LECTURE COMPLEX

Name of the discipline: «Emergency medical care-2»
Discipline code: EMC-5302-2
Name of EP: 6B10101«General medicine»
Number of academic hours (credits): 120 hours (4 credits)
Course and semester: 5 course, 9 semester
Numbers of lectures: 10 hours

Shymkent, 2025 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 "26" 06 2025 y.

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

No. 1 lecture

Topic: Acute infectious pathology

Objective: To study common emergencies in the practice of infectious diseases and the principles of emergency medical care.

Lecture abstracts:

According to WHO, about 17 million people die from infectious diseases worldwide every year. The majority of deaths are caused by acute respiratory diseases (over 4 million), tuberculosis (about 3 million), infectious intestinal diseases, and malaria (about 2 million).

According to the speed of development of the clinical picture, according to the general nature of the course of the infectious disease, the following forms are distinguished:

a) lightning-fast,

b) the most acute,

c) acute,

d) subacute or prolonged and

e) chronic.

Most infectious diseases occur in an acute form.

During an infectious disease, it is customary to distinguish between several successive periods: incubation, prodromal, the period of active manifestations of the disease, usually coinciding with an increase in temperature, and convalescence, i.e. recovery.

The clinical picture of an infectious disease is determined by a set of common pathological signs (fever, varying degrees of intoxication, headache, loss of consciousness, etc.) and characteristic dysfunctions of individual organs and systems.

Taking into account epidemiological data and the duration of the incubation period, a number of issues related to the establishment of quarantines, the identification of nosocomial infections, and the necessary monitoring of the focus of the infectious disease are being addressed.

After the end of the incubation period, the prodromal period of the disease develops, in which the first precursors of the disease are detected; most often they do not have anything specific: headache, malaise, slight fever, etc.

However, in some infectious diseases, characteristic signs of the disease may occur already in the prodromal period.

For example, in the prodromal period of measles, pityriasis can be found on the oral mucosa (Velsky—Filatov—Koplik symptom), and with smallpox, skin rashes with a characteristic localization.

In case of infectious diseases, the emergency physician must establish a nosological diagnosis or a syndrome requiring emergency services, determine the indications and deliver the patient to the hospital with simultaneous emergency etiotropic, pathogenetic and specific therapy.

Urgent hospitalization through an ambulance call is subject to:

a) patients who require resuscitation measures already at the prehospital stage (infectious and toxic shock, hypovolemic shock);

b) patients with pronounced symptoms of toxicosis, organ failure, severe concomitant pathology, who need certain medical measures before transportation;

c) patients at risk of developing critical conditions. Urgent hospitalization of such patients (in the absence of epidemiological contraindications) can be carried out by ambulance.

Infectious and toxic shock.

The cause of infectious and toxic shock may be meningococcal sepsis, severe influenza with pronounced symptoms of toxicosis, as well as other acute infections with an unfavorable course

of the disease.

Infectious and toxic shock successively passes through the stages of compensation, subcompensation and decompensation.

The diagnostic signs of sub- and decompensated shock are distinct and consist in a decrease in blood pressure, tachyarrhythmia, tachypnea, oliguria and anuria, the development of hypothermia against a background of impaired consciousness and progressive deterioration of the general condition.

Meningococcal sepsis.

Infectious and toxic shock in meningitis is preceded by the occurrence and development of meningococcal sepsis, a permanent pronounced sign of which is a specific exanthema.

A few hours after the onset of the disease, a petechial rash of irregular stellate shape appears on the extremities, then on the buttocks and trunk, which becomes generalized within a few hours with mergers of individual petechiae into large hemorrhages and even into extensive blue-purple spots with areas of necrosis.

The brighter the rash, the more intense the meningococcemia. Hemorrhages affect the mucous membranes and parenchyma of internal organs.

References:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p

. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p

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

Security questions (feedback):

1. What are the features of providing care for various types of infectious diseases?
2. What are the features of providing assistance during a pandemic?
3. What is the algorithm of actions for particularly dangerous infections?
4. What is the meningitis clinic?
5. What is the meningitis care algorithm?
6. What is the encephalitis clinic?
7. What is the algorithm for treating encephalitis?
8. What is the clinic for infectious and toxic shock?
9. What is the algorithm for treating infectious and toxic shock?
10. What is the clinic of botulism?
11. What is the algorithm for helping with botulism?
12. What is the OKI clinic?
13. What is the algorithm for helping with OCI?

No. 2 lecture

Topic: Diseases and injuries of the nervous system. Emergency psychiatry.

Objective: To study common emergency conditions in the practice of neurological and psychiatric diseases and the principles of emergency medical care.

Lecture abstracts:

Stroke is an acute violation of cerebral circulation, characterized by sudden (within a few minutes, hours) the appearance of focal (motor, speech, sensory, coordination, visual and other disorders) and / or cerebral (changes in consciousness, headache, vomiting) neurological symptoms that persist for more than 24 hours or lead to the death of the patient in a shorter period of time due to cerebrovascular pathology.

The main clinical forms:

A. Transient disorders of cerebral circulation are characterized by the sudden appearance of focal neurological symptoms that develop in a patient with vascular disease (arterial hypertension, atherosclerosis, rheumatism, etc.), last for several minutes, less often for hours, but not more than a day and end with a complete restoration of impaired functions.

- Transient ischemic attacks (TIA) - transient episodes of neurological dysfunction caused by regional ischemia of the brain, spinal cord or retina tissues, but not leading to the development of an ischemic infarction (without specifying the time!)
- Acute hypertensive encephalopathy - a condition associated with an acute, usually significant rise in blood pressure and accompanied by the appearance of cerebral, less common are focal neurological symptoms secondary to hypertension.
- "Minor stroke" (reversible neurological deficit) is a clinical neurological syndrome that develops as a result of an acute violation of cerebral circulation, in which the dysfunction is restored during the first 3 weeks of the disease.

B. Ischemic stroke is a clinical syndrome represented by focal and/or cerebral disorders that develops suddenly due to the cessation of blood supply to a certain part of it as a result occlusion of the arteries of the head or neck with the death of brain tissue.

B. Hemorrhagic strokes (GI) are non–traumatic hemorrhages in the brain and spinal cord.

Diagnostic criteria for cancer:

ONMC develops suddenly (minutes, less often hours) They are characterized by the appearance of focal and/or cerebral and meningeal neurological symptoms.

The ambulance stage. The algorithm of actions.

FAS test (face, hand, speech/language – "smile, raise your hands, speak")

The patient is asked to smile, show his teeth, and an asymmetry of the face is noted during a stroke.

The patient is asked to lift and hold for 5 seconds. both arms are 90° in the sitting position and 45 ° in the lying position, with a stroke one of the arms is lowered.

The patient is asked to pronounce a simple phrase; in case of a stroke, the patient cannot pronounce this phrase clearly and correctly, speech is illegible.

Acute neuroinfections.

The need for emergency benefits may arise with the development of meningitis and meningoencephalitis syndromes.

Their etiology can be very diverse: progression (spread) from the immediate environment (inflammation of the middle ear, mastoid process, paranasal sinuses);

complications of open traumatic brain injuries and fractures of the base of the skull;

metastasis (hematogenously metastatic meningitis, metastatic focal encephalitis with purulent endocarditis);

of an infectious nature (bacterial, viral).

Meningitis syndrome.

It begins acutely with high fever, chills, headache, nausea and vomiting.

Pronounced photophobia.

The study of the neurological status reveals positive symptoms of irritation of the soft meninges: stiffness of the occipital muscles, Kernig, Brudzinsky.

Epidemiological data are taken into account when studying the medical history.

The most important additional diagnostic method is the examination of spinal fluid (in the hospital).

Encephalitis syndrome.

This syndrome is characterized by clouding and loss of consciousness, mental disorders (psychoses).
All this occurs against the background of general infectious symptoms (nausea, vomiting, fever). Meningial symptoms are often detected, as well as focal ones (paresis and paralysis of the extremities, nystagmus, strabismus, ptosis, speech and swallowing disorders, very rarely epileptoform seizures).
Types of epileptic seizures:
- focal (Jackson)
- with psychomotor manifestations;
- classic (pronounced).

References:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p
. 2. Clinical protocol of diagnosis and treatment of "Ischemic stroke". Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated December 27, 2016. Protocol No.
18.3. Clinical protocol for diagnosis and treatment of Intracerebral hemorrhage. Approved by the Joint Commission on the Quality of Medical Services of the Ministry of Health of the Republic of Kazakhstan dated May 25, 2017. Protocol No. 22.
4. Organization of emergency medical care outside the medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.
5. Emergency medical care. Clinical recommendations / edited by: S.F. Bagnenko. - M.: [B. I.], 2015. -871 p.
2014.

Security questions (feedback):

1. What are the features of providing care for various types of neurological diseases?
2. What are the features of providing care to psychiatric patients?
3. What is the algorithm of actions for stroke?
4. What is the clinic of hemorrhagic stroke?
5. What is the algorithm of care for hemorrhagic stroke?
6. What is the clinic of ischemic stroke?
7. What is the algorithm of care for ischemic stroke?
8. What is the spinal cord injury clinic?
9. What is the algorithm for spinal cord injury treatment?

No. 3 lecture

Topic:EMC in case of accidents.

Purpose: To study common emergency conditions in rare cases and the principles of emergency medical care**.**

Lecture abstracts:

Thermal. They occur as a result of exposure to high temperatures.
Chemical ones. They occur as a result of exposure to chemically active substances:
Acids. Burns are relatively shallow, which is due to the coagulating effect of acid: a scab forms from the burned tissues, which prevents its further penetration.
Alkalis. Alkali, acting on tissues, penetrates quite deeply, a barrier of coagulated protein, as in the case of acid, is not formed.
Salts of heavy metals. Burns are usually superficial, and in appearance and clinic, such lesions resemble acid burns.

Assistance:
The first priority is to stop the damaging factor.;
First degree burns – usually do not require treatment;
Second degree burns – with an area of less than 10% - wet dressing, with 10% dry aseptic (wet can cause hypothermia), analgesics;
Third degree burns – dry aseptic dressing, intravenous analgesics, infusion therapy.
Infusion therapy, calculated according to the Parkland formula V = 4 * M *% (4 times body weight in kg and burn area in %, the first 50% of this liquid – usually Lactatringer – is given in the first 8 hours after the burn, the remaining 50% within 16 hours).
Drowning– This is a type of mechanical suffocation or death that occurs as a result of filling the lungs and respiratory tract with water or other liquids.
Types of drowning, depending on external factors, the condition and reaction of the body, there are several main types of drowning:
True (aspiration, "wet") drowning is characterized by the ingress of large amounts of fluid into the lungs and respiratory tract.
It accounts for about 20% of the total number of drownings.
Electrical injury is a complex of damages resulting from damage caused by technical or natural electricity.
Factors determining the severity of electrical injury:
Electric current strength
Tension and duration of action
The type of tissue through which an electric current passes
The general resistance of the victim's body
Individual characteristics of the body at the time of the action of an electric current
Asphyxia (asphyxia; Greek negative prefix a- + sphyxis pulse; synonym suffocation) is a violation of external respiration caused by causes that lead to difficulty or complete cessation of oxygen intake and accumulation of carbon dioxide in the body.
Classification.
During the course of the disease:
• acute or subacute – with complete and valvular closure of the bronchi. In this case, the violation of the patency of the respiratory tract, as well as the development of atelectatic pneumonia, comes to the fore.;
• chronic course – in cases of fixation of a foreign body in the trachea or bronchus without marked difficulty in breathing.
By degree of obstruction:
•partial airway obstruction – the victim is conscious, he has a cough and noisy breathing between breaths.;
• complete airway obstruction – the victim cannot speak, breathe, or cough, clutching his neck convulsively.
References:
1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p
. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.
3. Emergency medical care. Clinical recommendations / edited by: S.F. Bagnenko. - M.: [B. I.], 2015. -871 p.2014.
Security questions (feedback):

1. What is drowning?
1. What types of drowning do you know?
2. What are the features of providing assistance for various types of drowning?
3. What is asphyxia?
4. What is the clinic of strangulation asphyxia?
5. What is the algorithm of actions for strangulation asphyxia?
6. What is the clinic of electrical injury?
7. What is the algorithm of assistance in case of electrical injury?
8. What types of burns do you know?
9. What degrees of burns do you know?

No. 4 lecture

Subject: Wounds. Bleeding. Injuries of the musculoskeletal system

Purpose: To study the characteristics of wounds and injuries and the principles of emergency medical care.

Lecture abstracts:

A wound is any injury accompanied by a violation of the integrity of the integuments of the body (skin, mucous membranes).

By origin, wounds are divided into surgical and accidental.

Surgical wounds are applied for therapeutic purposes under special conditions that minimize the risk of wound complications.

Accidental wounds: domestic, industrial, combat, criminal. The common thing is that all of them are inflicted against the will of the wounded, they are always contaminated with microorganisms, and there is always a risk of wound complications.

According to the number of wounds, single and multiple wounds are distinguished.

By localization, wounds of the head, neck, trunk and limbs, internal organs and combined wounds of several internal organs are distinguished.

According to the nature of the wound channel, mechanical wounds are divided into through, blind and tangential.

Bleeding is the outflow of blood from blood vessels due to injury or disease.

There are:

depending on the place of blood flow – external and internal bleeding;

with external bleeding, blood flows out of the damaged vessel.

In case of external bleeding, first aid consists in temporarily stopping the bleeding.;

with internal bleeding, blood flows out of the vessel into the tissues or any cavities. Internal bleeding can be determined by the presence of signs of acute blood loss in the victim.

First aid consists in carrying out measures to reduce the intensity of bleeding (cold, rest) and urgent hospitalization of the victim;

depending on the type of damaged vessel, arterial, venous, capillary and mixed (parenchymal) bleeding.

Trauma is a structural and functional disorder of tissues and organs that occur as a result of environmental factors.

Classification of injuries according to the effect of the damaging factor:

Isolated injury is damage to one organ or injury within one segment of the musculoskeletal system (for example, liver rupture, hip fracture, shoulder fracture).

Multiple trauma is a series of similar injuries to the limbs, trunk, and head (simultaneous fractures of two or more segments or sections of the musculoskeletal system, multiple wounds).

Of all the variety of combined and multiple injuries, the dominant one stands out — the "dominant injury", which is very important for determining medical tactics in the acute period.

Combined injury is damage to the musculoskeletal system and one or more internal organs, including the brain (pelvic bone fracture and liver rupture, hip fracture and brain contusion). Combined injury is damage caused by mechanical and one or more non-mechanical factors, such as thermal, chemical, or radiation (bone fractures combined with burns; wounds, burns, and radioactive damage).

The main stages of working with a patient:

Assessment of the accident site;
Initial inspection;
Secondary inspection;
Constant monitoring and reassessment of the condition during transportation.
The five stages of the initial examination:
Airwaymanagementandcervicalspinestabilization – airway patency and cervical stabilization;
Breathing(ventilation) – breathing (ventilation);
Circulation (bleeding) – hemodynamics (bleeding);
Disability – neurostatus;
Exposure/Environment – detailed inspection/external environment.

References:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p
. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.
3. Emergency medical care. Clinical recommendations / edited by: S.F. Bagnenko. - M.: [B. I.], 2015. -871 p.
4. Fundamentals of care for general trauma: Reference edition: D. Skinner, P. Driscoll 4th Edition, 2018 ICRC
2014.

Security questions (feedback):

1. What is a wound?
2. What types of wounds do you know?
3. What are the features of providing care for bitten wounds?
4. What is bleeding?
5. What types of bleeding do you know?
6. What are the features of providing care for arterial and venous bleeding?
7. What is the algorithm for helping with internal bleeding?
8. What is an injury?
9. What types of injuries do you know?
10. What are the signs of a fracture that you know?
11. What is the algorithm for helping with limb fractures?
12. What is polytrauma?
13. What are the features of providing assistance for polytrauma?

No. 5 lecture

Topic: Acute surgical diseases and injuries of the chest and abdomen

Objective: To study common emergency conditions in surgery and the principles of emergency medical care.

Lecture abstracts:

"Acute abdomen" is a clinical syndrome that develops in acute diseases of the abdominal organs and requires emergency surgical care. The main causes of the development of "acute abdomen"

are due to the development of the following pathological processes:
Acute nonspecific inflammation of the abdominal cavity (intoxication syndrome);
Internal bleeding into the abdominal cavity or into the lumen of the gastrointestinal tract (hemorrhagic syndrome);
Acute circulatory disorders in the abdominal cavity (ischemic abdominal syndrome);
Obstruction of various parts of the gastrointestinal tract (intestinal obstruction syndrome).

The main signs of an acute abdomen :

abdominal pain of varying nature and intensity,
tension of abdominal wall muscles,
- intestinal motility disorders.

These and some minor signs occur in various combinations in various pathological conditions caused by acute inflammatory processes of the abdominal organs, bleeding into the abdominal cavity, local circulatory disorders, or intestinal obstruction.
During examination and palpation of the abdomen, you should find out:
- is there any bloating,
- visible peristalsis,
asymmetry,
rigidity of the anterior abdominal wall,
symptoms of peritoneal irritation,
if there are any protrusions (hernias),
pulsating or painful formations on palpation,
determine the nature of intestinal noises.

Acute appendicitis.

Kocher's symptom - pain begins in the epigastric region and after 2-4 hours moves to the right iliac region.
A symptom of a "coughing fit" is increased pain in the right iliac region when breathing or coughing is forced.
The Shchetkin - Blumberg symptom is a sharp pain that occurs in the abdomen when the hand is quickly removed at the time of palpation of the abdominal cavity.
Sitkovsky's symptom is increased pain when the patient turns to the left side.
Rovsing's symptom is a jolt-like palpation in the left iliac region that causes gases to move from the descending intestine to the cecum and increases pain in the right iliac region.

Acute intestinal obstruction.

The Hose symptom is the appearance of visible intestinal motility caused by rapidly running fingers along the abdominal wall.
The symptom of Spasokukotsky is auscultation against the background of the absence of intestinal noises (disappearance of peristalsis), the noise of a "falling drop" is heard.
Kivul's symptom is percussion over stretched intestinal loops, high tympanitis with a metallic tinge is detected.
Val's symptom is a limited bloating caused by the accumulation of gases in the twisted loop of the intestine.

Acute cholecystitis.

Ortner's symptom is significant pain when shaking the edge of the palm along the right costal arch.
Zakharin's symptom is pain when pressing on the gallbladder.
The Giorgievsky-Mussy symptom is pain when pressing between the legs of the sternocleidomastoid muscle.
Murphy's symptom is when the patient is asked to take a deep breath by placing his left palm flat

and lightly pressing his thumb just below the costal arch (the location of the gallbladder). However, the patient interrupts a deep breath due to a sharp pain.

Acute pancreatitis.

The Mayo-Robson symptom is a sharp pain on palpation of the left rib-vertebral angle.
Kerte's symptom is that the abdomen is moderately swollen and rigid in the epigastric region.
The symptom of Voskresensky is that there is no pulsation of the aorta on palpation in the epigastric region.
Courvosier's symptom is an enlarged and strained gallbladder palpated against jaundice (in pancreatic cancer).

Perforated ulcer of the stomach and duodenum.

A symptom of Spizharny is the disappearance of liver dullness with percussion - tympanitis.
Abdominal pain, abdominal wall tension, and c-Mschetkin-Blumberg form the peritoneal triad characteristic of inflammation of the abdominal wall organs.

Chest injury is the second leading cause of death after head injury among all injuries.;
It occurs in 20% of fatal injuries.;
What should be assumed when examining a patient with a chest injury:
Open/strained pneumothorax;
Massive hemothorax;
Rib fractures (especially flotation fractures);
Tamponade, blunt trauma to the heart.

Blunt abdominal injury:

Blunt and penetrating abdominal injuries can be associated with extensive damage to internal organs, resulting in massive blood loss.
Blunt or penetrating
abdominal injuries are related to:
The type of force used;
The density of the tissue of the structure of the damaged organ (for example, filled with liquid, filled with gas, solid or encapsulated);
The liver and spleen are the most commonly damaged organs from blunt trauma.;
The liver, small intestine, and stomach are the most commonly damaged organs from penetrating trauma.

References:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p
. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.
3. Emergency medical care. Clinical recommendations / edited by: S.F. Bagnenko. - M.: [B. I.], 2015. -871 p.
4. Fundamentals of Care for General trauma: Reference edition: D. Skinner, P. Driscoll 4th Edition, 2018 ICRC

Security questions (feedback):Что такое острый живот?
1. What are the features of providing assistance for acute abdominal pain?
2. What are the symptoms of appendicitis do you know?
3. What are the symptoms of pancreatitis do you know?
4. What are the symptoms of cholecystitis do you know?
5. What are the symptoms of acute intestinal obstruction do you know?
6. What are the symptoms of gastric ulcer perforation do you know?

7. What types of pneumothorax do you know?
8. What are the symptoms of pneumothorax do you know?
9. What are the symptoms of hemothorax do you know?
10. Which puncture points of the pleural cavity do you know?
11. What signs of internal bleeding do you know?
12. What reactions to infusion therapy do you know?

No. 6 lecture

Topic: Acute urological diseases and injuries.

Acute diseases and injuries of the maxillofacial region, ear, throat, nose and eyes.

Objective: To study common emergency conditions in urology and the principles of emergency medical care.

Lecture abstracts:

A number of urological diseases and conditions require emergency medical care (renal colic, hematuria, anuria, acute urinary retention).

All of them, if untimely care is provided, can lead to serious consequences, including the death of the patient. These symptom complexes can be observed in various diseases.

For example, hematuria can be detected in bladder tumors and nephroptosis.

Acute urinary retention can be a complication of benign prostatic hyperplasia, but it can also occur when the urethra is obstructed by a concretion.

Renal colic.

Renal colic is an urgent condition, manifested by a pronounced unilateral pain attack in the lumbar region, dysuria, nausea and vomiting, which does not bring relief.

The minimum necessary diagnostic measures for renal colic:

1) a general urinalysis is normal immediately at the time of a pain attack.;

2) X-ray examination of the kidneys and urinary tract - assessment of the contour of the kidney and detection of radiopositive nodules;

3) Ultrasound of the kidneys and bladder - detection of enlargement of the renal calyx-pelvis system (a sign of impaired urinary outflow from the kidney), detection of concretions in the pelvic or pre-abdominal part of the ureter.

Hematuria.

The term "hematuria" refers to the excretion of blood in the urine.

Hematuria is one of the leading urological symptoms, but it can also occur in non-urological diseases.

The causes of hematuria can be divided into several groups:

1) urological diseases - urolithiasis, tumors and tuberculosis of the kidney, ureter, bladder, kidney infarction, nephroptosis, urinary tract injury;

2) nephrological diseases - glomerulonephritis, hereditary nephropathies, nephritis with systemic vasculitis (nodular peri-arteritis, hemorrhagic vasculitis, granulomatous degeneration);

3) diseases of the blood system - leukemia, hemorrhagic diathesis;

4) overdose of anticoagulants.

Acute urinary retention.

Acute urinary retention is the inability to urinate when the bladder is full.

Acute urinary retention is not an independent nosological form, but occurs as a complication of other diseases.

References:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p

. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.
3. Emergency medical care. Clinical recommendations / edited by: S.F. Bagnenko. - M.: [B. I.], 2015. -871 p.
4. Fundamentals of care for general trauma: reference edition: D. Skinner, P. Driscoll 4th edition, 2018 MCCC2014.

Security questions (feedback):

1. What is the clinic of renal colic?
2. What is the algorithm of care for the clinic of renal colic?
3. What is hematuria?
4. What types of hematuria do you know?
5. What is anuria?
6. What types of anuria do you know?
7. What is the algorithm of care for acute urinary retention?
8. What urgent conditions in the practice of maxillofacial surgery do you know?
9. What urgent conditions in the practice of otorhinolaryngology do you know?
10. What urgent conditions in the practice of ophthalmology do you know?

No. 7 lecture

Topic: Acute poisoning.

Purpose: To study common forms of poisoning and principles of emergency medical care.

Lecture abstracts:

1. Diagnosis of acute poisoning. The diagnosis of poisoning is aimed at establishing the chemical etiology of diseases that develop as a result of exposure to foreign (exogenous) toxic substances. It consists of three main areas of diagnostic activities:

a) clinical diagnosis based on medical history data, the results of an examination of the accident site and a study of the clinical picture of the disease to identify specific symptoms of poisoning, which is carried out by a doctor providing medical care to the patient at the pre-hospital stage or in a hospital;

b) laboratory diagnostics aimed at:

Qualitative and quantitative determination (identification) of toxic substances in the biological environment of the body (blood, urine, cerebrospinal fluid, etc.),.

c) pathomorphological diagnostics aimed at detecting specific postmortem signs of poisoning with any toxic substances, which is carried out by forensic medical experts.

The clinical diagnosis of acute poisoning is aimed at identifying certain symptoms characteristic of the effects on the body of a particular substance or a whole group of substances similar in physico-chemical or biological properties according to the principle of their "selective toxicity". The main pathological symptom complexes characteristic of the most common poisoning in the clinic are: toxic encephalopathy, cardiopathy, hepatopathy, nephropathy, toxic lung damage, local cauterizing effect, as well as exotoxic shock.

Removing the poison from the body

Gastric lavage is performed at any time after poisoning using sorbents, monotol, desferal, and oxidants to bind in the stomach, while aspiration prevention must be carried out.

Siphon cleansing enemas with enterosorbent.

Forced diuresis.

Extracorporeal hemocorrection (EG) methods are used due to the fact that in acute poisoning, toxic substances accumulate in the blood and various depots, which have a multicomponent negative effect on the body.

Features of symptomatic therapy.

Exotoxic shock.

In case of poisoning with alpha-adrenolytics (aminazine, amitriptyline), if necessary, inotropic support - dopamine and adrenaline – are contraindicated (paradoxical hypotensive effect – risk of arrhythmia due to betta-adrenergic effect). The use of norepinephrine is necessary.

References:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p

. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.

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

4. Fundamentals of care for general trauma: Reference edition: D. Skinner, P. Driscoll 4th edition, 2018 ICRC, 2014.

Security questions (feedback):

1. What techniques do you know in the diagnosis of acute poisoning?
2. What are endo- and exo-poisoning?
3. What is the clinic of acute poisoning?
4. What is the algorithm of care for acute poisoning?
5. What is the tactics of the emergency doctor in poisoning?
6. What types of toxic substances do you know?
7. What is the algorithm for opioid poisoning treatment?
8. What methods of removing poison from the body do you know?
9. What are the features of symptomatic therapy for poisoning?

No. 8 lecture

Topic: Emergency care in obstetrics and acute gynecological pathology

Objective: To study common emergency conditions in obstetrics and gynecology and the principles of emergency medical care.

Lecture abstracts:

Acute emergencies in obstetrics Emergencies during pregnancy and childbirth can be assumed or they may occur unexpectedly.

The first group includes anomalies in fetal position, such as the transverse position, a mismatch in the size of the fetal head and the maternal pelvis, and a number of metabolic disorders.

The second group should include, first of all, placenta previa, premature separation of a normally attached placenta, rupture of the uterus during childbirth, and eclampsia (conditionally).

Placenta previa occurs in 0.3-0.5% of all women in labor, while it is 5 times more common in repeat births than in first-time mothers. The placenta may lie at the exit of the uterus, partially or completely block it.

The leading symptom is bleeding that occurs without pain in the last 3-4 months of pregnancy. Before that, the pregnant woman felt well and there was no external reason for bleeding.

Premature placental abruption

It occurs in 1% of women in labor.

The amount of blood loss during childbirth has nothing to do with the severity of the clinical picture.

The clinical picture and severity of the course depend on the prevalence of retroplacental hematoma.

The most important symptoms:
sudden abdominal pain;
soreness when feeling the uterus (contracted, strained);
more or less severe bleeding from the vagina;
increasing signs of hemorrhagic shock in the mother and disappearance of fetal heart tones.

Rupture of the uterus

This is the most dangerous complication of labor. It occurs in 0.1% of women in labor.
The reasons for its occurrence are as follows:
- a mismatch in size between the fetal head and the pelvis;
fetal position, impossible to complete normal labor;
termination of labor, as well as damage to the uterine wall.
In most cases, the rupture site is located in the area of the internal pharynx of the cervix, but, of course, it can pass to the cervix.

Eclampsia

Eclampsia is the most serious complication of late pregnancy toxicosis.
Eclampsia occurs in the last 2-3 months of pregnancy, during childbirth, and in the first two weeks of the postpartum period.
The signs of eclampsia are tonic and clonic seizures on the background of deep unconsciousness.
It is necessary to carry out a thorough differential diagnosis with epilepsy, uremia, venous sinus thrombosis of the brain, meningitis and poisoning.

Homebirth

With the full opening of the cervix and increased labor, childbirth at home can begin.
To give birth, it is necessary to treat hands with alcohol, open a sterile kit, place a sterile oilcloth under the woman in labor, and a sterile sheet on top of it.
When the head appears from the genital fissure, the doctor protects the perineum from rupture, ensuring that the head moves slowly outward.
After the birth of the head, it helps to release first one shoulder and handle, then the other.
Then it extracts the child.

Emergency conditions in gynecology can be divided into five groups.
Internal bleeding.
External bleeding.
Inflammatory diseases of the female genital organs.
Twisting of the tubes, ovarian cysts, appendages and their tumors.
Damage to the female genital organs.

References:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p
. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.
3. Emergency medical care. Clinical recommendations / edited by: S.F. Bagnenko. - M.: [B. I.], 2015. -871 p.

Security questions (feedback):

1. What methods of diagnosis of obstetric and gynecological pathologies do you know?
2. What is the clinic of ectopic pregnancy?
3. What is the clinic of rupture of the fallopian tube?
4. What is the clinic of uterine rupture?
5. What is the clinic of preeclampsia?

6. What is the algorithm for preeclampsia care?
7. What is the clinic of preeclampsia?
8. What is the algorithm for helping with eclampsia?

No. 9 lecture

Topic: Emergency conditions in pediatrics

Objective: To study common emergency conditions in pediatrics and the principles of emergency medical care.

Lecture abstracts:

Cardiopulmonary resuscitation in children based on the recommendations of the American Heart Association (2020) and DM.

Cardiac arrest in newborns is most often associated with asphyxia, so the sequence A-B-C should be used.

(Aigipd — restoration of airway patency;
Breathing — emergency artificial lung ventilation;
Circulation is the implementation of artificial blood circulation by indirect massage of the heart, stopping bleeding and giving the appropriate position to the patient) with a 3:1 compression and inhalation ratio.

Algorithm of actions for basic resuscitation of infants (from 1 month of life to 1 year)

If the infant is unconscious and not breathing or suffocating, the healthcare professional has 10 seconds to check the pulse (on the brachial artery);
as soon as possible, monitoring of cardiac activity (identification of normal / abnormal heart rhythm).

If no pulse is detected within 10 seconds or there is no certainty of its presence, chest compressions are started.

CPR of infants should begin with chest compressions (and not with artificial respiration!) — 30 compressions if the help is provided by one resuscitator (the ratio of compressions and inspirations is 30:2), or 15 compressions if the help is provided by two medical professionals (the ratio of compressions and inspirations is 15:2).

Children from 1 month to 12 years, xycaine is administered intravenously, initially intravenously at a dose of 0.51.0 mg / kg (for 5 minutes), then switched to an intravenous drip infusion of the drug at a rate of 0.63.0 mg / (kg x h);

- For children from 12 to 18 years of age, xycaine is administered intravenously in a dose of 50-100 mg, followed by an intravenous drip of 120 mg in 30 minutes;
- Lidocaine should not be administered if amiodarone has been used before.;
- The effectiveness of lidocaine does not exceed that of amiodarone in terms of survival.

Provision of EMC for pneumonia.

Examination and physical examination:
Assessment of the general condition and vital functions: consciousness, respiration, blood circulation.
Thermometry, pulse oximetry are performed, the number of breaths and heartbeats per minute are determined; the skin, oral cavity, chest are examined; auscultation and percussion of the lungs and heart are performed. Special attention should be paid to the presence of cyanosis and shortness of breath at rest and when the child is aroused.

The algorithm of providing SMP to children with bronchial asthma.

Measures for exacerbation of mild asthma (PSV — >60%):
oxygen: target saturation (SaO2) — more than 94-98%. - emergency inhalation therapy begins with 2-4 doses of a short-acting β2 agonist (salbutamol) using a metered-dose aerosol inhaler with a spacer or a nebulizer (A, 1++). Other bronchospasmolytics (fenoterol) or a combination

drug (fenoterol + ipratropium bromide) are used in the absence of salbutamol using a metered-dose aerosol inhaler with a spacer or a nebulizer1 (A, 1++);
In case of "red" fever, the starting therapy is used:
- paracetamol in a single dose of 10-15 mg/kg orally or rectally;
- or ibuprofen in a single dose of 5-10 mg/kg for children over 6 months of age;
- physical cooling methods (wiping with water at room temperature, an ice bubble over the child's head) are carried out immediately after the introduction of antipyretic drugs.
A single application of physical measures should last no more than 30-40 minutes.
According to the indications, the administration of paracetamol (intravenously slowly!) based on a single infusion for children from 1 year and older — 15 mg / kg.

Literature:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p
. 2. Organization of emergency medical care outside a medical organization. Methodological recommendations / S.F.Bagnenko, A.G.Miroshnichenko, I.P.Minnullin, N.F.Plavunov [et al.]. St. Petersburg: [B. I.], 2015. - 46 p.
3. Emergency medical care. Clinical recommendations / edited by: S.F. Bagnenko. - M.: [B. I.], 2015. -871 p.
4. Fundamentals of Care for General trauma: Reference edition: D. Skinner, P. Driscoll 4th Edition, 2018 ICRC
5. Emergency care for children: Reference book: translated from German. Moscow : Medpress-inform, 2014.

Security questions (feedback):

1. What are the features of providing assistance to children?
2. What are the features of CPR in newborns?
3. What are the features of CPR in infants?
4. What are the features of CPR in children after one year?
5. What is the clinic of convulsive syndrome?
6. What is the algorithm of action for convulsive syndrome?
7. What types of fever do you know?
8. What features of fever care do you know?

No. 10 lecture

Topic: Emergency Psychiatry

Objective: To study the provision of timely and qualified care to patients with acute mental disorders.

Lecture abstracts:

Emergency psychiatry is a branch of psychiatry that deals with the diagnosis and treatment of acute mental conditions that threaten the life of a patient or others and require immediate intervention.

The main indications for emergency psychiatric care

- **1. Acute psychotic state**
- **2. Suicidal thoughts and behavior**
- **3. Aggressive/destructive behavior**
- **4. Severe depression with psychotic symptoms**
- **5. Acute conditions on the background of intoxication (alcohol, drugs, medicines)**
- **6. Withdrawal symptoms (delirium, seizures)**
- **7. Catatonic states**

The main syndromes in emergency psychiatry are Delirious syndrome

- Impaired consciousness, disorientation
- Hallucinations (more often visual), fear
- Motor arousal It is characteristic of alcoholic delirium (delirium tremens)

Oneiroid

• Twilight confusion with fantastic delusions
• May occur in schizophrenia

Psychomotor agitation

• Aggression, fussiness, inappropriate behavior
• May be associated with manic syndrome, schizophrenia, intoxication

Catatonic syndrome

• Catatonic arousal: stereotypes, mutism, negativism
• Catatonic stupor: freezing in poses, refusing to eat / contact

Suicidal behavior

• Demonstrative or true
• Often associated with depression, personality disorders, and schizophrenia

Principles of emergency care

Common steps

1. Ensure the safety of the patient and others
2. Assessment of the mental state (if possible— collection of medical history, conversation)
3. Observance of deontological norms — respect, calm tone
4. Pharmacotherapy — if necessary
5. Hospitalization — voluntary or involuntary (according to Article 29 of the Law of the Russian Federation "On Psychiatric care")

Drug therapy (in acute situations)

Condition	The drug of choice	Comments
Psychomotor agitation	Aminazine, haloperidol, droperidol	I.m. or i.v., with caution in case of hypotension
Alcoholic delirium	Diazepam, phenazepam, tiaprid	+ Electrolyte correction, B vitamins
Catatonia	Lorazepam, aminosine	If there is no effect, ECT
Suicidal risk	Sedatives, antidepressants (under supervision!)	Safe environment, exclusion of access to objects

Medical worker behavior

1. **Stay calm**, avoid confrontation
2. **Do not argue with nonsense**, do not convince
3. **Do not approach abruptly**, minimize sensory stimuli
4. **Involve relatives or the police**, if necessary
5. Document all actions

The algorithm of actions when calling:

1. Collecting complaints and medical history (if possible)
2. Assessment of mental state
3. Making a decision on transportation or surveillance
4. Medical correction if necessary
5. Preparation of documentation
6. Transfer to a hospital (psychiatric/drug treatment)

Features of communication with the patient

- Use simple, clear language
- Do not raise your voice
- Do not threaten, do not push
- Keep in touch, keep your distance

Emergency psychiatry requires from a doctor not only knowledge of pharmacology and psychopathology, but also **emotional stability, the ability to act in extreme conditions and an understanding of legal aspects**. It is important to remember that timely intervention can save lives and prevent tragedies.

Referemces:

1. Emergency medical care. Clinical recommendations. Edited by S.F. Bagnenko. - GEOTAR Media. – 2018. - 896 p

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

4. Fundamentals of Care for General trauma: Reference edition: D. Skinner, P. Driscoll 4th Edition, 2018 ICRC

5. Emergency care for children: Reference book: translated from German. Moscow : Medpress-inform, 2014.

Security questions (feedback):

1. What is emergency psychiatry?
2. What conditions are considered urgent in psychiatry?
3. What is the difference between emergency psychiatric care and routine?
4. What are the signs of psychomotor agitation?
5. How to distinguish delirium from schizophrenic psychosis?
6. What is the difference between manic syndrome and hypomania?
7. How to differentiate between catatonic arousal and aggressive behavior in organic brain damage?
8. What are the main manifestations of alcoholic delirium?
9. What are the symptoms of suicidal depression?
10. What is oneiroid and how does it manifest itself?