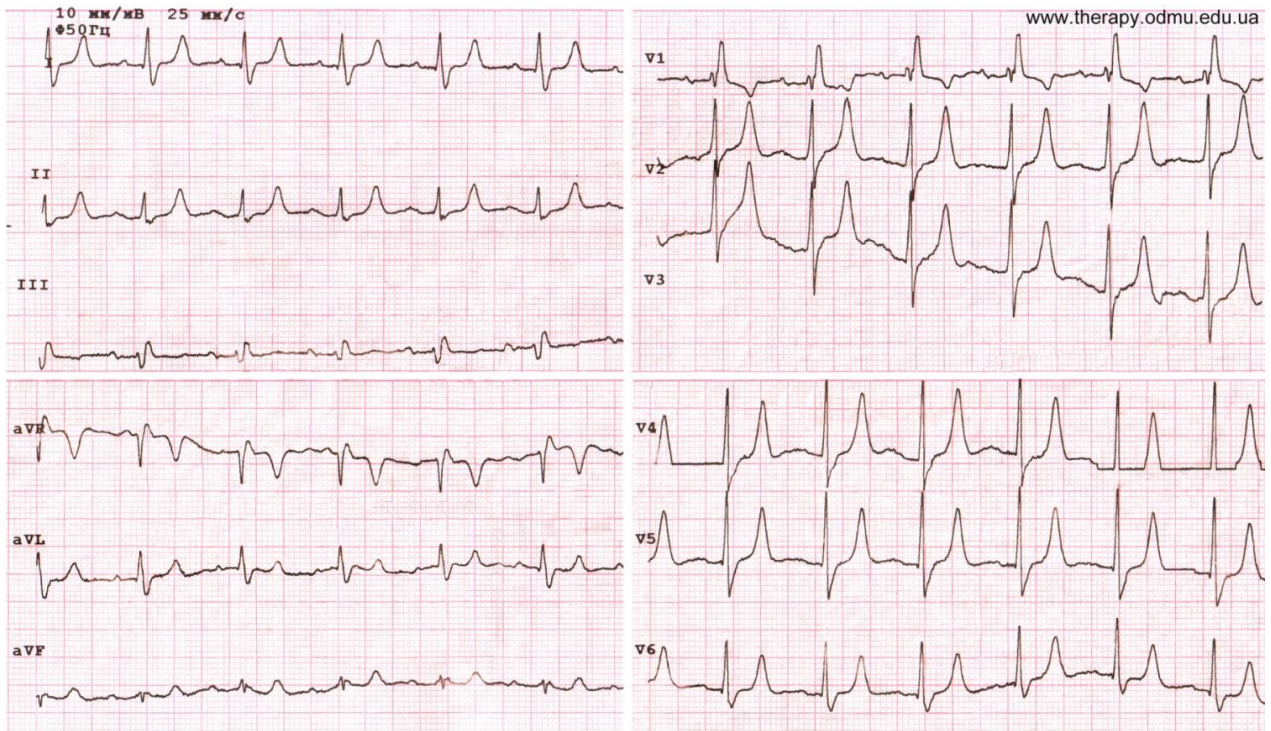
Urinalysis	
Spec. gravity	1.010
Protein	3.9 g / L
RBC, dysmorphic	30 in f / v
Hyaline casts	10-12 in f / v

Formulate a preliminary diagnosis:

Write a treatment plan for this patient:

What additional research is necessary for this patient?

ECG of the patient:



What changes are detected on an electrocardiogram?

Against the background of the treatment on the blood analysis showed the level of electrolytes Na + - 148 mmol / L, K + - 7.1 mmol / l. What would you add to the treatment plan?

7. Write indications for hemodialysis in patients with acute kidney injury:

List of recommended literature:

Basic literature:

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Topic 39. Management of a patient with acute abdominal pain. Management of a patient with gastrointestinal bleeding.

Purpose: to acquire communication skills and skills of clinical examination of a patient with acute abdominal pain; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with acute abdominal pain ; master the principles of treatment, recommendations for lifestyle changes in the management of patients with acute abdominal pain; learn to diagnose emergency conditions in patients with acute abdominal pain and master the tactics of providing emergency medical care; to be able to perform therapeutic manipulations in patients with acute abdominal pain .

Basic concepts: causes of acute abdominal pain syndrome development; pathogenetic options; clinical features of the course of those diseases that lead to the occurrence of such a complication; diagnostic methods (general blood test, liver tests, endoscopy, ultrasound, CT and others); existing treatment standards; primary and secondary prevention; prognosis and performance; causes of gastrointestinal bleeding; pathogenetic options; clinical features of the course of those diseases that lead to the occurrence of such a complication; diagnostic methods (general blood test, liver tests, endoscopy, ultrasound, CT and others); existing treatment standards.

PLAN

Theoretical questions:

- 1) Define acute abdominal syndrome.
- 2) List the main groups of causes that lead to the development of acute abdominal pain:
- 3) What should be paid attention to when interviewing a patient with acute abdominal pain?
- 4) What do you know about the possibility of the onset of pain ?
- 5) What information can be obtained during a physical examination of a patient ?
- 6) In which diseases is acute abdominal pain often observed in combination with a decrease in blood pressure (BP)?
- 7) Define acute stomach syndrome.
- 8) What diseases are characterized by the development of an acute abdomen ?
- 9) List the indications for urgent hospitalization of the patient.
- 10) What are the main principles of treatment of patients with acute abdominal syndrome at the pre-hospital stage ?

- 11) What are the main groups of causes of the development of SCC do you know?
- 12) thirteen . What diseases most often lead to the occurrence of SCC?
- 13) Describe the clinical manifestations of SCC depending on the level of its occurrence.
- 14) Name the main clinical syndromes of SAD.
- 15) What degrees of severity of hemorrhagic shock do you know?
- 16) List the main principles of diagnosis of SCC.
- 17) What are the main principles of treatment of SCC ?
- 18) Describe the main methods of stopping bleeding.

Practical tasks:

1. Specify the possible causes of acute abdominal pain

General	
CNS	
Peripheral nerves	
Heart	
Blood vessels	
Liver, bile ducts	
Lungs, pleura	
Kidneys, urinary tract	
Intestines	
Pelvic	
Other	

2. Specify at which symptoms need immediate medical help in case of acute abdominal pain

- Pain accompanied by _____, jaundice, _____ urine, severe nausea or vomiting, _____ chair;

- Sudden sharp stabbing pain _____, accompanied by vaginal _____ irregular, pain radiating to the shoulders;

- Severe persistent pain in the peritoneum after _____;

- A sudden very severe pain lasting more than _____ hours

Urgent hospitalization with the appearance of the following symptoms:

- Abdominal pain, accompanied by sudden vomiting or rectal _____ with _____;
- Dizziness, _____, _____ pulse _____ BP _____ skin.

3. The most important differential diagnostic features of acute abdominal pain. Complete the statement.

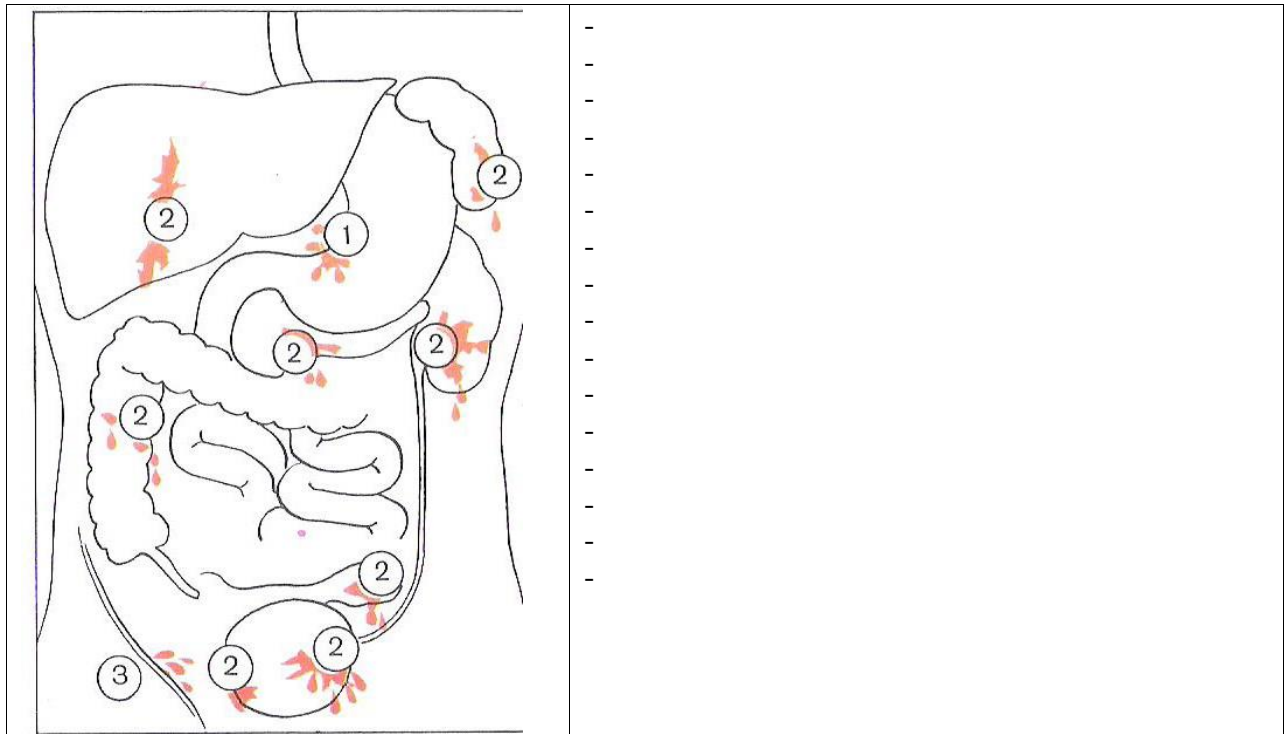
Set _____ pain. The pain is localized at the center of the abdomen, most likely it comes from _____. Severe pain, radiating to the back, or makes you think about or _____ or an aneurysm _____. Pain in the right half of the abdomen can come from _____. The pain of renal origin, beginning in _____, often radiating to the _____. Perforation or acute ischemia of the gastrointestinal tract from the beginning is accompanied by strong acute and _____. The pain that comes in waves and retreats (colic), may develop in acute _____, but can also occur when _____ obstruction - in this case, it has been steadily growing. If you suspect an obstruction must be excluded strangulated hernia - a painful education in _____ region. Severe diffuse abdominal pain may be caused by _____ the stomach and duodenum.

Visceral pain differs _____ character, lack of a clear _____, due to multisegmentarney innervation of internal organs and a small number of nerve endings in them compared with the skin and muscles. If the damage of the esophagus, stomach, gallbladder, biliary ducts, pancreas, pain in the _____ projected area; the pathology of the intestine, the cecum - in _____; with the defeat of the colon, the pelvic organs - in _____. Characterized accompanying vegetative reactions - _____ especially pronounced in acute visceral pain. Patients with a bout of visceral pain, such as bile, intestinal or renal colic, _____, frequently change posture, begin to thrash in pain, trying to find a position in which the pain subsides. Parietal pain: _____ it has character, has a clear _____ corresponding projection of the damaged portion of the peritoneum on the anterior abdominal wall.

4. Plan for a patient examination with acute abdominal pain. Complete approval, specify the most characteristic changes and disturbances.

Clarification of history. What should pay attention to?
The physical indicators. Blood pressure, heart rate, BH, etc.
Laboratory studies, including - special markers.
Instrumental studies

5. Specify the possible causes of acute gastrointestinal bleeding



6. Differential diagnosis. Indicate the cases in which a patient with acute abdominal pain should consider the prospect of immediate hospitalization of the patient for the purpose of surgical intervention

Dizziness, weakness, apathy;

· Arterial _____;

· Visible _____;

Fever;

· Re _____;

· Growing increase _____;

· Absence of a discharge of _____, _____ noise;

· Strengthening of _____ in the abdomen;

· Voltage _____;

· Positive symptom _____;

· Vaginal _____;

· Fainting during the act of _____.

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- <http://www.oxfordmedicaleducation.com/>

- <http://ard.bmj.com>

- <https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines>

Topic 40. Emergency conditions in the clinic of military therapy.

Purpose: to acquire communication skills and skills of clinical examination of a patient in emergency situations in a military medicine clinic; learn to establish a preliminary diagnosis, carry out a differential diagnosis and establish a clinical diagnosis of a disease in a patient in emergency conditions in a military medicine clinic; to diagnose emergency conditions in patients with emergency conditions in the military medicine clinic; determine tactics and provide emergency medical care to patients with emergency conditions in the military medicine clinic; to be able to perform medical manipulations on patients with emergency conditions in the military medicine clinic.

Basic concepts: x characteristic therapeutic pathologies in the war and disasters natural and man-made; features organization therapeutic assistance in local wars in the armed forces conflicts and disasters natural and man-made; principles medical sorting and organization emergency medical assistance to the wounded, injured and sick on stage evacuation; features medical evacuation support at firearms injuries, burns, frostbite and radiation effects; features medical evacuation support at damage combat poisonous substances and poisoned by poison technical fluids; about sobriety carrying out detoxification therapy on stage evacuation at acute poisoning; about sobriety carrying out antidote therapy on stage evacuation at damage combat poisonous substances; features pathogenetic and symptomatic therapy at injuries, lesions and diseases; about sobriety occurrence course and treatment diseases of internal organs in wartime.

PLAN

Theoretical questions :

1. Characteristic therapeutic pathologies in the war and disasters natural and man-made.
2. Features organization therapeutic assistance in local wars in the armed forces conflicts and disasters natural and man-made.
3. Principles medical sorting and organization emergency medical assistance to the wounded, injured and sick on stage evacuation
4. Features medical evacuation support at firearms injuries, burns, frostbite and radiation effects
5. Features medical evacuation support at damage combat poisonous substances and poisoned by poison technical fluids.
6. Features carrying out detoxification therapy on stage evacuation at acute poisonings.
7. Features carrying out antidote therapy on stage evacuation at damage combat poisonous substances
8. Features pathogenetic and symptomatic therapy at injuries, lesions and diseases.
9. Features occurrence course and treatment diseases of internal organs in wartime.
10. Organization qualified and specialized medical aid to the wounded and injured and sick

Practical tasks:

1. Describe what each line means in the request for medical evacuation according to standard NATO 9 Line:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.

2. Decipher a request for assistance you received submitted in NATO 9 Line format:

	Request line	How do you understand it
1.	47.9221212, 38.7404671	
2.	151.57250 FM, COYOTE 01	
3.	Alpha-1; Delta - 2	
4.	Charlie	
5.	Alpha -1; Bravo - 2	
6.	Dad	
7.	Charlie, green	
8.	Alfa-2, Echo-1	
9.	No	

3. You have arrived at the crash site of a passenger train, and found many injured of varying severity. Determine the order of evacuation for the victims and describe the volume of first aid to each of them (the team is just you and your assistant):

1. Woman in consciousness, is breathing 35 per minute, pulse 130 per minute, visually - Clothes in the blood. Crying, looking for her child.

Evacuation Line: _____

First aid:

2. The man is unconscious, not breathing. After tilting the head there is no spontaneous breathing.

Evacuation Line: _____

First aid:

3. A woman in consciousness walks around and asks for help, visually – abrasions on the right thigh and shin.

Evacuation Line: _____

First aid:

4. A man, unconscious, breathing 32 per minute, the radial pulse is not detected visually - traumatic separation of the left hand, continued bleeding.

Evacuation Line: _____

First aid:

5. Man, conscious breathing 25 per minute, the radial pulse -.. 106 per minute, says he feels strong pain in his left leg. Visually - signs of a closed fracture of the left tibia, multiple wounds left shin with no signs of ongoing bleeding.

Evacuation Line: _____

First aid:

4. Clinical task №1:

After an explosion at a chemical plant fire was carried out of the burning building workers were in the burning buildings for about 30 minutes. The victim is conscious, complains of a headache pulsating character, tinnitus, "fog" before the eyes, increasing muscle weakness, especially in the legs. On examination, it marked psychomotor agitation, euphoria, facial flushing pulse 96 beats / min, heart sounds weak, BP - 90/70 mm Hg. Art., 24 number of breaths per minute, vesicular breathing. The body temperature of 37.0 ° C.
Formulate and justify a diagnosis.

Conduct medical triage: in what place and in what condition should the patient be evacuated?

What first aid can have on the site?

What are the complications of this condition that may develop?

5. Clinical task №2:

After 2.5 hours after the accident at the nuclear power plant of the affected areas on the point of collecting the wounded delivered to the victim. He complains of severe headache, dizziness, increasing weakness, thirst, constant nausea and vomiting. These symptoms appeared after 5-10 minutes after irradiation and steadily grew. On examination, sluggish, slow-moving, there is flushing of the skin, redness of the sclera, vomiting continues. Pulse is 110 beats / min, rhythmic, muffled heart sounds, I of the tone at the top is weakened, BP - 90/70 mm Hg. Art., 24 number of breaths per minute. The body temperature of 38.7 ° C reading personal dosimeter 5.9 Gy.
Formulate and justify a diagnosis.

What first aid can have on the site?

In a health care facility must send this victim?

6. Specify the antidotes (if available), and first aid in case of poisoning with the following:
Ammonia:

Chlorine:

Carbon monoxide (CO):

Hydrogen cyanide: (HCN):

Phosphorus-organic compound (trichlorfon and so forth.)

Nerve agents (sarin, soman, VX):

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Topic 41. Peculiarities of management of seriously ill, incurable patients.

Purpose: to acquire communication skills and clinical examination skills of seriously ill, incurable patients; master the principles of treatment, recommendations for lifestyle changes in the management of seriously ill, incurable patients; learn to diagnose emergency conditions in seriously ill, incurable patients and master the tactics of providing emergency medical aid; to be able to perform therapeutic manipulations in seriously ill, incurable patients .

Basic concepts: creation of hospice care in a historical aspect; definition of hospice as a medical facility; hospice structure; principles of providing medical care in hospice conditions. Hospice charter; special requirements for hospice staff; types of anesthesia used in hospice care; the concept of "three-stage pain relief system"; peculiarities of ethical and deontological relations between doctor and patient in hospice practice; hospice care in pediatrics; ambulatory polyclinic link in the structure of hospice care.

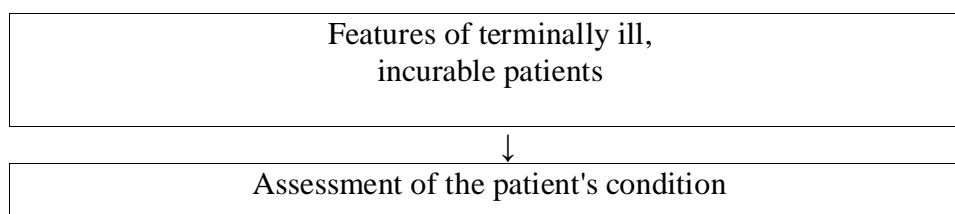
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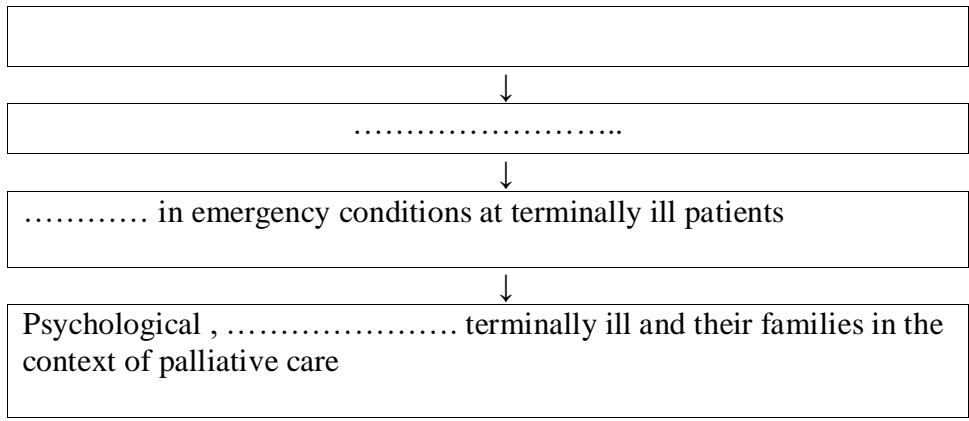
Theoretical question:

1. Creation of hospice care in a historical aspect
2. Definition of hospice as a medical facility
3. Structure of the hospice
4. Principles of providing medical care in hospice conditions. The charter of the hospice
5. Special requirements for hospice staff
6. Types of anesthesia used in hospice care
7. The concept of "three-stage pain relief system"
8. Peculiarities of ethical and deontological relations between doctor and patient in hospice practice
9. Hospice care in pediatrics
10. Outpatient polyclinic link in the structure of hospice care

Practical tasks:

1. Complete the block diagram:





2. Fill in the table:

Aspects of palliative care

Aspects of care	Purpose of care
Medical aspects	The elimination of pain
Psychological aspects	Reducing the patient's level of stress and fear for progressive disease
Social aspects	- Solvingquestions and issues. Support of..... for the patient, their family -
Cultural aspects

3. Fill in the table:

Foundations of palliative care strategy

Basic strategies	Basic principles
Respect for human rights and patients	Palliative care is an integral component of the health system
Human dignity
Social cohesion
Democracy	Ability to solve.....problems during an incurable disease
Equality, solidarity	Active therapeutic measures should only be applied.....
Freedom of participation in decision making and making choices	Access to palliative care services depends only.....
	Scientific research should be carried out

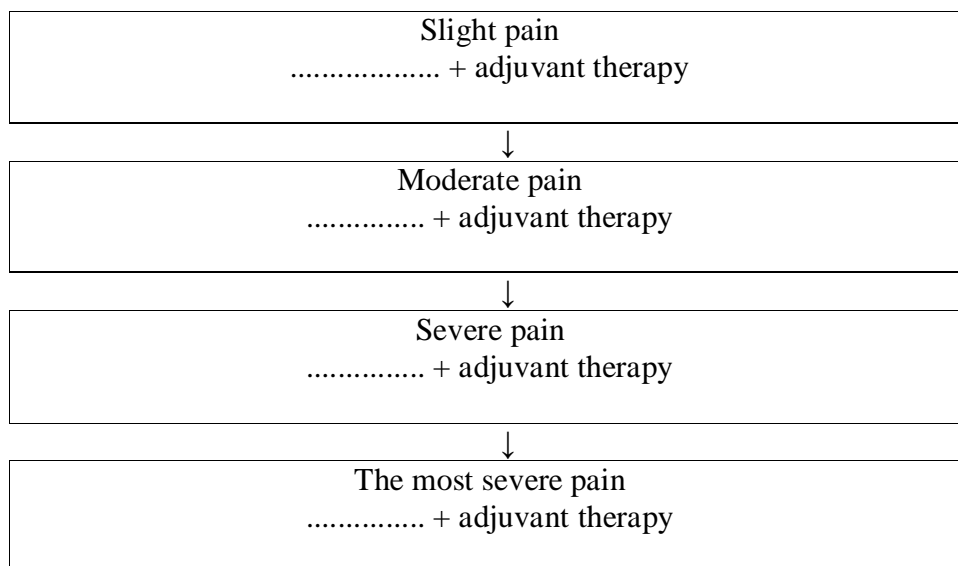
	Palliative care should receive adequate and equitable
--	--

4. Fill in the table:

Modern aspects of management of patients suffering from HIV - AIDS	
The aim of palliative treatment	To create for the patient and family the most favorable conditions for the period of life
Activities to achieve goals	- create..... conditions for the patient, - to learn to care for him..... ; - to save the patient.....
Criteria for selection of patients for palliative (hospice) care	- patients with malignant neoplasms..... stage; - AIDS patients in.....;- patients with non-cancer chronic progressive disease in..... stage of the disease (.....);- life expectancy is not more than.....
Indications for temporary hospitalization	- the need for the correction.....; - the need.....;- social indications(.....)

5. Complete the diagram:

Optimal pharmacotherapy of chronic pain in cancer



6. Complete the available links in the diagram:

The three-step "stairs of analgesia"
(analgesia steps; WHO)

3. Strong pain

..... ..Fenalin.....+ Adjuvants

2. Moderate pain

Aspirin/codeine..... + Adjuvants

1. Slight pain syndrome

Aspirin

.....

..... anti-inflammatories +

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