

MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

Faculty Medical №1

Department of simulation medical technologies

CONFIRMED by
Vice-rector for scientific and pedagogical work


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METHODICAL RECOMENDATION
FOR INDIVIDUAL WORK OF HIGHER EDUCATION ACQUISITIONS IN THE
ACADEMIC DISCIPLINE

«SIMULATION TRAINING BY DIRECTIONS FAMILY MEDICINE, INTERNAL
DISEASES, PEDIATRIC»

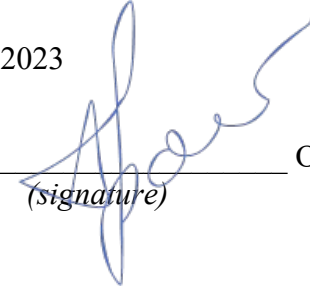
Faculty, course: International, 4 year

Educational Discipline: Simulation training by directions family medicine, internal diseases,
pediatric

Approved:

The methodical recommendation was approved at the meeting of the department of simulation medical technologies

Protocol No. 1 of 28.08.2023

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INDEPENDENT CLASSES

Self-study No. 1 — 5

Topic: Emergency conditions in rheumatology.

Purpose: To form, master and practice professional skills in providing emergency care in rheumatology.

To learn the ability to independently use knowledge and skills in the diagnosis and treatment of emergency conditions in rheumatology.

C to form a clear idea of the sequence of actions in the algorithm for providing emergency care for emergency conditions in rheumatology.

To form the competence of professional communication in the team when providing emergency care in rheumatology .

Basic concepts: Diagnosis and assistance in emergency situations in rheumatology.

Plan

1. Theoretical questions:

Rheumatism is one of the urgent problems of today, as well as the second most frequent cause of temporary (except for acute respiratory diseases or diseases of the upper respiratory tract) and permanent disability in Ukraine after diseases of the cardiovascular system.

Rheumatism is one of the most difficult diseases, depending on the severity of the course and the selection of appropriate treatment. The problem of this pathology also lies in the fact that many systemic diseases of the connective tissue are often complicated by emergency conditions. They are most often observed in systemic lupus erythematosus (SLE), antiphospholipid syndrome, systemic vasculitis (SV), dermatoses and polymyositis, etc. The treatment of emergency conditions in patients with rheumatic diseases is especially relevant and important.

Principles of treatment.

One of the most important methods of treating emergency conditions is pulse therapy (PT) with glucocorticoids (GC). Intravenous administration of ultrahigh shock doses of glucocorticoids or pulse therapy has been used in clinical practice for a long time since the mid-1970s. FT is most widely used in medicine for critical conditions (septic shock, asthmatic conditions, acute myocardial infarction with Dressler's syndrome, Quincke's edema, cerebral edema, Lyell's syndrome, etc.). The use of PT for the prevention and treatment of transplant rejection crisis is considered standard, based on a number of immune disorders, as the basis for the use of PT in patients with autoimmune rheumatic diseases. For the first time, the successful use of PT in patients with SLE was reported in foreign literature in 1976.

The pathophysiological basis of the use of pulsating doses of HA is their ability to actively interact with the immune system and suppress inflammatory reactions.

Of all anti-inflammatory agents, only HA acts on the majority of known cytokines (suppressing the synthesis or blocking the activity of pro-inflammatory cytokines, or, conversely, enhancing the activity of anti-inflammatory cytokines). Due to these effects and their influence on other factors that play an important role in the pathogenesis of rheumatic diseases, HA are the most versatile anti-inflammatory drugs, and therefore they occupy an extremely important place in rheumatology.

Despite the development of new anti-inflammatory agents, HA remains the most potent, acting by binding to cytoplasmic HA receptors, which in turn interact with nuclear transcription factor (NF- κ B). The latter is a natural regulator of several genes involved in the immune response and inflammation, including genes for cytokines, their receptors, adhesion molecules, proteases, etc.

In a large study conducted in the 1980s and 1990s, intravenous loading doses were shown to have anti-inflammatory and immunosuppressive effects and were significantly more effective than similar doses of oral HA. Of course, the drug of choice is 6-methylprednisolone, which has minimal

mineralocorticoid activity, but at the same time has a powerful anti-inflammatory and immunomodulatory effect. Unlike other GCs, methylprednisolone has a balanced genomic and non-genomic effect.

These effects of HA are dose-dependent (therapeutic doses for different diseases differ by more than 200 times), which was confirmed in recent studies.

Autoimmune crisis in patients with SLE without impaired renal function.

In chronic or subacute SLE without impaired renal function, the standard therapy is low to medium doses of prednisolone in combination with aminoquinolines and NSAIDs. Treatment with methylprednisolone is indicated when standard therapy is insufficiently effective and for more rapid inhibition of activity. Disease manifestations such as fever, adhesive or exudative polyserositis, myocarditis, endocarditis, polyarthritis and myositis, as well as erythematous skin lesions can completely disappear after 3 days of classical PT, which includes methylprednisolone 1000 mg intravenously on days 1, 2 and 3 and cyclophosphine 1000 mg for 1 day. Long-term use of moderate and sometimes high doses of prednisone prevents the full effect of PT in these patients, which significantly reduces the frequency of side effects of hormonal therapy. In some cases, reduced doses of methylprednisolone (100-250 mg/day) and cyclosporine A (5 mg/kg/day) for 6 weeks are effective.

Hematological crisis.

In cases of obvious autoimmune hemolytic anemia (hemoglobin < 70 g/l), pronounced thrombocytopenia (platelets < 25,000) or pancytopenia, 3-day PT (in some cases, it is recommended to continue up to 5 days) followed by methylprednisolone at a dose of 60 mg/day. In severe cases, azathioprine (100-150 mg/day) or cyclophosphine is also prescribed.

(150-200 mg/day orally or 800-1000 mg IV) or immunoglobulin (0.5 g/kg IV for 3-5 days).

Cerebral crisis

Any damage to the central nervous system can be observed in patients with SLE at all stages of the disease. In some cases, neurological lupus determines the course, severity and prognosis of life. It is important to distinguish between symptoms caused by lupus and symptoms caused by medications. The most severe clinical manifestations of damage to the central nervous system in SLE include acute cerebrovascular diseases (ischemia, hemorrhage, embolism), focal or diffuse encephalopathy (paresis, paralysis, hyperactivity, convulsions, lethargy, coma), myelopathy (paraparesis, quadriplegia, paralysis), muscle weakness and psychopathological syndromes.

Even at high doses (1 mg/kg and more), the effectiveness of internal use of HA is controversial. If oral therapy is ineffective, PT methylprednisolone is prescribed for 3-5 days. In the most severe cases (lethargy, coma, convulsions), treatment is recommended to begin with FT. In this case, a combination of methylprednisolone and cyclophosphine was used, and in some cases, to achieve a clinical effect, methylprednisolone and cyclophosphine were administered intravenously for 5 days (up to 10 g and 2 g, respectively).

More effective simultaneous use of plasmapheresis and PT methylprednisolone with cyclophosphine. In case of cerebral coma or convulsive syndrome, plasmapheresis is performed with intravenous administration of methylprednisolone in a dose of 500-1000 mg and cyclophosphine in a dose of 200-1000 mg. It is used after 1-2 days (up to 5 courses), the total amount of cyclophospholipids is no more than 2 g. For a more pronounced effect and prevention of infectious complications, after the last course of treatment, intravenous immunoglobulin is administered at a dose of 0.5 mg/kg.

An extended treatment regimen includes 2 g of cyclophosphine IV weekly for 4 weeks, then 200 mg weekly for 2 to 2.5 years.

Questions for self-control:

1. Quick recognition of an emergency in a patient.
2. Be able to quickly give and receive commands to medical personnel depending on the

- critical situation (teamwork).
3. To be able to quickly carry out a differential diagnosis of an emergency.
 4. Examination (physical methods, measurement of blood pressure, heart rate, SpO₂, thermometry, capnometry-graphy, glucometry, drawing up a plan for laboratory and instrumental studies).
 5. Determination of the treatment scheme based on theoretical knowledge of protocols obtained at previous departments.
 6. Assistance (introduction of IV injections and a catheter, oxygen supply, use of a functional bed, ECG recording and interpretation).
 7. Communication skills with staff and relatives in an emergency patient situation.

Approximate tasks for processing the theoretical material:

Autoimmune crisis in patients with SLE without kidney damage;

Hematological crisis;

Cerebral crisis;

Lupus nephritis;

Antiphospholipid syndrome;

Systemic vasculitis;

Sjögren's disease;

Dermato- and polymyositis.

2. Practical works (tasks) to be performed:

Physical examination methods;

Blood pressure measurement;

BH measurement;

Heart rate measurement;

SpO₂ measurement;

Thermometry;

Capnometry - graph;

Glucometry;

Make a plan for laboratory and instrumental research.

3. Test tasks for self-control :

1. Patient D., 45 years old, complains of sharp pains in the big toe of the left foot. During the examination, it is noted: the joint is enlarged in volume, bluish-purple, t of the body - 38.5 °C
Blood: leukocytes - $10.2 \times 10^9/l$, SZE - 34 mm/h. Uric acid – 0.525 mmol/l. What is the previous diagnosis?

A. Gouty arthritis

B. Psoriatic arthritis

C. Rheumatoid arthritis

D. Osteoarthritis

E. Reiter's disease

2. A 25-year-old woman was brought to the clinic with complaints of chest pain on the left side, shortness of breath, and fever for two weeks. The patient notes that recently she was troubled by pain in the joints of the hands, myalgia, and erythema appeared on both cheeks.

General: pulse - 100 bpm, systolic murmur at the apex, pleural friction noise on the left. The joints of the hands are swollen. Blood: leukocytes – $2.0 \times 10^9/l$, erythrocytes – $2.7 \times 10^{12}/l$, ESR – 59 mm/h, proteinuria, cylindruria in the urine. What is the most likely diagnosis?

A. Rheumatoid arthritis

B. Acute rheumatic fever

C. Reactive arthritis

- D. Dermatomyositis
- E. Systemic lupus erythematosus

3. Patient S., 34 years old, complains of pronounced pain in the small joints of the hands, morning stiffness of movements for 3 hours. He has been sick for 4 years. Objectively symmetrical impression of hand joints, their deformation, subluxations, atrophy of interosseous muscles. Blood: erythrocytes – $3.2 \times 10^{12}/l$, leukocytes – $9.7 \times 10^9/l$, SZE – 45 mm/h. C-reactive protein – 36 U/ml, rheumatoid factor – 128 U/ml. What is the previous diagnosis?

- A. Rheumatoid arthritis
- B. Systemic lupus erythematosus
- C. Psoriatic arthritis
- D. Gout
- E. Lyme borreliosis

4. A 60-year-old patient weighing 120 kg with complaints of aching pain in the knee joints, which occurs during movements and intensifies in the evening, movements are accompanied by 5 crunches. About: Body temperature – 36.7 C. Knee joints are deformed. An X-ray of the knee joints shows narrowing of the joint space, lateral osteophytes. Which of the following diagnoses is most likely?

- A. Osteoarthritis
- B. Gouty arthritis
- C. Rheumatoid arthritis
- D. Reactive arthritis
- E. Microcrystalline arthropathy (CPPD)

5. A 37-year-old patient developed sharp pains in the area of the metatarsophalangeal joint of the big toe of the left foot after eating meat. Objectively: the skin over the affected joint is purplish-bluish in color, the patient cannot stand on his feet due to sharp pain. Is it recommended to prescribe for emergency care?

- A. None of them
- B. Etoricoxib (Arcoxia)
- C. Serrapeptidase (Serrata)
- D. Leflunomide (Arava)
- E. Colchicine

6. After lifting a heavy bag, the patient suddenly developed a sharp pain in the lower back. Movements in the spine are limited. The Achilles reflex on the left is not evoked, pain sensitivity anesthesia has appeared on the outer surface of the left lower leg. What disease do you suspect?

- A. Lumbar - sacral sciatica
- B. Lumbago
- C. Lumbargia
- D. Neuritis of the femoral nerve
- E. Spinal arachnoiditis

7. A 38-year-old woman was admitted to the hospital with complaints of pain in small joints, low-grade fever. He has been sick for 4 years. At first, only repeated attacks of polyarthritis of the small joints of the hand were noted. During the examination: deformation of the proximal interphalangeal joints, expansion of the heart in both directions, systolic murmur at the apex, blood pressure - 150/100 mm Hg. X-ray of the HCV shows pleurodiaphragmatic adhesions, left ventricular enlargement. Blood analysis: Hb – 98 g/l, erythrocytes – $3.4 \times 10^{12}/l$, leukocytes – $4.0 \times 10^9/l$, SZE – 50 mm/h. Analysis of 6 urine: protein - 1.3 g/l, erythrocytes - 8-9 in p/eye, hyaline cylinders - 3-4 in p/eye. The most likely diagnosis?

- A. Systemic lupus erythematosus
- B. Rheumatoid polyarthritis
- C. Systemic scleroderma
- D. Chronic glomerulonephritis
- E. Rheumatic fever

8. A 19-year-old patient suffering from systemic lupus erythematosus with an acute course, damage to the kidneys, myocardium, pleura, joints, is planned to be prescribed pathogenetic treatment. In the blood analysis, erythrocytes – $3.8 \times 10^{12}/l$, Hb – 120 g/l, leukocytes – $2.9 \times 10^9/l$, platelets – $150 \times 10^9/l$, urea – 6.9 mmol/l. Choose the right treatment option.

- A. Levamisole 150 mg/day according to the scheme
- B. Cyclophosphane 200 mg IV every other day
- C. Timolin 10 mg IV daily
- D. Laferon 5 million units. intravenously 2 times a week
- E. Prednisolone 60 mg/day

9. A 55-year-old man came to the clinic due to an attack of renal colic, which periodically recurs during the year. Objectively: in the area of the auricles and the right elbow joint there are nodular formations covered with thin shiny skin. Pulse - 88/min. Blood pressure - 170/100 mm Hg. Positive Pasternacki symptom on both sides. The patient is scheduled for an examination. The study of which laboratory indicator is most appropriate for establishing a diagnosis?

- A. Uric acid
- B. Rheumatoid factor
- C. SZE
- D. Urine sediment
- E. Lactic acid

10. A 50-year-old woman complains of swelling of the hands, discoloration of the skin on the face and chest, difficulty in passing food. He has been ill for 5 years. During the examination: the nose is pointed, symmetrical thickening, tension and induration of the skin of the fingers. Dry rales over the lungs; heart sounds are deaf, the rhythm is irregular, the accent of the II tone is over the pulmonary artery, the heart rate is 98/min. In the blood, SZE is accelerated, hypergammaglobulinemia. What is the most likely underlying mechanism of disease development?

- A. Formation of antibodies to myositis
- B. Violation of fibrogenesis and microcirculation
- C. Formation of antibodies to RNA
- D. Formation of antibodies to endothelial cells
- E. Formation of antibodies to native DNA

Correct answers:

1-A; 2-E; 3-A; 4-A; 5-E; 6-A; 7-A; 8-E; 9-A; 10-V.

4. Individual tasks for students of higher education on the topic:

Not provided by the Work Program.

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

Main:

1. Emergencies in the practice of a therapist and family doctor / under the editorship Yepishyna A.V. – ISBN: 978-966-673-122-0. Ukrmedknyga 2019p. 380 pages
2. Mechanical Ventilation in Emergency Medicine. by Susan R. Wilcox & Ani Aydin & Evie G. Marcolini. ISBN 978-3-319-98409-4 ISBN 978-3-319-98410-0 (eBook).

<https://doi.org/10.1007/978-3-319-98410-0/2019> . 122 pages

3. Acute Medicine: A Practical Guide to the Management of Medical Emergencies, 5th Edition / David C. Sprigings (Editor), John B. Chambers (Editor) - ISBN: 978-1-118-64428-7. July 2017 Wiley-Blackwell, 784 Pages

Additional:

1. The Complete First Aid Pocket Guide. by John Furst / ISBN 9781507208892 - Adams Media, 2018. 190 pages
2. Manual of emergency medicine / editor, G. Richard Braen. — 6th ed. ISBN: 978-1-60831-249-8. May 23, 2011. 704 pages

Electronic information resources:

1. <https://zakon.rada.gov.ua/laws/show/z0356-22#n42>
2. https://courses.prometheus.org.ua/courses/NMU/Cardiology101/2017_T1/course/
3. <https://emergencymanual.stanford.edu/downloads/>
4. <https://www.coursera.org/learn/infarction>
5. <https://www.coursera.org/learn/managing-asthma-allergies-diabetes-and-seizures-in-school>
6. <https://www.futurelearn.com/courses/critical-care>
7. <https://www.medscape.org/viewarticle/964673>
8. <https://www.medscape.org/viewarticle/964201>
9. <https://www.medscape.org/viewarticle/965140>
10. <https://www.c-tecc.org/news/ukrainian-tecc-guidelines>

Self-study No. 6 — 10

Topic: Urgent conditions in nephrology.

Purpose: To form, master, and practice professional skills in providing emergency care in nephrology.

To learn the ability to independently use knowledge and skills in the diagnosis and treatment of emergency conditions in nephrology.

C to form a clear idea of the sequence of actions in the algorithm of providing emergency care for emergency conditions in nephrology.

To form the competence of professional communication in the team when providing emergency care in nephrology .

Basic concepts: Diagnosis and assistance in emergency situations in nephrology.

Plan

1. Theoretical questions:

Renal colic is an attack of sharp pain in the lumbar region (more often on one side), which begins suddenly, can spread to the upper half of the abdomen, radiates downward - along the ureters, to the area of the urinary bladder, external genitalia, and the inner surface of the thigh.

Etiology . Occurs mainly with urolithiasis, but can also occur with inflammation of the urinary tract, bleeding from the organs of the urinary system, excessive mobility of the lowered kidney, with injuries with damage to the urinary tract, when their obstruction occurs (with a stone, blood clot or pus, mechanical overlap lumen when the ureter is bent or compressed from the outside). An attack of renal colic develops after a jolting ride, a long walk, physical exertion, a sharp change in body position, drinking a large amount of liquid, less often - spontaneously. It most

often occurs as a result of the migration of a calculus or the passage of a conglomerate of dense crystals through the ureter, as a result of blockage of the ureter by caseous masses in tuberculosis or tumors of the urinary system.

Pathogenesis . With renal colic syndrome, the normal outflow of urine is disturbed, which is delayed above the site of obstruction, which leads to the expansion and overstretching of the corresponding hollow organs of the urinary system with irritation of their pain receptors. In the origin of the pain syndrome can be important

as well as spasms of the muscles of the urinary organs, inflammatory processes, infiltration of tissues, an increase in the size of the kidney and the consequent stretching of the renal capsule, which is also rich in pain receptors (pain sensitivity is not inherent in the kidney tissue itself).

Clinic . Pain in the lumbar region or along the course of the ureter has variable intensity, often reaching such a significant intensity that the patient cannot find a place, constantly changing position, sometimes screams and moans.

During an attack of colic, dysuric phenomena often occur - frequent painful urination, accompanying reflex disorders such as nausea, vomiting, abdominal distension, and delayed bowel movements are observed. Renal colic can be accompanied by irritation of the solar plexus and peritoneum, which induces complaints of dizziness, urges to defecate. The temperature may rise. A positive Pasternacki's symptom on the affected side, pain in the corresponding points in the place of projection of the ureters, pathological changes in urine (erythrocyturia, leukocyturia, proteinuria, etc.) are determined.

An attack of renal colic stops suddenly — after the cause of urinary tract obstruction is removed, especially after the stone passes from the ureter to the bladder. With the predominance of inflammatory processes, the pain subsides gradually.

Diagnostics . In the analysis of urine after the end of the attack, the content of erythrocytes and leukocytes may be increased. The results of ultrasound in urolithiasis indicate the size of calculi and the presence of shadows of calculi that give a clear acoustic shadow, in nephroptosis - drooping of the kidneys, hydronephrosis - an increase in the size of the kidneys, expansion of the calyceal space, neoplasms - a tumor-like formation, inflammatory diseases - deformation of the calyces pelvic area.

Algorithm for providing emergency aid for renal annulus.

- Warm procedures (heater on the lumbar region, hot bath).
- Antispasmodics and painkillers (no-shpa - 2 tablets (0.04 g), Halidor - 2 tablets (0.1 g), Baralgin - 1-2 tablets, papaverine - 2 tablets (0.04 g), cistenal - 10-20 drops, metamizole sodium - 5 ml IV, drotaverine - 1-2 tablets).
- In case of severe pain syndrome - antispasmodics and painkillers are prescribed by injection: no-shpa 2% - 2.0-4.0 ml IV, papaverine hydrochloride 2% - 1.0 ml p/sh, i/m or in /in, atropine sulfate 0.1% - 1.0 ml p/w, platyphyllinum hydrotartrate 0.2% - 1.0-2.0 ml p/w.
- In case of severe pain syndrome, it is possible to combine the above-mentioned antispasmodics with analgesics: Analgin 50% - 2.0 ml i/m, Baralgin - 5.0 ml i/v slowly, Halidor 2.5% - 2.0 ml i/m or in /in.
- When injectable antispasmodics and analgesics are ineffective, narcotic analgesics are used.
- In the event of ineffectiveness of the above measures and taking into account the placement of calculi, different types of blockades with novocaine 0.5% - 40-60 ml are performed (if there is a calculus in the lower part of the ureter - blockade according to Lorin-Epstein - in the area of the spermatic cord in men or round uterine ligament in women; if there is a concretion in the middle or upper third of the ureter - intrapelvic blockade according to Shkolnikova).

WARNING ! It is not recommended to perform a paranephric blockade according to Vishnevsky in the case of a renal ring, as a rupture of a stressed kidney is possible in case of accidental damage to its capsule.

- Chloroethyl irrigation of the paravertebral area in the lumbar spine.
- Acupuncture reflexology according to the first variant of the inhibitory method on acupuncture points: E36(2), R3(2), RP6(2), R6(2), CV4. The most effective is the

- combination of reflexology with pharmaco-, phyto- and psychotherapy.
- Information-wave therapy on acupuncture points.
- Catheterization of the ureter to restore the passage of urine.
- Drinking regimen: after the pain syndrome is relieved, it is prescribed to drink a large amount of liquid.
- The patient must be under the dynamic supervision of a urologist.

Acute urinary retention is a state of urinary retention with an overfilled bladder.

Etiology . Mechanical obstructions, neurological and functional-reflex disorders are among the causes of urinary retention. One of the most common causes is prostate adenoma. Prostate cancer, prostatitis, stone, bladder cancer, phimosis, rupture of the ureter are also among the factors of urinary retention. Urinary retention is possible after operations, transplants, etc.

Pathogenesis . With the syndrome of acute urinary retention, the normal outflow of urine is disturbed due to the occurrence of obstruction in the path of urine outflow, which leads to the accumulation of urine in the bladder, its overstretching. More often there are mechanical obstructions (increase in the size of the prostate gland), but it should be remembered that tumors or traumatic lesions of the spinal cord and (or) brain, as well as hysteria lead to functional reflex retention of urine. Acute cessation of urine output is observed in poisoning, toxic-allergic urethritis.

Clinic . Pain above the pubis, which sharply increases with repeated urges to urinate. Pain appears or radiates to the perineum, lumbar region. The nature of the pain is paroxysmal: it periodically intensifies, disappears and reappears. During palpation in the suprapubic area, a dense (tense) formation is palpable, painful when pressed. During percussion, the bladder is enlarged.

Diagnostics . Propaedeutic skills are important: the ability to take an anamnesis, focusing on the use of alcoholic beverages, an allergic anamnesis, establishing the chronology of the onset of pain, urinary delays, palpation and percussion of the suprapubic area, analysis of ultrasound studies in dynamics (changes in the size of the prostate gland, the presence of heterogeneous changes in its parenchyma , uneven contours, etc.).

Algorithm for providing emergency aid for acute urinary retention .

- Antispasmodics and painkillers by injection: no-shpu 2% – 2.0-4.0 ml IV, papaverine hydrochloride 2% – 1.0 ml IV, IV or IV, Platyphyllin hydrotartrate 0, 2% - 1.0-2.0 ml p/sh.
- Catheterization of the urinary bladder with a rubber catheter.
- After emptying the bladder, wash it with a 0.02% furacilin antiseptic solution.
- If after catheterization of the urinary bladder, independent urination has not been restored, the issue of surgical elimination of the causes of urinary retention is considered.
- The patient must be under the dynamic supervision of a urologist.

Questions for self-control:

1. Quick recognition of an emergency in a patient.
2. Be able to quickly give and receive commands to medical personnel depending on the critical situation (teamwork).
3. To be able to quickly carry out a differential diagnosis of an emergency.
4. Examination (physical methods, measurement of blood pressure, blood pressure, heart rate, SpO₂, thermometry, capnometry-graphy, glucometry, drawing up a plan for laboratory and instrumental studies).
5. Determination of the treatment scheme based on theoretical knowledge of protocols obtained at previous departments.
6. Assistance (introduction of intravenous injections and a catheter, oxygen supply, use of a functional bed, catheterization of the urinary bladder with a soft probe).
7. Communication skills with staff and relatives in an emergency patient situation.

Approximate tasks for working out the theoretical material :

Renal colic;

Acute urinary retention.

6. Practical works (tasks) to be performed:

Physical examination methods;
Blood pressure measurement;
BH measurement;
Heart rate measurement;
SpO₂ measurement;
Thermometry;
Draw up a plan for laboratory and instrumental research;
Catheterization of the urinary bladder with a soft probe.

7. Test tasks for self-control:

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

- A. Hemodialysis
- B. Plasmapheresis
- C. Neogemodesis
- D. Enterosorbent
- E. Diuretics

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

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

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

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

4. A 19-year-old boy with exacerbation of secondary obstructive of pyelonephritis, *Pseudomonas aeruginosa* was isolated from the urine in a titer of 1,000,000 microbial bodies per 1 ml. What antibacterial drug is the most appropriate to prescribe in this case?

- A. Ampicillin
- B. Cefazolin
- C. Azithromycin
- D. Ciprofloxacin
- E. Levomycetin

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

- A. Nephritic
- B. Nephrotic
- C. Urinary
- D. Hematuric
- E. Mixed

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

- A. Bacpos of urine
- B. Excretory urography
- C. Cystoscopy
- D. Survey urography
- E. Nechiporenko's test

7. A 46-year-old patient with complaints of sharp, attack-like pain in the right lumbar area, radiating to the inguinal area and to the inner surface of the thigh, was brought to the reception room by ambulance. The pain appeared suddenly a few hours ago. The day before, the patient had profuse painless hematuria with worm-shaped blood clots. I was not sick before. What disease should be thought of first?

- A. Bladder tumor
- B. Cancer of the right kidney
- C. Necrotic papillitis
- D. Acute glomerulonephritis
- E. Urolithiasis, right kidney stone

8. A 44-year-old patient was brought to the clinic because of pain in the left half of the lumbar region, which appeared after a fall from a height of 2 m. After the injury, he noticed the presence of macrohematuria during urination twice. Condition of medium severity. Blood pressure and pulse are normal. No pathological changes were found in the chest and abdominal organs. There is a small painful swelling in the left lumbar area. What is the previous diagnosis?

- A. Urinary stone disease
- B. Closed kidney damage
- C. Kidney tuberculosis
- D. Kidney tumor
- E. Acute pyelonephritis

9. An 18-year-old patient was brought to the hospital with significant edema, which appeared two weeks after a sore throat. An increase in blood pressure up to 160/110 mm Hg was detected. Acute glomerulonephritis is suspected. What can be detected in urine sediment?

- A. Significant proteinuria, erythrocyturia, cylindruria
- B. Slight proteinuria, leukocyturia
- C. Microhematuria, crystalluria
- D. Moderate proteinuria, macrohematuria, hyaline cylindruria
- E. Macrohematuria, leukocyturia

10. A 36-year-old patient complains of frequent, painful, difficult urination, constant urges to urinate, the appearance of several drops of blood in the urine at the end of urination. She fell ill suddenly after hypothermia. During ultrasound, there is little urine in the bladder, the walls of the bladder are swollen, uniformly thickened. In urine: leukocytes 30-40 in p/z, protein 0.099 g/l, erythrocytes unchanged 5-7 in p/z.

What is the most likely diagnosis?

- A. Acute salpingo-oophoritis
- B. Ureterocele
- C. Acute cystitis
- D. Bladder tumor
- E. Bladder stone

Correct answers:

1-A; 2-A; 3-E; 4-D; 5-B; 6-C; 7-B; 8-B; 9-A; 10-C.

8. Individual tasks for students of higher education on the topic:

Not provided by the Work Program.

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

Main:

1. Emergencies in the practice of a therapist and family doctor / under the editorship Yepishyna A.V. – ISBN: 978-966-673-122-0. Ukrmedknyga 2019p. 380 pages
2. Mechanical Ventilation in Emergency Medicine. by Susan R. Wilcox & Ani Aydin & Evie G. Marcolini. ISBN 978-3-319-98409-4 ISBN 978-3-319-98410-0 (eBook).
<https://doi.org/10.1007/978-3-319-98410-0/2019> . 122 pages
3. Acute Medicine: A Practical Guide to the Management of Medical Emergencies, 5th Edition / David C. Sprigings (Editor), John B. Chambers (Editor) - ISBN: 978-1-118-64428-7. July 2017 Wiley-Blackwell, 784 Pages

Additional:

1. The Complete First Aid Pocket Guide. by John Furst / ISBN 9781507208892 - Adams Media, 2018. 190 pages
2. Manual of emergency medicine / editor, G. Richard Braen. — 6th ed. ISBN: 978-1-60831-249-8. May 23, 2011. 704 pages

Electronic information resources:

1. <https://zakon.rada.gov.ua/laws/show/z0356-22#n42>
2. https://courses.prometheus.org.ua/courses/NMU/Cardiology101/2017_T1/course/
3. <https://emergencymanual.stanford.edu/downloads/>
4. <https://www.coursera.org/learn/infarction>
5. <https://www.coursera.org/learn/managing-asthma-allergies-diabetes-and-seizures-in-school>
6. <https://www.futurelearn.com/courses/critical-care>
7. <https://www.medscape.org/viewarticle/964673>
8. <https://www.medscape.org/viewarticle/964201>
9. <https://www.medscape.org/viewarticle/965140>
10. <https://www.c-tecc.org/news/ukrainian-tecc-guidelines>