LECTURE COMPLEX

Name of the discipline: Emergency medical care-1
Discipline code: EMC-5302-1
Name of EP: 6B10101«General medicine»
Number of academic hours (credits): 150 hours (5 credits)
Course and semester: 5 course, 9 semester
Numbers of lectures: 10 hours

Shymkent, 2024 y.

The lecture complex was developed in accordance with the modular training program for the educational program «Emergency medical care-1» and was discussed at the meeting of the Department.

Protocol № _11_ from "_18_" 06_ 2024 y.

Head of Department, candidate of medical sciences, docent: Seidakhmetova A.A.

Lecture № 1

1.Topic: Organization of emergency medical care services in the Republic of Kazakhstan. Organization of medical care in emergency situations in the pre-hospital period.

2. Purpose: Training of the procedure for providing emergency medical care in the Republic of Kazakhstan.

3. Lecture theses:

1. Procedure for providing emergency medical care in the Republic of Kazakhstan.
2. Tasks of the ambulance service.
3. Urgency categories
4. Reception departments of multidisciplinary hospitals
5. Triage system
6. Organization of emergency medical care in emergency situations.

The procedure for providing emergency medical care in the Republic of Kazakhstan.

Since July 3, 2017, the order of the Minister of health of the Republic of Kazakhstan No. 450 "on approval of the procedure for providing emergency medical care in the Republic of Kazakhstan" entered into force in a new version.

Principles of emergency medical care:

1) viewing the scene;
2) first-time inspection, assistance;
3) call an ambulance;
4) second look.

Viewing the scene * is not dangerous for you? "What happened?" * How many victims? * Is there a situation where those around you can help you? Pay attention to every thing when viewing. This indicates the original causes of the incident or injury. If the affected person is unconscious, and there are no witnesses, it is very important to look radically.

First-time examination, first aid to the victim (primarily aimed at identifying the threat to vital organs):

1) examination of consciousness (brain system);
2) breath test;
3) checking the pulse (heart function);
4) call an ambulance.

EXAMINATION OF THE VICTIM.

In general systematic first aid, the examination of the victim is an important part. He always has to check his head first, and then hold his hand and look. It allows you to determine whether the skull has softened or cracked, the presence of bleeding. When examining the face, you should pay attention to its color. Pale, sweaty, with a cold face, eyes closed and mouth open, it proves to be in a state of fainting. If the face is hot and red, it means feverish. Nosebleeds can be caused by damage to the skull, nasal bones, or blood vessels in the nose. If you have a broken nose, it is easy to notice. The examination of the eyes is performed to identify other bodies, wounds, determine the state of enlargement of the pupils of the eyes, their reaction to light.

When examining the front of the chest, the integrity of the clavicle is checked by pressing on their middle part, and then the victim is asked to take a deep breath; if the ribs and chest cells are not damaged, then breathing will be straight, painless, smooth.

After examining the upper chest, an examination of the abdomen and pelvis is carried out. Visual examination of the hands and feet, if there is damage, the manual examination is carried out simultaneously.

It also checks the movement function of the hands and feet, their integrity, sensitivity, the presence of deformities, the place where the wound was, bleeding.
The examination allows you to determine the condition of the victim, identifies areas with significant damage, and establishes ways to provide first aid.
Calls received by the PMCs dispatcher are divided into 4 (four) categories of urgency:
- Call of the 1st (first) category of urgency – the condition of a patient who has a direct threat to his life, who needs to provide emergency medical care;
- Call of the 2nd (second) category of urgency – the state of the patient who poses a potential threat to his life without medical care;
- Call of the 3rd (third) category of urgency – the state of the patient who poses a potential threat to his health without medical care;
– Call of the 4th (fourth) category of urgency-the state of the patient, which does not pose a direct and potential threat to the life and health of the patient, without sudden and pronounced disorders of organs and systems, caused by an acute illness or complications of a chronic disease.

4. Illustrative material: presentation

5. Literature:

1. Order of the Ministry of Health of the Republic of Kazakhstan dated November 30, 2020 No. 225/2020 "On approval of the Rules for emergency medical care in the Republic of Kazakhstan".

6. Control questions:

- "Do you know the circumstances?"
- What are the diagnostic methods in unforeseen situations?
- What are the methods of the first clinical examination of the patient or victim?
- What are the methods of diagnosis and clinical research of unforeseen circumstances?
- What law regulates the activities of PMK?
- What is the triage system?
- What are the zones according to the triage system?
- What are the categories of invitations?

Lecture № 2

1. Topic: Terminal cases. Basic cardiopulmonary resuscitation.

2. Purpose: to learn how to assess the patient's condition in terminal conditions, identify the main symptoms. Familiarization with the manifestations of clinical death, learning to make a patient a basic CPR.

3. Lecture theses:

Terminal conditions refer to disturbances in the functioning of important organs - the heart, respiratory organs, etc. This is the intermediate state between life and death.
Stage 1 - Preagonia-the condition before agony. Characterized by disorders of the central nervous system and an immediate deterioration in hemodynamics. The patient is still conscious, but confused, has pale or bruised skin, a filamentous pulse, and a fast heart rate (tachycardia). Arterial pressure drops to 80 mmHg. Breathing becomes more frequent, superficial. Eye reflexes are preserved, the pupils of the eyes are narrowed, the reaction to light is weak. The duration of this phase is from a few minutes to several days.
Stage 2 - terminal pause-breathing and heartbeat stop for a few seconds.
Stage 3-agony-agony. During agony, there may be no consciousness, but the patient may be able to hear. The skin covers turn pale, acrocyanosis, marbled color of the head or cyanosis is observed. The pulse is determined only in large (carotid) arteries, bradycardia. Breathing rarely, without rhythm, "breathes" (agonal breathing); dilated pupils of the eyes, weak response to light; convulsions, involuntary urine, stool may be released.

This period lasts from a few minutes to a few hours.
Stage 4 - clinical death is a condition experienced by the body over a period of time.
Symptoms:
- loss of consciousness;
- the skin becomes pale, cold, cyanosis, root spots appear;
- pulse is not detected;
- breathing stops (apnea);
- dilated pupils, no reaction to light.

4. Illustrative material: presentation

5. Literature:

1. Vertkin A., Sveshnikov K. Guidelines for emergency medical care. Moscow. - Publishing house E. – 2017. – 560 p.
2. Emergency care in a therapeutic clinic. Edited by A.V. Gordienko. – Special Edition. – 2017. – 229 p.
3. Emergency outpatient cardiology: a brief guide / V. V. Ruksin. - 2nd ed. - Moscow : GEOTAR-Media, 2016. - 255 p
4. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. - 2018. – 896 p.

6. Control questions:
- What are the stages of terminal conditions?
- what is the sequence of medical care measures in terminal cases?
- What are the indications for making a diaper?
- What is the sequence of medical care measures during clinical death?
- What is the technique of performing the triple method of Safar?
- How do we assess the effectiveness of diaper measures?
- What are the mistakes in diaper driving?

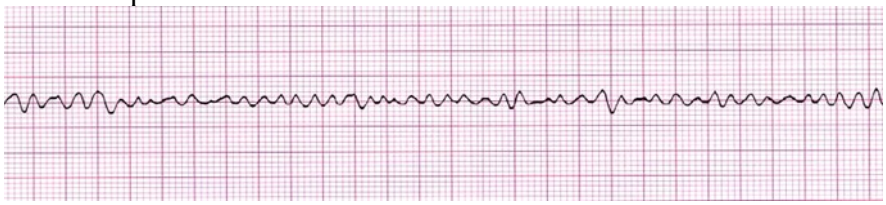
Lecture № 3

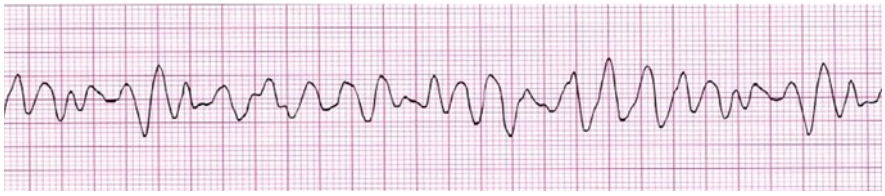
1.Topic: Extended cardiopulmonary resuscitation. Shock rhythm.

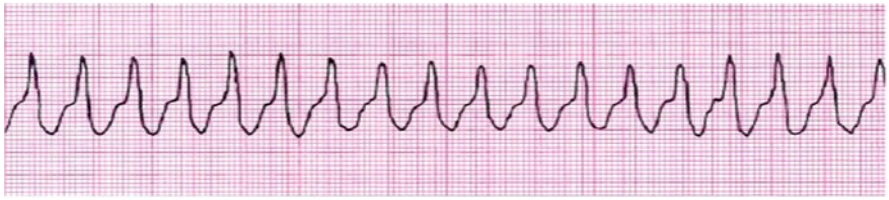
2. Purpose: to learn how to perform extended cardiopulmonary resuscitation during a shock rhythm.

3. Lecture theses:

Options for cardiac arrest:
1.ventricular fibrillation - unexplained zigzags appear on the ECG.
2. paroxysmal ventricular tachycardia without pulse - on the ECG
wide teeth of the same frequency of the same amlitude are formed.
If the heart beats 140-150 times per minute, this is pulsating, and if it beats 170-180 times, this is called "pulsating" ventricular tachycardia.
"Pulse" - is treated with medicines.
"Without pulse" - heals with defibrillation.







Early defibrillation.
In monophase defibrillator: 200 J - 300 J-360 J;
In Biphasic: 120 - 150 - 200 J.
* epinephrine (every 3-5 minutes) (0.1%) i/v with 1.0 ML (1 mg) + 10 ml with 0.9% NaCl solution.
Amiodarone (cordarone) 300 mg + 20 ml 5% glucose solution;
- lidocaine 1.5 mg/kg i/v drain.
• The second time: epinephrine 1.0 mg i/v, amiodarone 150 mg + 20 ml 5% glucose (lidocaine 1.0 mg/kg i/v).
* Torsadepointes: 10 ml of sulfate magna 25% solution i/v.

4. Illustrative material: presentation

5. Literature:

1. Vertkin A., Sveshnikov K. Guidelines for emergency medical care. Moscow. - Publishing house E. – 2017. – 560 p.
2. Emergency care in a therapeutic clinic. Edited by A.V. Gordienko. – Special Edition. – 2017. – 229 p.
3. Emergency outpatient cardiology: a brief guide / V. V. Ruksin. - 2nd ed. - Moscow : GEOTAR-Media, 2016. - 255 p
4. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. - 2018. – 896 p.
5. The clinical protocol for the diagnosis and treatment of "Sudden death". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated June 19, 2024. Protocol No. 208.

6. Control questions:
- "What is a shock rhythm?"
- What is the sequence of medical care measures during a shock rhythm?
- What is the reflection of the shock rhythm on the monitor?
- When and how is defibrillation performed?
- When, in what dosage is epinephrine administered?
- When, in what dosage is amiodarone administered?
- When, in what dosage is magnesium sulfate administered?

Lecture № 4

1.Topic: Extended cardiopulmonary resuscitation. Non shock rhythm.

2. Purpose: to learn how to perform extended cardiopulmonary resuscitation in a shock-free rhythm.

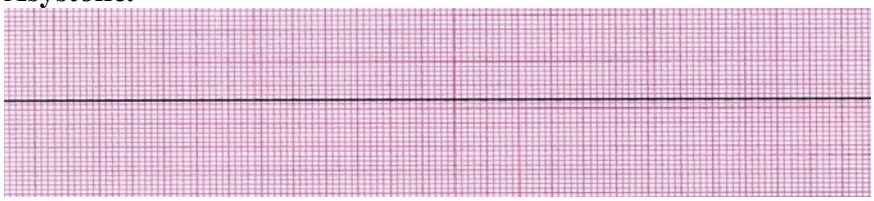
3. Lecture theses:

Options for cardiac arrest:

1. asystole

2.electromechanical dissociation - the electrical activity of the heart is preserved, but the heart does not contract "electric activity without pulse" - the ECG contains teeth close to the norm, but without pulse.

Asystolic.



EMD

5 H:

Hypoxia - (Hypoxia)

Hypovolemia - (Hypovolemia)

Hyperkalemia, hypokalemia- (Hyper/Hypokalemia)-

Hypothermia - (Hypothermia)

Acidosis - (Hydrogen ion)

5 T:

Valve pneumothorax

Heart Tamponade

Toxins

Pulmonary artery Thromboembolism

Heart artery thrombosis

100% oxygen supply to the ventilator using an ambu bag.

(intubation or insertion of a laryngeal mask.

* Venepunction or venocateterization (to the peripheral vessels).

* Monitoring the condition (heart rhythm, saturation and.

Asystolia and EMD:

* On the CPR C-A-B.

* Defibrillation is not performed.

* CPR 30: 2 (regardless of the number of resuscitators).

Epinephrine (every 3-5 minutes) (0.1%) i/v in 1.0 ml (1 mg) of 10 ml of NaCl isotonic solution.

Atropine (0.1%) i/v 1.0 ml (1 mg), every 3 minutes.

4. Illustrative material: presentation

5. Literature:

1. Vertkin A., Sveshnikov K. Guidelines for emergency medical care. Moscow. - Publishing house E. – 2017. – 560 p.
2. Emergency care in a therapeutic clinic. Edited by A.V. Gordienko. – Special Edition. – 2017. – 229 p.
3. Emergency outpatient cardiology: a brief guide / V. V. Ruksin. - 2nd ed. - Moscow : GEOTAR-Media, 2016. - 255 p
4. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. - 2018. – 896 p.
5. The clinical protocol for the diagnosis and treatment of "Sudden death". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated June 19, 2024. Protocol No. 208.

6. Control questions:

- "What's a shock-free rhythm?"
- What is the sequence of medical care measures during a shock-free rhythm?
- What is the reflection of the shockless rhythm on the monitor?
- When, in what dosage is epinephrine administered?
- When, in what dosage is atropine administered?

Lecture № 5

1. Topic: Emergency care in case of hypertensive crisis.

2. Мақсаты: To learn the description , clinical manifestations of a hypertensive crisis. Mastering the skills of providing primary pre-medical care in HC.

3. Lecture theses:

Hypertensive crisis

Hypertensive crisis (GK) – also 180/120 mm.S. B. sudden increase to high or individual high volumes. A complicated hypertensive crisis is manifested by a deterioration in blood circulation in the brain, kidneys, and Crown, and requires a decrease in BP within the first minutes and hours with the help of Parenteral drugs. An uncomplicated hypertensive crisis is characterized by the absence of damage to the target organs and refers to a condition in which it is relatively necessary to reduce the BP in a few hours.

Types of uncomplicated hypertension crises:

1. Neurovegetative.
2. Watery-salty.
3. Convulsive.

Complications of hypertension crises

1. cerebrovascular:

- acute cerebral circulatory disorder (stroke, subarachnoid hemorrhage);
- acute hypertensive encephalopathy, known as brain edema.

2. Cardial:

- acute heart failure;
- myocardial infarction, acute coronary syndrome.

3.Acute folding of the aorta, rupture of the aortic aneurysm.

4. acute liver failure.

5.acute retinopathy accompanied by blood transfusion to the retina of the eye.

Risk groups:

1.hypertensive disease.
2.symptomatic arterial hypertension.
3.Renovascular arterial hypertension.
4.Diabetic Nephropathy.
5.pheochromocytoma.
6.acute glomerulonephritis.
7.eclampsia of pregnant women.
8.diffuse connective tissue disease, accompanied by damage to the kidneys.
9. Use of sympathomimetic substances (more often cocaine).
10. head injury.
11.severe burns and others.

Criteria for the diagnosis of uncomplicated GK.

Characteristic of the neurovegetative type of hypertensive crisis:

- sudden onset;
- increase in systolic pressure, including rapid pulse;
- chills, agitation, irritability, feeling scared;
- moisture and redness of the skin cover;
- thirst;
- headache;
- nausea;
- eye twitching or blurring;
- tachycardia;

– at the end of the crisis-frequent and abundant discharge of light-colored urine.

Observed in the aqueous-salty form of a hypertensive crisis:

- increase in diastolic pressure, including rare heart rate;
- lethargy, drowsiness;
- pallor;
- swollen;
- headache;
- nausea, vomiting;
- paresthesias;
- short-term weakness in the legs, hemiparesis, aphasia, diplopia.

Observed in the convulsive form of a hypertensive crisis:

- a sharp increase in systolic and diastolic pressure;
- psychomotor neglect;
- severe headache, dizziness;
- nausea, repeated vomiting;
- those that cause blindness-visual disturbances, double vision and others.
- fainting;
- clonus-tone cramps.

List of Main Events:

1.assessment of the general condition of vital organs: consciousness (dazed, unconscious), breathing (tachypnea).

2. visual assessment:

- patient's posture (lying, sitting, orthopnea);
- skin color and moisture content;
- neck veins (venous edema, manifestation of pulsation);
- presence of peripheral edema.

3. Heart Rate Study (correct, incorrect), CPR measurement;
4.measurement of the AKP on both hands every 15-30 minutes.
When high systolic blood pressure and tachycardia double:
- Propranolol (non-selective ß adrenoblocker)-10-40 mg for ingestion;
- Clonidine (the drug acts centrally) – 0.075-0.150 mg under the tongue.
When diastolic blood pressure increases in predominance or when systolic blood pressure and diastolic blood pressure increase equally:
- Captopril (APF inhibitor) - 25 mg under the tongue;
– Nifedipine (calcium channel type II blocker, dihydropyridines) - 10-20 mg under the tongue.
Complicated hypertensive crisis:
1. airway sanitation.
2.Oxygenotherapy.
3.penetration into the vein.
4.treatment of Advanced complications and hypotensive drugs.
5.antihypertensive therapy is carried out with parenteral drugs.
6.accelerated reduction of ACS (15-20% in 1 hour, then 160 and 100 mm Hg in 2-6 hours).
4. Illustrative material: presentation
5. Literature:
1. Clinical protocol for the diagnosis and treatment of "Hypertensive crisis". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated June 23, 2016. Protocol No. 5.
2. Hypertensive crises: pathogenesis, clinical picture, diagnosis, treatment and prevention. Textbook for doctors / N.I. Gaponova [et al.]. – M.: Libri Plus, 2014. - - 120 p. Fundamentals of Extensive Trauma Care: Reference Edition: D. Skinner, P. Driscoll 4th Edition, 2018 ICRC
6. Control questions:
- What are the manifestations of a hypertensive crisis?
- What is the sequence of medical care measures during a hypertension crisis?

Lecture № 6
1. Topic: Acute coronary syndrome. Myocardial infarction.
2. Purpose: To teach students to analyze the algorithm for monitoring patients with acute coronary syndrome in the pre-hospital period.
3. Lecture theses:
Acute myocardial infarction
Definition: myocardial infarction-it develops due to ischemic necrosis of the heart muscle and acute coronary circulatory failure.
Classification:
* to damage and depth of the heart muscle;
* type of disease development;
* Depending on the localization of the brain;
* depending on the stage of the disease;
* Due to brain complications.
Depending on the depth and volume of damage to the heart muscle: transmural and non-transmural brain.
The disease is divided according to the type of development: primary, secondary, recurrent (relapsing) brain.

Primary brain –this is the so –called primary brain when no symptoms of the brain have previously been identified during the patient's life history and instrumental examinations.
Secondary brain-this is if, according to documentary data, the brain experienced in the patient is identified and specific signs of a new necrotic Focus are identified.
A recurrent (recurrent) brain is a brain in which a new focus of necrosis with Clinico –laboratory and instrumental symptoms occurs over a period of 72 hours (3 days) to 28 days or occurs at the end of the main scarring process.
Depending on the location of the brain: anterior septal (anterior septal); anterior end; anterior lateral; anterior basal (anterior superior); posterior posterior (septal tip, lateral); posterior occipital (lower); posterior lateral; posterior main; spreading anterior; right ventricular brain.
By the course of the disease:
* more acute stage-up to 2 hours after the start of the brain;
* acute phase-up to 10 days from the start of the brain;
* acceleration period-from the 10th day to 4-8 weeks after the appearance of the brain;
* post-infarction period-4-8 weeks after the appearance of the brain.
Often spreading complications of the brain include: acute left ventricular failure (pulmonary edema); cardiogenic shock; ventricular and supra-ventricular rhythm disorders; conduction disorders (CA block, AV block, GIS block); acute left ventricular aneurysm; external and internal myocardial rupture, cardiac tamponade; aseptic pericarditis; thromboembolism.
Diagnostic criteria:
Complaints and Anamnesis-the main clinical signs of the brain include severe angina-fracture. Angina pain in the brain is similar to heart cramps. But the pain is more intense and has the same character as "piercing", "fermenting", "stabbing", "stabbing". The sensation of pain develops like a wave, decreases in stages, but the pain does not completely subside. The location of anginal pain is most often located inside the chest, less often-in the area of half of the left chest or above the abdomen. Angina pain radiates to the left shoulder, shoulder, left arm, most often in the morning, there is pain that lasts for several hours, which does not subside under the influence of nitroglycerin.
There are other variants that occur at the initial stage of brain formation.They are: asthmatic, abdominal, arrhythmic, cerebrovascular, or asymptomatic.
* Asthma type - most often occurs in patients with a voluminous brain, repeated. In the clinic, acute left ventricular failure develops.
* Abdominal type-the location of the pain syndrome is characterized by dyspeptic manifestations. Most often, a lower myocardial infarction develops.
* Arrhythmic type-if there is a pronounced rhythm and conduction disorder in the clinical picture, paroxysms, supraventricular or ventricular tachycardia, complete AV block develop.
* Cerebrovascular type-most often occurs in elderly patients or people with circulatory disorders of the head. It is characterized by dizziness,vomiting-symptoms of disorders of the blood supply to the brain–and sometimes these complaints are rare or not at all.

4. Illustrative material: presentation

5. Literature:

1. Clinical protocol for diagnosis and treatment of "ST-segment elevation myocardial infarction". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated November 10, 2017, Protocol No.32.
2. Clinical protocol for diagnosis and treatment of "ACS without ST segment elevation (Unstable angina pectoris, myocardial infarction without ST segment elevation)". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan on June 23, 2016. Protocol No.5.

3. Emergency medical care. Clinical recommendations / ed.: S.F. Bagnenko. - M.: [B. I.], 2015. - 871 p.

6. Control questions:

- "What are the specs?"
- What is the sequence of medical care measures during the ACS?

"What's your name?"

- What is the sequence of medical care measures during the brain?

Lecture № 7

1. Topic: Acute heart failure. Cardiogenic shock. Pulmonary artery thromboembolism.

2. Purpose: acute heart failure. Cardiogenic shock. To teach the general principles of pathophysiology and emergency care of pulmonary artery thromboembolism.

3. Lecture theses:

In diseases of the cardiovascular system, it often requires urgent medical care. The first medical worker to be found next to the patient is a nurse. In many cases, due to the remoteness of the doctor's office, he is the only medical worker. Therefore, it is responsible for the health and life of the patient. His knowledge and skills in each situation, accurate, accurate, correct actions in urgent situations affect the end of the disease and the patient's life. The nurse of the hospital and clinic often provides assistance on her own. Even in intensive care, the role of a nurse is important, that is, to carry out measures to treat and prevent vital disorders of the body that pose a threat to the patient's life. Therefore, the nurse should be able to clearly, accurately, correctly assess the patient's condition, provide timely assistance, carry out further care of the patient. Heart failure is formed by left and right ventricular symptoms.

Cardiac asthma. Cardiac asthma is a clinical picture of acute left ventricular failure, which occurs with a sudden asthma attack that leads to suffocation. Therefore, within the framework of small blood circulation, the blood stagnates and accumulates, and the gas exchange drug in the lungs is disrupted, the carbon content increases, and the oxygen level in the arterial blood decreases. In the organs, especially in the central nervous system, the supply of blood and blood is reduced. The excitability of the respiratory center increases, leading to suffocation, the development of asthma. The congestion of blood in the lungs causes the bronchi to reflexively narrow and the mucus fluid to escape from its openings, leading to lung cancer. Cardiac asthma in patients with arterial hypertension, acute myocardial infarction, cardiosclerosis, myocarditis, aortic heart defect and mitral stenosis, with impaired blood circulation in the brain, the lack of blood circulation in the brain affects the respiratory center, leading to cardiac asthma combined with cardiosclerosis. A cardiac asthma attack habitually develops during sleep at night. The patient suddenly wakes up from a lack of air (suffocation) and fear of death. Suffocation is sometimes characterized by severe coughing and coughing. The patient has such a lack of oxygen that in order to breathe, he can only breathe (if his condition reaches this), forcing the patient to sit on the bed, lower his legs down or go to an open window. The patient is held on both sides of the bed while sitting on the bed. In the early stages of a seizure, you can see and notice a feeling of fear on the patient's face, enlarged eyes, anxiety. On the skin and mucous membranes of the skin whitish color then mold appears. The patient can also notice profuse sweating, enlarged and protruding Blue Veins of the neck. The lack of oxygen causes mixed characteristics and symptoms. Under the influence of the presence of a chronic cough, sputum becomes mixed with blood. The pulse is frequent, sometimes arrhythmic. Blood pressure can be normal at the first time of a seizure, and then drop sharply to the point of fainting. Due to a decrease in blood pressure, the blood and fullness of the blood vessel decreases, and the tone of

the heart is not heard. The basis that helps to establish the definition of the disease is changes in the respiratory organs. The breath rate for 1 minute goes to 40 – 60. Wet wheezing is heard at the bottom of the lungs. The course and prognosis of cardiac asthma are characterized by different differences. The reason for this is that one attack of cardiac asthma begins suddenly, and another type of attack is characterized by an increase in the patient's heart rate, an increase in oxygen deficiency, the presence of a dry cough, and a deterioration in the general condition. Sometimes a seizure lasts for quite a long time and can lead to swelling of the lungs, shortness of breath, inhibition and destruction of the respiratory center. At the same time, it is very important for a medical professional to be able to distinguish an attack of cardiac asthma from an attack of bronchial asthma in order to be able to carry out the correct emergency measures in case of an attack of cardiac asthma and to be able to carry out therapeutic and care measures in a specific way.

4. Illustrative material: presentation

5. Literature:

1. Clinical protocol for diagnosis and treatment of "Acute heart failure". Approved by the Protocol of the Expert Commission on Health Development of the Ministry of Health of the Republic of Kazakhstan dated June 28, 2013 Protocol No. 13.
2. Clinical protocol for diagnosis and treatment of "Cardiogenic shock". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan on November 29, 2016. Protocol No.16.
3. Clinical protocol for diagnosis and treatment of "Cardiogenic pulmonary edema". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan on November 29, 2016. Protocol No. 16.

6. Control questions:

1. What is the definition of acute heart failure syndrome and their main clinical manifestations?
2. What is the definition of cardiogenic shock syndrome and their main clinical manifestations?
3. What is the definition of pulmonary artery thromboembolism and their main clinical manifestations?
4.What is the scale of emergency assistance and transportation features in cardiogenic shock?

Lecture № 8

1. Topic: Acute pulmonology.

2. Purpose: to teach the general principles of pathophysiology of acute respiratory failure syndrome and first aid.

3. Lecture theses:

Acute respiratory failure is a disorder of gas exchange between the outside air, accompanied by hypoxemia and/or hypercapnia of circulating blood, which develops in a period of a few minutes to several days.

The normal function of the respiratory system depends on the functioning of many of its components (the respiratory center, nervous systems, muscles, chest, respiratory tract and alveoli).

If the work of one of these listed is disrupted, it can lead to the development of acute respiratory failure.

Causes:

1.respiratory failure occurs due to impaired central respiratory function. They are the following:
* Stress of the respiratory center with drugs, barbiturates.

* Violation of the respiratory center by metabolic substances (carbon dioxide, non-fully acidified acids).
* Disorders of the respiratory center associated with stroke, traumatic brain injury, brain tumor, etc.
2. Thoracodiaphragmal respiratory failure occurs after:
* In the presence of Hemo-pneumothorax in thoracic pathologies (rib fractures).
3. bronchopulmonary respiratory failure occurs in a pathological process in the lungs and respiratory tract:
* Obstructive (foreign bodies, asthmatic status, tumors, bronchial glands secreting a large number of SL.
* Destructive (in acute pulmonary inflammation, pneumatorax).
Diffuse (toxic lung cancer, pulmonary artery thromboembolism).
Clinic: the main symptom is shortness of breath, diffuse cyanosis on the skin, tachycardia, high blood pressure, excitement. As respiratory failure increases, the skin turns red and bloodletting (injection) of the vessels of the sclera conjunctiva develops. The patient is inhibited, bradycardia, blood pressure decreases. In hypercapnian coma, the patient loses consciousness, areflexia, mydriasis occurs. Blood pressure is very low, arrhythmias are observed. Breathing pathologically Chyna-Stoxa, Biot. Then his heart stops and he dies.
Ambulance:
1.comfort the patient, ventilate the room with fresh air.
2.if possible, do inhalation with hydrated oxygen.
3.restore airway patency: clean the oral cavity with a napkin, handkerchief, clean the pharyngeal larynx with an electrootsos with a rubber catheter, if it is not available, with a rubber syringe or syringe.
4.bronchospasm slowly enter 10 ml -0.9% sodium chloride with 10 ml -2.4% euphylline into the vein.
5.in severe cases, inject 60-90 mg of prednisolone into the vein or muscle.
6.when breathing stops, immediately perform mouth-to-mouth or "mouth-to-nose" or "mouth-to-mouth" artificial respiration. Such patients should be taken to the intensive care unit immediately. It treats the underlying disease (antibiotic treatment for pulmonary inflammation, elimination of asthmatic status, thrombolic treatment for pulmonary artery thromboembolism) artificial pulmonary ventilation, hyperbaric oxygenation.
4. Illustrative material: presentation
5. Literature:
1. Clinical protocol for diagnosis and treatment of "Asthmatic status". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated June 23, 2016. Protocol No. 5.
2. Clinical protocol for diagnosis and treatment of "Asphyxia". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated June 23, 2016. Protocol No. 5.
3. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. - 2018. – 896 p.
6. Control questions:
- Triage events caused by acute respiratory failure;
- What are the Heralds, distinguishing symptoms of bronchial and cardiac asthma attacks?
- What are the causes and symptoms of true and false paringospasm?
- How do we use the nebulizer to suppress an attack of bronchial asthma?

- What is the technique for performing the Heimlich method, depending on the age and physique of the patient?
- What drugs are used for acute respiratory failure?

Lecture №9

1. Topic: Emergency allergology.

2. Purpose: to learn how to diagnose allergy conditions and provide assistance. Assistance in anaphylactic shockexamination with algorithm.

3. Lecture theses:

Anaphylactic shock is a life-threatening pathological process that occurs as a result of an allergic reaction that develops immediately if an allergen enters the body and is characterized by severe disorders of the circulatory, respiratory, central nervous system.

Classification.

Flow-begins acutely, arterial pressure decreases rapidly, fainting, shortness of breath increases. The peculiarity of this course is that the active anti-shock treatment carried out is resistant and develops to a progressive deep comatose state. In the first minutes or hours, it leads to death due to damage to vital organs.

This current can take place in two forms. With acute respiratory failure or acute vascular failure. In the form of acute respiratory failure, there is a sudden weakness and acceleration, a feeling of tightness in the chest, lack of air, cough, expiratory shortness of breath, headache, pain in the heart, fear. The skin is pale, cyanotic. Difficulty breathing, dry wheezing at the end of exhalation. Angioedema of the face or other parts of the body may develop. Acute respiratory failure can be fatal if it progresses and acute renal failure is added.

The reason for the appearance of anaphylactic shock: the appearance of the disease is caused by the onset of allergies. Sometimes even repeated use of the drug can be a source of trouble. The most basic causes of occurrence are: – the use of medicines without the permission of a doctor;- blood discharge from the body; – during X – rays or at the time of receiving diagnostic treatment; – during vaccinations; – through food poisoning; – insect bites; – intolerance to the cold. Anaphylactic shock: the clinical sign of the onset of the disease is manifested by exposure to internal or external forces. For example, various symptoms such as nausea, redness of the face, the appearance of spots, abdominal pain, diarrhea overlap. – drop in blood pressure; – fainting, trembling, dizziness; – discoloration of the skin or bruising as if from a blow; – appearance of spots on the skin, such as Burns; – appearance of spots on the face, chin; – abdominal pain and nausea; - heart palpitations, shortness of breath.

Anaphylactic shock treatment: before anaphylactic shock is born, call an ambulance as soon as the above symptoms begin to appear. Do not stop measuring the blood pressure of the person who is sick until he arrives. And if the ambulance is late, immediately try to do the following: – lay the sick person upright. Place a pillow or tall object under both legs so that the blood pressure returns to normal. Move the lower jaw from time to time, remove if there is a denture on the tooth; – check heart rate and blood pressure; – give anti-seizure drugs. You should try even if you don't give in; - provide accurate information after the doctor arrives.

4. Illustrative material: presentation

5. Literature:

1. Clinical protocol for diagnosis and treatment of "Anaphylactic shock)". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan on December 12, 2014 Protocol No. 9

2. Allergy protocol of diagnosis and treatment of RCRS (Republican Center for Health Development of the Ministry of Health of the Republic of Kazakhstan)Version: Clinical protocols of the Ministry of Health of the Republic of Kazakhstan — 2013

6. Control questions:

- What are the causes, distinguishing features of emergency situations in Allergology?
- What are the signs of hunger?
- What types of anaphylactic shock are there?
- What is the treatment algorithm for anaphylactic shock?
- When and in what dosage is epinephrine administered in case of anaphylactic shock?
- When and in what dosage is euphylline administered in case of anaphylactic shock?
- When and in what dosage are hormones administered during anaphylactic shock?
- When and in what dosage are antihistamines administered in case of anaphylactic shock?

Lecture № 10

1. Topic: Emergency endocrinology.

2. Purpose: to improve the quality of life of patients in endocrinology teaching pathophysiology, clinic and general principles of emergency care.

3. Lecture theses:

Diabetes mellitus is a clinical syndrome of chronic hyperglycemia and glucosuria, conditioned by relative insulin insufficiency and insulin resistance, leading to metabolic disorders, vascular lesions (various angiopathies), neuropathies and pathological changes in various organs and tissues.

DM 1 Risk Factors: heredity for 1 DM, a number of infectious diseases (rubella, influenza, etc.).

Risk factors for decompensation DM 1 and DM 2:

- late diagnosis of the disease;
- non-compliance with the doctor's instructions (violation of the diet, intake of sugar-lowering drugs, including insulin);
- inclusion of intercurrent diseases.

Complaints and Anamnesis:

- thirst;
- polyuria;
- weight loss;
- weakness, etc.

Physical examinations

DM of Type 1 begins a bright manifest: thirst, polyuria, weight loss, weakness, etc.this type of diabetes is most often characterized by young people, including children.

The difference between Type 1 diabetes and Type 2 diabetes is that it starts unnoticed for the patient and the doctor.

Symptoms can occur without exception and in many other diseases: weakness, malaise, decreased ability to work. Type 2 DM is more common in the elderly with an increase in body weight. But in recent years, there has been an increase in the incidence of this disease among children.

Indications for hospitalization:

1.the first definition of Type 1 diabetes.

2.decompensation of DM 1 or DM 2 in case of ineffectiveness of outpatient treatment.

3.severe hypoglycemic or postgypoglycemic conditions.

4.hyperosmolar, lactic acid coma.

5.acceleration of the progression of complications DM 1 or DM 2.
6.for the medical social expert commission, examination of the severity of the disease.
A thyrotoxic crisis is a very dangerous condition for the life of a patient with complications. In this case, the entire symptom of thyrotoxicosis becomes obvious.
¬ Yes, " he said.
Will be excitation
Adynamia
¬ I'm sorry, " she said.
And the face turns red
Her eyes widened and her lashes fluttered.
Is the skin is hot
¬ T 41-42
¬ Sweating

4. Illustrative material: presentation

5. Literature:

1. Emergency conditions in diabetes mellitus. Textbook for doctors / N.I. Gaponova, N.F.Plavunov, V.R.Abdrakhmanov. – M.: [B. I.], 2016. – 107 p.
2. Clinical protocol for diagnosis and treatment of "Diabetes mellitus)".Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan on June 23, 2016. Protocol No. 5.
3. Mkrtumyan A.M., Nelaeva A.A. Emergency endocrinology. - GEOTAR Media. - 2018. – 128 p.

6. Control questions:

- What are the causes, distinguishing features of emergency situations in Endocrinology?
- What are the signs of decompensation DM 1?
- What are the symptoms of decompensation DM 2?
- What is the decompensation of DM 1?
- What is the decompensation of DM 2?
- What are the symptoms of a thyrotoxic crisis?
- What are the tactics of thyrotoxic crisis?
- What are the tactics of pheochromocytoma?