№ ЛД -21 (ИН)

Federal State Budgetary Educational Institution of Higher Education "North Ossetian State Medical Academy" of the Ministry of Health of the Russian Federation

department Pharmacology with Clinical Pharmacology

APPROVED
minutes of the meeting of the Central Coordinating Educational and Methodological Council dated May 23, 2023 No. 8

VALUATION FUND

discipline "Pharmacology»

the main professional educational program of higher education - a program of a specialist in a specialty 31.05.01 Medical business approved 05/24/2023.

for students 3 courses

by specialty 31.05.01 Medical business

Reviewed and approved at the meeting of the department on Mary 22, 2023 (minutes No.12)

Head. Chair, Professor : L.Z. Bolieva

Vladikavkaz 2023.

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Federal State Budgetary Educational Institution of Higher Education "North Ossetian State Medical Academy»
Ministry of Health of the Russian Federation

Department Pharmacology with Clinical

Pharmacology

Questions about modules

in the discipline "Pharmacology»

the main professional educational program of higher education - a program of a specialist in a specialty 31.05.01 Medical business approved on May 24, 2023

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Head. Chair, Professor : L.Z. Bolieva

Vladikavkaz 2023

Questions to the module on the theme:
«General pharmacology with recipes»

1. General pharmacology as section of pharmacology.
2. A concept about pharmacokinetics. Problems of pharmacokinetics.
3. Ways of introduction of medicinal substances to an organism. Characteristic of enteral and parenteral ways of introduction.
4. Absorption of medicinal substances from the place of introduction. Absorption mechanisms (diffusion, filtration, active transport, pinocytosis)
5. The factors influencing absorption of medicinal substances (properties of medicines, meal, size pH, a condition of digestive tract, etc.).
6. Concept about bioavailability.
7. Features of penetration of medicinal substances through a placenta and a hematoencephalic barrier
8. Transport of medicinal substances in an organism. Communication of medicinal substances with proteins of plasma of blood. Value of this communication. The factors influencing distribution of medicinal substances.
9. A concept about presistemny metabolism. Effect of the first passing through a liver. Circles of circulation of medicinal substances in an organism. Value of enterogepatic circulation of medicinal substances.
10. Biotransformation of medicinal substances in an organism. Biotransformation phases. The factors influencing biotransformation of medicinal substances.
11. A concept about inductors and inhibitors of mikrosomal oxidation. Their influence on metabolism of medicinal substances.
12. Influence of genetic factors on metabolism of medicinal substances. A concept about a pharmakogenetics.
13. Ways of removal of medicinal substances from an organism. The factors influencing removal of medicinal substances.
14. Main pharmacokinetic parameters: the volume of distribution (V_d), elimination rate constant (K_{elim}), half-elimination period ($t_{1/2}$), clearence (Cl), equilibrium concentration (C_{ss}), bioavailability (F) significance of these indicators.
15. The main content of pharmacodynamics.
16. The main types of action of drugs: local, resorptive, reflex, selective, basic, side, reversible and irreversible, direct, indirect.
17. Primary and secondary pharmacological reactions. Stages and mechanisms of pharmacological reaction.
18. The concept of targets for the action of drugs. The concept of the receptor, effector, secondary mediators, affinity and internal activity.
19. Factors affecting the action of drugs. Chronopharmacology.
20. Types of doses (minimum, average, highest, single, daily, course). General principles of dosing. The concept of" breadth of therapeutic action","therapeutic index". Lethal and toxic doses.
21. The concept of activity and efficiency.
22. The combined effect of drugs. Rational and irrational combinations. Action change drugs by their combined applications (synergism, antagonism, antidotes), examples.
23. Repeated use of drugs. Phenomena arising from repeated use of drugs: sensitization, cumulation, addiction, tachyphylaxis, drug dependence.
24. Side and toxic effects of drugs.
25. Pharmacological terms: drug substance, dosage form, drug, international nonproprietary name, trade name, original drug, generic, Pharmacopoeia monograph, State Pharmacopoeia, single dose, daily dose.
26. Medical prescription: structure, rules of registration, types of prescription forms.
27. Classification of dosage forms.

28. Tablets. General characteristic. Rules of prescribing.
29. Dragee. General characteristic. Rules of prescribing.
30. Capsules. General characteristic. Rules of prescribing.
31. Powders. General characteristic. Rules of prescribing.
32. Ointments. General characteristic. Ointment bases, the requirements imposed to ointment bases.
33. Methods of preparation and release of main and official ointments, the rules of prescribing.
34. Pastes. General characteristic. Form-building substances in the pasta, making pasta, the rules of writing out the recipes.
35. Suppositories. General characteristic. Features formative substances in suppositories, methods of preparation and packaging of candles, the rules of prescribing.
36. The General idea of the patches.
37. Solutions: components, solvents, methods of application of solutions, rules of prescription.
38. Suspension: components, rules of prescribing.
39. Features of preparation of infusions and decoctions, application, rules of prescription.
40. Features of infusions and extracts, methods of preparation, differences in the consistency of extracts, the rules of prescribing.
41. Emulsion, the rules of writing.
42. Liniments, unlike ointments, formative substances, the rules of prescription.Mixtures. General characteristic. Rules of prescribing.
43. Aerosols. General characteristic. Rules of prescribing
44. Dosage forms for injection. General characteristic. Rules of prescribing.

Questions to the module on «Drugs affecting the efferent innervation»

1. The mechanism of transmission of nerve impulses in the Central nervous system and the endings of efferent nerve fibers, mediators, specific receptors, reacting with mediators.
2. Localization of M-and N-cholinergic receptors in the body, their functional significance,
3. Classification of pharmacological agents affecting cholinergic receptors.
4. The main effects of M-and N-cholinomimetics, indications for use, side effects.
5. The main effects of M-cholinomimetics, indications for use, side effects. Comparative characteristics of drugs.
6. Clinical manifestations of muscarin poisoning, measures to help.
7. The main properties of anticholinesterase agents, the mechanism and features of their action, application in practical medicine, possible complications.
8. Clinical manifestations and measures to help in acute poisoning with organophosphorus compounds.
9. The main properties of M-cholinoblockers, mechanism and features of their action, application in practical medicine, possible complications.
10. Clinical manifestations of atropine poisoning, measures of help.
11. N-cholinomimetics, mechanism of action, indications for use, side effects.
12. Classification of ganglion blocking agents by chemical structure and duration of action. Mechanisms of action of ganglion blockers, pharmacological effects. Indications, side effects, contraindications.
13. Classification of muscle relaxants according to mechanism of action.
14. Clinical manifestations and measures of help in acute poisoning with muscle relaxants.
15. The structure and functions of adrenergic synapse.
16. Localization and functions of α and β-adrenergic receptors. Classification of adreno-and sympathomimetics.
17. The mechanism of action, the main effects of α-and β-adrenomimetics, indications for use, side effects. Comparative characteristics of adrenaline and norepinephrine.
18. The mechanism of action, the main effects of α-adrenomimetics, indications for use, side effects.
19. The mechanism of action, the main effects of β-adrenomimetics, indications for use, side effects.

20. Peculiarities of action of ephedrine. Side effect. Comparative characteristics of adrenaline and ephedrine.
21. Classification of adrenoblockers.
22. α-blockers. Classification; indications for use, side effects, contraindications.
23. β-blockers. Classification, indications for use, side effects, contraindications.
24. Sympatholytics. The mechanism of action, indications for use, side effects, contraindications.

Recipes.

1. Cholinomimetics in glaucoma.
2. Cholinomimetic to stimulate intestinal motility.
3. Means for reflex stimulation of breathing.
4. Anticholinesterase agent for glaucoma (eye drops).
5. Anticholinesterase agent for stimulating bowel motility.
6. Anticholinesterase agent for the treatment of residual effects after polio.
7. Drug used in the selection of glasses.
8. M-cholinoblocker to prevent reflex bradycardia during surgery.
9. Drug for controlled hypotension.
10. Drug to reduce blood pressure in hypertensive crisis.
11. Drug that causes prolonged relaxation of skeletal muscles.
12. Drug used for short-term relaxation of skeletal muscles in the reduction of dislocation.
13. Adrenergic agonists to increase blood pressure.
14. Adrenergic agonists in anaphylactic shock.
15. Adrenergic agonists in rhinitis.
16. Adrenergic agonists in acute heart failure.
17. Adrenergic agonists in atrioventricular block
18. Drug substance for relief of bronchial asthma attacks.
19. Drug for the prevention of premature birth.
20. Sympathomimetic for acute rhinitis.
21. Adrenoblocker for the systematic treatment of hypertension.
22. A medicinal substance that eliminates spasm of peripheral vessels.
23. Adrenoblocker in pheochromocytoma.
24. Adrenoblocker for relief of hypertensive crisis.
25. A medicinal substance to prevent angina attacks.
26. A medicinal substance for open-angle glaucoma.
27. Sympatholytic for the treatment of hypertension.

Questions to the module on the theme: «Drugs affecting the Central nervous system»

1. Classification of General anesthetics. Comparative characteristics of funds for inhalation anesthesia.
2. Classification of General anesthetics. Comparative characteristics of funds for non-inhalation anesthesia. The combined use of drugs.
3. The mechanism of action of ethyl alcohol on the human body, pharmacokinetics, pharmacological effects, using. Treatment of alcoholism.
4. Classification of sleeping pills. Characteristics of drugs with narcotic type of action: mechanism of action, indications for use, side effects.
5. Classification of sleeping pills. Pharmacological characteristics of benzodiazepine receptor agonists: mechanism of action, effect on sleep phase, indications for use, side effects.
6. Classification of neuroleptics. Pharmacological effects of" typical " neuroleptics.

7. Comparative characteristics of antipsychotic drugs of different groups. Indications and contraindications to the appointment of drugs. Complications in the using.
8. Classification of antidepressants. The mechanism of action and pharmacological properties of the drugs. Indications for use, side effects.
9. Classification of tranquilizers. The mechanism of action, pharmacological effects, indications for use, side effects, comparative characteristics of drugs.
10. Sedatives. Mechanisms of action, indications for use.
11. Nootropic agents: mechanism of action, pharmacological effects, application.
12. Psychostimulants: classification, comparative characteristics of drugs (mechanism of action, pharmacological effects, indications for use, side effects).
13. Classification of narcotic analgesics. Pharmacological characteristics of opioid receptor agonists.
14. Comparative characteristics of narcotic analgesics. Indications and contraindications for use, side effects. Acute and chronic morphine poisoning, care, prevention.
15. Classification of antiepileptic agents. Mechanism of action. Use in certain forms of epilepsy.
16. Comparative characteristics of anti-epileptics. Indications and contraindications to the appointment of drugs. Side effect.
17. Classification of antiparkinsonian agents. Comparative evaluation of the effectiveness of drugs. Side effect.
18. Analeptics: classification, mechanisms of action, indications for use.
19. Means used for the treatment and prevention of mania. Side effect.

Recipes

1. Drug for inhalation anesthesia in diseases of the respiratory system.
2. Medicines for inhalation anesthesia in diseases of the cardiovascular system.
3. Drug for intravenous anesthesia ultrashort.
4. Ethyl alcohol for treatment of surgeon's hands, for compresses, for sterilization of instruments.
5. Sleeping pills-a derivative of barbituric acid.
6. Sleeping pills, little effect on the phase structure of sleep.
7. Drug to prevent Grand-Mal seizures.
8. Drug for the prevention of small convulsive seizures.
9. Drug for the relief of status epilepticus.
10. Drug for the treatment of parkinsonism from the group of dopamine receptor agonists.
11. Drug for Parkinson's disease is a precursor of dopamine.
12. Drug for the treatment of Parkinson's disease-Central holinoblokator.
13. Analgesic for premedication before anesthesia.
14. Analgesic for trigeminal neuralgia.
15. Analgesic with antipyretic activity.
16. Analgesic for myocardial infarction.
17. A drug used in the overdose of narcotic analgesics.
18. Drug for relief of acute psychomotor agitation.
19. Psychotropic drug with antiemetic activity.
20. Atypical antipsychotic.
21. Antidepressant with a pronounced sedative effect.
22. Antidepressant with sedative and psychoactive properties.
23. Antidepressant with psychostimulant properties.
24. A treatment for mania.
25. Drug in neurotic conditions, accompanied by a sense of anxiety, fear, emotional stress.
26. Tranquilizer in convulsive conditions, epileptic status.
27. Psychotonic drug.
28. Analeptic in cases of poisoning by barbiturates.
29. "Day" anxiolytic.
30. Medicines for restoration of functions of a brain at its traumatic defeat

Questions to the module on the topic: «Drugs affecting the functions of the Executive bodies»

1. Respiratory stimulants: classification, mechanisms of action, indications.
2. Antitussive agents: classification, mechanism of action, indications.
3. Expectorant and mucolytic means: classification, mechanisms of action, application.
4. Medicine used in bronchial asthma. Classification.
5. Drugs inhaled glucocorticoids, the mechanism of action, application. Stabilizers of membranes of fat cells: mechanism of action, indications.
6. Antileukotriene tools: classification, mechanisms of action, indications.
7. Methylxanthines: mechanism of action, indications.
8. The mechanism of action of bitterness on the secretory activity of the stomach. Principles of treatment of obesity with anorexigenic agents.
9. Complex therapy of diseases of the gastrointestinal tract, accompanied by a decrease in secretion and peristalsis. Means of replacement therapy when reduced secretion of the stomach;
10. Complex therapy of diseases of the gastrointestinal tract, accompanied by increased secretion and peristalsis.
11. Features of purpose of emetic agents. Drugs and mechanism of antiemetic action.
12. The importance of choleretic drugs in the treatment of diseases of the liver and biliary system. Classification and principles of action of preparations of this group. Hepatoprotectors and cholelitolitic funds: mechanisms of action, indications.
13. Laxative. Classification. The mechanism of action of castor oil, anthraglycosides, salt and synthetic laxatives. Indications for use.
14. Classification of agents affecting the myometrium.
15. Medicine that increase the tone and contractile activity of the myometrium. Classification, mechanism of action. Differences in the action on the uterus and the use of hormones of the posterior pituitary gland and prostaglandin drugs. Side effect.
16. Medicine that increase mainly the tone of the myometrium. Classification and application.
17. Medicine of reducing the tonus of the uterine cervix, the use. Means that reduce the tone and contractile activity of the myometrium. Mechanisms of action and application.
18. Classification of agents affecting erythropoiesis.
19. Ferrum grugs. Classification. Indications for use. Side effect. Mechanisms of action of cyanocobalamin and folic acid in hyperchromic anemia. Erythropoietin drugs.
20. Classification of antianginal agents.
21. Organic nitrates: mechanism of action, pharmacological effects, side effects, indications.
22. Calcium antagonists: mechanism of action, pharmacological effects, side effects, indications.
23. Beta-blockers: the mechanism of antianginal action, side effects, indications.
24. Classification of diuretics by chemical structure and mechanism of action.
25. The mechanism of action, indications and contraindications to the use of thiazide and thiazide-like diuretics.
26. The mechanism of action, indications and contraindications to the use of loop diuretics.
27. The mechanism of action, indications and contraindications to the use of potassium-saving diuretics.
28. The mechanism of action, indications and contraindications to the use of osmotically active diuretics.
29. Antihypertensive drugs, drugs of Central action. Features of the mechanism of action and pharmacological effects of clonidine and moxonidine.

30. Antihypertensive drugs, drugs of peripheral neurotropic hypotensive action: ganglioblockers, α-blockers, β-blockers, α, β-blockers, sympatholytics.
31. Drugs of myotropic hypotensive action. Mechanisms of action of vasodilator blockers of Ca2+channels (features of action of drugs digidropiridinovmi row); activators of K+-channels; the donators of nitrogen oxides.
32. Mechanism of action and pharmacological effects of angiotensin converting enzyme (ACE) inhibitors, angiotensin II receptor blockers and vasopeptidase inhibitors. Indications for use, side effects. Mechanism of action and pharmacological effects.
33. The mechanism of hypotensive action and pharmacological effects of agents affecting water-salt metabolism (thiazide and thiazide-like diuretics, loop diuretics, aldosterone antagonists).
34. Classification of hypertensive agents on the localization of the action. The mechanism of action and effects of drugs used in acute hypotension: adrenomimetics, angiotensin receptor agonists.
35. Classification of hypertensive agents on the localization of the action. The mechanism of action and effects of drugs used in chronic hypotension: General tonic agents and analeptics.
36. Classification and general characterization of the cardiotonic funds. Sources of cardiac glycosides, galenic, novogalenic drugs and individual glycosides.
37. The mechanism of action of cardiac glycosides. Intra-and extracardial effects of cardiac glycosides.
38. Indications for use of cardiac glycosides. The choice of funds depending on the type and manifestations of heart failure. Symptoms of cardiac glycoside overdose and relief measures.
39. "Non-glycoside" cardiotonic agents: classification, mechanism of action, indications for use, side effects, comparative characteristics of drugs.
40. Classification of antiarrhythmic drugs. Mechanisms of action of antiarrhythmic drugs.
41. The choice of antiarrhythmic drugs depending on the type of heart rhythm disorders.

Recipes.
1. Cardiac glycoside in acute heart failure.
2. Drug for atrioventricular block.
3. Drug for relief of angina attack.
4. Adrenoblocker for the systematic treatment of hypertension.
5. Cardioprotective agent that increases myocardial resistance to hypoxia.
6. ACE inhibitor for the treatment of hypertension.
7. Antianginal means of reflex action.
8. Cardiac glycoside in patients with chronic heart failure.
9. Calcium antagonist in coronary insufficiency.
10. Drug for relief of ventricular arrhythmias in myocardial infarction.
11. Antianginal agent from the group of β-blockers.
12. Drug for relief of bronchospasm attack.
13. Drug of myotropic action for the treatment of bronchial asthma.
14. Antitussive agent of Central action.
15. The Central respiratory stimulant action
16. Expectorant of reflex action.
17. Drug to increase appetite.
18. Anorexigenic agent.
19. Proton pump inhibitor for peptic ulcer.
20. Gastroprotective agent.
21. Medicine for hyperacid gastritis.
22. Antiemetic.
23. Medicine for acute and chronic diarrhea.

24. Medicine of replacement therapy in case of insufficiency of the gastric glands.
25. Hepatoprotective agent.
26. Laxative for acute poisoning.
27. Drug for induction and induction of labor.
28. Drug to stop abnormal uterine bleeding.
29. Drug for the treatment of ferrum deficiency anemia.
30. Drug of choice in anaphylactic shock.
31. Drug of stimulating leukopoiesis.
32. Diuretic for the treatment of acute pulmonary edema.
33. Diuretic for forced diuresis.
34. Diuretic for edema of the brain.
35. Diuretic for the treatment of hypertension.
36. K, Mg-sparing diuretic.

Questions to the module on the theme: «Drugs affecting metabolic processes»

1. Classification of antimicrobials.
2. Anti-gout drugs used to prevent attacks, mechanism of action. side effect.
3. Anti-gout drugs used for the relief of acute attack of gout, mechanism of action. side effect.
4. Classification of drugs used for the treatment of osteoporosis.
5. Vitamins groups B: role in metabolism, influence on nervous and cardiovascular systems, gastrointestinal tract, hematopoiesis, regeneration processes, clinic of Hypo - and vitamin deficiency. Indications, side effects.
6. Ascorbic acid, rutin, folic acid: pharmacological effects, therapeutic use, clinic of Hypo-and vitamin deficiency. Indications, side effects.
7. Vitamin A: pharmacological effects, therapeutic use, clinic of Hypo-and vitamin deficiency.
8. Vitamin K: pharmacological effects, therapeutic use, clinic of Hypo-and vitamin deficiency.
9. Vitamin E: pharmacological effects, therapeutic use, clinic of Hypo-and vitamin deficiency.
10. Vitamin D: pharmacological effects, therapeutic use, clinic of Hypo-and vitamin deficiency.
11. Glucocorticoid drugs: mechanisms of anti-inflammatory, anti-allergic and immunosuppressive action of glucocorticoids, pharmacological effects.
12. Dosage forms of glucocorticoids, indications for use, side effects and contraindications.
13. Drugs of mineralocorticoids (deoxycorticosterone acetate): indications, side effects.
14. Drugs of hormones of the female genital glands: (estrogenic and gestagenic preparations) indications for use, side effects.
15. Drugs of hormones of the male sex glands: (testosterone propionate, methyltestosterone) indications for use, side effects.
16. Anabolic steroids (retabolil, fenobolin) indications, side effects.
17. Classification of nonsteroidal anti-inflammatory drugs.
18. Non-steroidal anti-inflammatory drugs (non-selective COX-1 and COX-2 inhibitors): indications, contraindications, side effects.
19. Non-steroidal anti-inflammatory drugs (selective COX-2 inhibitors): indications, contraindications, side effects.
20. Preparations of hormones of the hypothalamus and pituitary: (somatotropin, oxytocin, vasopressin): pharmacological effects, therapeutic use.
21. The preparations of hormones of a thyroid gland (L-thyroxine, thyroidin, calcetin): pharmacological effects, therapeutic use.
22. Antithyroid drugs: (mercazolil): pharmacological effects, therapeutic use.
23. Drugs of hormones of the pancreas: classification of funds used for the treatment of diabetes.

24. Synthetic antidiabetic agents, (butamid, glibenclamide, metmorfin): mechanism of action, side effects.
25. Drugs used in different types of allergic reactions.
26. Histamine H1-receptor blockers: classification, mechanism of action, application, side effects.
27. Stabilizers of membranes of fat cells: mechanism of action, application, side effects.
28. Immunostimulatory agents: classification, mechanisms of action, application.
29. Immunosuppressants: classification, mechanisms of action, application.

Recipes

1. Anti-inflammatory agent for rheumatoid arthritis.
2. Anti-inflammatory agent for patients with gastric ulcer and duodenal ulcer.
3. Nonsteroidal anti-inflammatory agent.
4. Selective COX-2 inhibitor.
5. Histamine H1 receptor blocker inhibiting the Central nervous system.
6. A means to prevent influenza.
7. Means to suppress the graft rejection reaction.
8. Emergency treatment for anaphylactic shock.
9. Immunomodulator - preparation of the thymus gland.
10. A tool used in diabetes insipidus.
11. Pituitary hormone to stimulate labor.
12. A means of replacement therapy for hypothyroidism.
13. The tool used in hyperthyroidism.
14. A means of replacement therapy for diabetes.
15. Antidiabetic agent from the group of sulfonylurea derivatives.
16. Hormonal drug for the treatment of autoimmune diseases.
17. Hormonal preparation for the treatment of bronchial asthma.
18. Preparation of mineralocorticoids.
19. Hormonal agent for the preservation of pregnancy.
20. Anabolic steroid.
21. Vitamin preparation for polyneuritis.
22. Vitamin preparation, lowering the permeability of the vascular wall.
23. Vitamin preparation for the treatment of xerophthalmia.
24. Vitamin preparation regulating calcium-phosphorus metabolism.
25. Vitamin preparation in case of overdose of anticoagulants of indirect action.
26. Means for relief of an acute attack of gout.
27. A means of promoting the excretion of uric acid.
28. Steroid anti-inflammatory agent for gout treatment.
29. The drug is an active metabolite of vitamin D3.
30. Anabolic steroid to enhance osteosynthesis.

Questions to the module on the topic: "Chemotherapeutic drugs»

1. Penicillins. Classification, mechanism and spectrum of action, route of administration, duration of action of drugs. Features of pharmacodynamics, pharmacokinetics and use of individual drugs. Side effects. Prevention and treatment of side effects.
2. Cephalosporins. Classification, mechanism and spectrum of action, route of administration, duration of action of drugs. Features of pharmacodynamics, pharmacokinetics and use of individual drugs. Side effects. Prevention and treatment of side effects.

3. Carbapenems. Classification, mechanism and spectrum of action, route of administration, duration of action of drugs. Features of pharmacodynamics, pharmacokinetics and use of individual drugs. Side effects. Prevention and treatment of side effects.
4. Monobactams. Classification, mechanism and spectrum of action, route of administration, duration of action of drugs. Features of pharmacodynamics, pharmacokinetics and use of individual drugs. Side effects. Prevention and treatment of side effects.
5. Macrolides, (erythromycin, clarithromycin, roxithromycin, azithromycin, spiramycin,). Classification, mechanism and spectrum of action, route of administration, duration of action of drugs. Features of pharmacodynamics, pharmacokinetics and use of individual drugs. Side effects. Prevention and treatment of side effects.
6. Tetracyclines: tetracycline, tetracycline hydrochloride, oxytetracycline, metacycline, doxycycline. Classification, mechanism and spectrum of action, route of administration, duration of action of drugs. Features of pharmacodynamics, pharmacokinetics and use of individual drugs. Side effects. Prevention and treatment of side effects.
7. Group of chloramphenicol: chloramphenicol, chloramphenicol succinate soluble. Mechanism and range of action. Indications for use, side effects.
8. Aminoglycosides: streptomycin sulfat, streptomycin helically complex, neomycin sulfate, monomitsin, kanamycin, gentamicin sulfate, tobramycin, sisomicin, amikacin, netilmicin. Classification. The mechanism and range of action, route of administration, duration of action of drugs. Features of pharmacodynamics, pharmacokinetics and the use of certain drugs, side effects. Prevention and treatment of side effects.
9. Rifampicins (rifamycin, rifampicin), cyclic polypeptides (polymyxin M-sulfate). Mechanism and range of action. Indications for use. Features of the application. Side effect.
10. Lincosamide (clindamycin), glycopeptides: vancomycin, - teicoplanin. Features of the application. Side effect.
11. Sulfonamides. Classification, spectrum and mechanism of antibacterial action. Indications for use Complications when taking measures to prevent them. Side effect.
12. Chinolone derivatives, benefits derivatives hinolona fluorinated (fluoroquinolones). Classification, spectrum and mechanism of antibacterial action. Application. Side effect.
13. Oxazolidinones, derivatives of nitrofuran. Spectrum, nature and mechanism of antimicrobial action. Application. Side effect.
14. Derivatives of 8 – hydroxyquinoline, derivatives of cinoxacin. Indications for use. Side effect.
15. Classification of anti-tuberculosis drugs.
16. Classification of drugs antisyphyllitic funds.
17. The most effective drugs (isoniazid, rifampicin), drugs with medium efficacy (ethambutol, streptomycin, cycloserine, etc.), drugs with moderate activity (sodium para-aminosalicylate). Side effects, prevention and treatment measures.
18. Antiviral agents used in influenza, the mechanism of action, especially the use, side effects.
19. Antiviral agents used in herpes, mechanisms of action, features of application, side effects.
20. Antiviral agents used in HIV infections, with cytomegalovirus infection. Mechanisms of action, especially the use of side effects.
21. Anti-malaria treatment. Classification.
22. Quinidine, sources of production. Spectrum of antimalarial activity. Side effect. Application. Acute quinine poisoning, its treatment.
effects.
23. Classification Antiprotozoal funds.
24. Classification of antifungal agents.
25. Classification of anthelmintic agents.
26. Means used in intestinal cestodosis, especially the use, side effects.
27. Means used in extra-intestinal helminthiasis, especially the use, side effects.
28. Drugs used for the treatment of systemic mycoses. Features of pharmacokinetic action. Complications and side effects.

29. Drugs used for the treatment of ringworm. Especially their actions. The rules of treatment.
30. Drugs used to treat Candida. Mechanism of action. Side effect. Indications and contraindications.

Recipes.

1. Biosynthetic penicillin is a short-acting.
2. Semi-synthetic penicillin (aminopenicillin) broad spectrum.
3. Semi-synthetic penicillin, resistant to beta-lactamases.
4. An antibiotic to treat syphilis.
5. Cephalosporin I generation.
6. Cephalosporin II generation.
7. Cephalosporin III generation.
8. Antibiotic for Helicobacter pylori eradication.
9. An antibiotic from the macrolide group.
10. Anti-anaerobic.
11. Antibiotic for the treatment of plague and tularemia.
12. An antibiotic to treat cholera.
13. Antibiotic for treatment of brucellosis.
14. Antibiotic for treatment of typhoid fever.
15. Antibiotic, active against Bacteroides.
16. Sulfanilamide in the eye drops.
17. Fluoroquinolone.
18. Antifungal antibiotic.
19. Drug for the treatment of ascariasis.
20. Drug for the treatment of giardiasis.
21. Anti-tuberculosis antibiotic.
22. Synthetic antimicrobial agent for the treatment of tuberculosis.
23. Anti-uberculosis drugs.
24. Synthetic antituberculosis drug is a derivative of isonicotinic acid hydrazide.
25. Antibiotic-aminoglycoside, active against Pseudomonas aeruginosa.
26. Antiherpetic drug for parenteral administration.
27. Antiherpetic agent.
28. HIV reverse transcriptase inhibitor.
29. Drug for cytomegalovirus infection.
30. Inducer of interferons.
31. Drug for the treatment of candidiasis of the oral mucosa.
32. Antifungal agent for the treatment of systemic mycoses.
33. Drug for individual chemoprophylaxis of malaria.
34. Medicine for public chemoprophylaxis of malaria.
35. Medicine for the treatment of giardiasis.
36. Medicine for the treatment of toxoplasmosis.
37. Medicine for the treatment of ascariasis.

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Department Pharmacology with Clinical

Pharmacology

List of questions for the exam

in the discipline "Pharmacology»

the main professional educational program of higher education - a program of a specialist in a specialty 31.05.01 Medical business approved on May 24, 2023

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Reviewed and approved at the meeting of the department on May 22, 2023 (minutes No.12)

Head. Chair, Professor : L.Z. Bolieva

Vladikavkaz 2023

EXAM QUESTIONS IN PHARMACOLOGY
for students of the Faculty of Medicine

1. Pharmacology and its role in the development of medicine. The place of pharmacology among other biological and medical sciences. Merits of N.P. Kravkova, I.P. Pavlova, S.V. Anichkova, V.V. Zakusov and other outstanding scientists in the development of domestic pharmacology.
2. Pharmacokinetics, definition. Ways of introduction. Basic mechanisms of drug absorption; factors affecting absorption. The concept of bioavailability. Distribution of medicines. biological barriers. tissue depots.
3. Pharmacokinetics, definition. Biotransformation of drugs: stages of biotransformation, biotransformation reactions, factors influencing biotransformation processes. Pharmacogenetics.
4. Pharmacodynamics, definition. The main mechanisms of action of drugs. Interaction of drugs with receptors (the concept of agonists and antagonists). Types of action of drugs. Examples.
5. Synergism and antagonism of drugs: types and practical significance.
6. The main types of pharmacotherapy. Types of doses, breadth of therapeutic action. Combined use of drugs, practical significance.
7. Individual characteristics of the body and the effect of drugs: the role of age, genetic factors, concomitant diseases.
8. Reuse of drugs. Cumulation, its types. Sensitization. Addictive. Drug addiction.
9. The main and side effects of drugs. Hypersensitivity reactions.
10. The main and side effects of drugs. Teratogenicity, mutagenicity, carcinogenicity.
11. Drug poisoning, principles of assistance. Examples.
12. Interaction of drugs, definition, types.
13. Means that reduce the sensitivity of afferent nerves, classification. Local anesthetics, classification, mechanism of action, comparative characteristics of individual drugs, main effects and indications for use, undesirable effects.
14. M- and N-cholinomimetics, M-cholinomimetics: mechanism of action, pharmacological effects, indications for use, side effects. Acute muscarine poisoning, relief measures.
15. Anticholinesterase agents, classification, mechanism of action, main effects, indications for use, side effects. Acute poisoning with anticholinesterase drugs, main symptoms, measures of assistance.
16. M-anticholinergics: classification, mechanism of action, pharmacological effects and indications for use, side effects. Acute muscarine poisoning and relief measures.
17. Nicotine, main effects. Medical and social aspects of smoking. N-cholinomimetics: mechanism of action, pharmacological effects, indications for use, side effects.
18. Ganglioblockers: mechanism of action, main effects, indications for use, side effects.
19. Curare-like drugs: classification, mechanism of action, indications for use, side effects, measures to help with overdose.
20. α-and β-agonists: classification, mechanism of action, main effects, indications for use, side effects .
21. α-agonists: mechanism of action, main effects, indications for use, side effects.
22. β-agonists: classification, mechanism of action, main effects, indications for use, side effects
23. α- and β-blockers: classification, mechanism of action, main effects, indications for use, side effects.
24. α-blockers: classification, mechanism of action, main effects, indications for use, side effects.
25. β-blockers: classification, mechanism of action, main effects, indications for use, side effects.
26. Sympatholytics: mechanism of action, main effects, indications for use, side effects.
27. The history of the discovery and use of drugs for anesthesia. Theories of anesthesia. Classification of drugs for anesthesia. Means for inhalation anesthesia: comparative characteristics of drugs.
28. Classification of drugs for anesthesia. Means for non-inhalation anesthesia: classification, comparative characteristics of drugs .
29. Ethanol. Local and resorptive action. Application in medicine. Toxicological characteristic. Acute

poisoning and its treatment. Alcoholism, possible approaches to therapy.

30. Hypnotics with a narcotic type of action: classification, mechanism of action, main effects, indications for use, side effects. Acute poisoning and measures of assistance.
31. Hypnotic drugs, classification, comparative characteristics of drugs with narcotic and non-narcotic types of action, indications for use, side effects. Acute barbiturate poisoning, symptoms and treatment.
32. Sedatives, mechanism of action, indications for use, side effects.
33. Antipsychotics: classification. Typical antipsychotics: mechanism of antipsychotic action, indications for use, side effects.
34. Drugs for the treatment of mania: mechanism of action, use, side effects.
35. Antidepressants: classification. Comparative characteristics of drugs: mechanisms of action, indications for use, side effects.
36. Nootropics: mechanism of action, pharmacological effects, indications for use, side effects .
37. Psychostimulants and analeptics: classification, mechanism of action, application, side effects.
38. Tranquilizers: classification, mechanism of action, indications for use, side effects.
39. Antiepileptic drugs: classification, main mechanisms of action, comparative characteristics of drugs. General principles of pharmacotherapy of epilepsy.
40. Antiparkinsonian drugs: classification. Comparative characteristics of drugs: mechanism of action, application, side effects.
41. Narcotic analgesics: classification, mechanism of action, pharmacological effects, indications for use, side effects. Acute poisoning with narcotic analgesics and measures of assistance.
42. Non-narcotic analgesics: classification, mechanism of action, indications for use, side effects. Acute paracetamol poisoning, relief measures.
43. Non-steroidal anti-inflammatory drugs: classification, mechanism of action, main effects, indications for use, side effects.
44. Glucocorticosteroids: mechanism of action, pharmacological effects. Side effects of systemic use of corticosteroids.
45. Classification and mechanism of action of glucocorticosteroids.
46. Antidiabetic drugs, classification, mechanism of action, main effects, indications for use; complications, measures of assistance and prevention.
47. Thyroid hormone preparations and antithyroid drugs: mechanisms of action, main effects, indications for use, side effects .
48. Preparations of male sex hormones, main effects, indications for use, undesirable effects. Antiandrogenic drugs, application. Anabolic steroids, indications for use, complications.
49. Preparations of female sex hormones and their antagonists, pharmacological effects, indications for use, side effects.
50. Preparations of hormones of the hypothalamus, pituitary gland, pineal gland: mechanism of action, use, side effects .
51. Drugs affecting the myometrium: classification, indications for use, side effects.
52. Preparations of water-soluble vitamins, main effects and indications for use, side effects.
53. Preparations of fat-soluble vitamins, main effects and indications for use, side effects.
54. Vitamin C: pharmacological effects, therapeutic applications.
55. Vitamin D: biological role, main effects, use, side effects.
56. Antiallergic drugs, classification. Histamine H1 receptor blockers, mechanism of action, pharmacological effects, indications for use, side effects.
57. Antiallergic drugs, classification. Antileukotriene drugs and mast cell membrane stabilizers, mechanism of action, pharmacological effects, indications for use, side effects.
58. Means used for the treatment of bronchial asthma: classification, mechanism of action, use in bronchial asthma, side effects.
59. Antitussives and expectorants: classification, mechanism of action, use, side effects.
60. Means used for violations of the secretory function of the gastric glands: classification, mechanisms of action, indications for use, side effects.
61. Drugs that lower the secretory activity of the gastric glands: classification, mechanism of action,

indications for use.

62. Drugs affecting gastric motility, emetics and antiemetics, gastroprotectors: mechanism of action, use, side effects.
63. Means for violation of the function of the pancreas, hepatoprotectors, choleretic: pharmacological effects, indications for use, side effects.
64. Drugs affecting the motor function of the intestine, features of action, indications for use, side effects.
65. Antiplatelet agents: classification, mechanism of action and pharmacological effects, indications for use, side effects.
66. Anticoagulants: classification, mechanism of action, indications for use, possible complications and assistance measures.
67. Fibrinolytics and antifibrinolytic agents: mechanism of action, pharmacological effects, use, side effects.
68. Drugs that increase blood coagulation: mechanism of action, use, side effects.
69. Drugs affecting hematopoiesis: classification, mechanism of action, application, side effects.
70. Diuretics: classification, mechanism of action, indications for use; side effects .
71. Antihypertensive drugs, classification. Antiadrenergic drugs: classification, mechanism of action, main effects, indications for use, side effects.
72. Antihypertensive drugs: classification. Means affecting the RAAS: classification, mechanism of action, pharmacological effects, use, side effects.
73. Direct myotropic antihypertensive drugs and vasopeptidase inhibitors: mechanism of action, application, side effects.
74. Hypertensive drugs: mechanism of action, use, side effects.
75. Means used in violation of cerebral circulation: mechanism of action, application, side effects.
76. Ca-channel blockers: classification, mechanism of action, pharmacological effects, indications for use, side effects.
77. Means used in IHD: classification, mechanism of action, use in IHD, side effects.
78. Cardiac glycosides: classification, mechanism of cardiotonic action, pharmacological effects, action in heart failure, ECG changes under the influence of cardiac glycosides, side effects.
79. Non-glycoside structure cardiotonic drugs: mechanism of action, application, side effects.
80. Antiarrhythmic drugs: classification, features of the mechanism of action and pharmacological effects of the main groups of antiarrhythmic drugs, indications for use, side effects.
81. Means used to treat heart failure: classification, mechanism of action, pharmacological effects, use, side effects .
82. Anti-atherosclerotic drugs: classification, mechanism of action, pharmacological effects, use, side effects .
83. Antimicrobial chemotherapeutic agents, classification. Basic principles of chemotherapy.
84. Antiseptics and disinfectants: classification, mechanism of action of drugs, use, side effects .
85. Penicillins: classification, mechanism of action, pharmacokinetics, spectrum of action, indications for use, side effects .
86. Cephalosporins: classification, mechanism of action, pharmacokinetics, side effects.
87. Cephalosporins: classification. Cephalosporins I-II generation: spectrum of antimicrobial activity, indications for use.
88. III generation cephalosporins: mechanism of action, spectrum of antimicrobial activity, indications for use.
89. IV-V generation cephalosporins: mechanism of action, spectrum of antimicrobial activity, indications for use.
90. Beta-lactam antibiotics, classification. Carbapenems and monobactams: mechanism of action, pharmacokinetics, spectrum of antimicrobial activity, indications for use, side effects.
91. Carbapenems: classification, mechanism of action, pharmacokinetics, spectrum of action, indications for use, side effects .
92. Monobactams: mechanism of action and spectrum of activity, indications for use, side effects.
93. Macrolides: classification, mechanism of action, features of pharmacokinetics, spectrum of action,

indications for use, side effects.

94. Aminoglycosides: classification, mechanism of action, features of pharmacokinetics and spectrum of action of individual drugs, indications for use, side effects.
95. Tetracyclines: classification, mechanism of action, features of pharmacokinetics, spectrum of action, indications for use, side effects.
96. Fluoroquinolones: classification, mechanism of action, indications for use, side effects.
97. Glycopeptides and lincosamides: classification, mechanism of action, pharmacokinetics, spectrum of action, indications for use, side effects.
98. Cyclic polypeptides, amphenicols, oxosalidinones, fusidic acid: mechanism of action, spectrum of antimicrobial activity, application, side effects.
99. Sulfonamides: classification, mechanism of action, features of pharmacokinetics, spectrum of action, indications for use, side effects.
100. Synthetic antimicrobial agents - derivatives of 8-hydroxyquinoline, nitrofuran, quinoxaline: mechanism of action, comparative characteristics of drugs, indications for use, side effects.
101. Anti-tuberculosis drugs. Basic principles of tuberculosis treatment. Prevention of adverse side effects.
102. Anti-tuberculosis drugs. Classification. Synthetic anti-tuberculosis drugs: mechanism of action, application, side effects.
103. Anti-tuberculosis drugs. Classification. Antituberculous antibiotics: mechanism of action, application, side effects.
104. Antifungal agents: classification. Antifungal antibiotics - polyenes: mechanism of action, spectrum of action, indications for use, side effects.
105. Antifungal agents: classification. Azoles: mechanism of action, spectrum of action, indications for use, side effects.
106. Antiviral agents: classification, mechanisms of action, application, side effects.
107. Antiviral agents for the treatment of influenza: classification, mechanism of action, indications for use, side effects.
108. Antihelminthic drugs: classification, mechanism of action, features of pharmacokinetics and spectrum of action of individual drugs, indications for use, side effects.
109. Antiprotozoal drugs: classification, mechanism of action, use, side effects.
110. Drugs used in malignant neoplasms: classification, mechanisms of action, application, side effects.

№ ЛД-21 (ИН)

Federal State Budgetary Educational Institution of Higher Education "North Ossetian State Medical Academy»
Ministry of Health of the Russian Federation Кафедра

Pharmacology with Clinical Pharmacology

Samples of test tasks

in the discipline "Pharmacology»

the main professional educational program of higher education - a program of a specialist in a specialty 31.05.01 Medical business approved on May 24, 2023

for students 3 courses

by specialty 31.05.01 Medical business

Reviewed and approved at the meeting of the department on May 22, 2023 (minutes No.12)

Head. Chair, Professor : L.Z. Bolieva

Vladikavkaz 2023.

Samples of test tasks

1. Specify α-agonists:

1) phenylephrine hydrochloride (mesatone); 2) isadrin; 3) epinephrine (adrenaline); 4) norepinephrine (norepinephrine); 5) clonidine; 6) terbutaline; 7) dobutamine.

2. Choose the correct statement:

The mechanism of action of isadrin is associated with: 1) excitation of α- and β-adrenergic receptors; 2) blockade of α- and β-adrenergic receptors; 3) excitation of β1 and β2-adrenergic receptors; 4) blockade of β1 and β2-adrenergic receptors; 5) predominant excitation of β1 - adrenoreceptors; 6) predominant excitation of β2-adrenergic receptors.

2. Specify the indications for the use of β2-agonists:

1) hypotension; 2) bronchial asthma; 3) premature birth; 4) the threat of miscarriage; 5) acute heart failure; 6) AV block.

3. Check the means used to prolong the action of local anesthetics:

1) norepinephrine; 2) adrenaline; 3) ephedrine hydrochloride; 4) fenoterol.

4. Choose an adrenomimetic in the treatment of bronchial asthma and write a prescription for it:

1) ipratropium bromide; 2) fenoterol; 3) norepinephrine; 4) hexoprenaline.

5. Specify α- and β-agonists:

1) salbutamol; 2) ephedrine; 3) norepinephrine (norepinephrine); 4) naphthyzine; 5) nazivin; 6) fenoterol; 7) epinephrine (adrenaline).

6. Choose the correct statement:

Salbutamol has an adrenomimetic effect due to: 1) stimulation of α1-adrenergic receptors, which, through the Gq-protein system, causes activation of phospholipase C and inositol-1,4,5-triphosphate, an increase in the level of Ca ions in smooth muscle cells; 2) stimulation of α2adrenergic receptors, causing through the system of Gi-proteins inactivation of adenylatecyclase and protein kinase, an increase in the level of Ca2+ ions in smooth muscle cells; 3) stimulation of β2-adrenergic receptors, causing activation of adenylate cyclase and protein kinaseA through the Gs-protein system, a decrease in the level of Ca2+ ions in smooth muscle cells.

6. Specify the indications for the use of ephedrine:

1) bronchial asthma; 2) anaphylactic shock; 3) enuresis; 4) arterial hypertension;
5) thyrotoxicosis; 6) narcolepsy.

7. Mark contraindications to long-term administration of oxymetazoline (nazol):

1) rhinitis; 2) conjunctivitis; 3) severe atherosclerosis; 4) hypertension.

V. Choose an adrenomimetic for rhinitis and write a prescription for it:

1) naphazoline nitrate (naphthysine); 2) dobutamine; 3) salbutamol; 4) isadrine.

№ ЛД-21 (ИН)

Federal State Budgetary Educational Institution of Higher Education "North Ossetian State Medical Academy»
Ministry of Health of the Russian Federation Кафедра

Pharmacology with Clinical Pharmacology

Exam problem standards

in the discipline "Pharmacology»

the main professional educational program of higher education - a program of a specialist in a specialty 31.05.01 Medical business approved
for students 3 courses on May 23, 2023

by specialty 31.05.01 Medical business

Reviewed and approved at the meeting of the department on May 22, 2023 (minutes No.12)

Head. Chair, Professor : L.Z. Bolieva

Vladikavkaz 2023

TASKS

Task #1

Myotropic drug. It has a calming effect on the central nervous system. It has antihypertensive, choleretic, laxative effects. It is almost not absorbed from the gastrointestinal tract. As an antihypertensive agent, it is effective only when administered parenterally.
Define drug.

Task #2

The drug is an alkaloid. Increases the release of the mediator from the endings of adrenergic fibers. Causes vasoconstriction. Increases blood pressure, has a slightly weaker, but prolonged bronchodilator effect compared to adrenaline. It is used in the treatment and relief of attacks of bronchial asthma, with rhinitis.
Define drug.

Task #3

In case of an overdose, the drug causes: an increase in skin and tendon reflexes, shortness of breath, muscle tension in the back of the head, trismus of the jaws, tetanic convulsions (up to opisthotonus) at the slightest irritation; convulsions - complete muscle relaxation
Define drug.

Task #4

Highly active synthetic broad-spectrum antibacterial agents containing fluorine atoms in the structure. They have a bactericidal effect. They are used for infections of the respiratory, urinary tract and gastrointestinal tract. Possible side effects: arthropathy, arthralgia, myalgia, tendinitis, tendovaginitis, tendon rupture, photosensitivity.
Determine the group affiliation of drugs.

Task #5

After a walk in a summer camp, two boys felt very ill. When examining the children, the doctor found dilated pupils, rapid pulse, dry mouth, difficulty swallowing and urinating. The behavior of the children was restless. They asked for drinks in a hoarse voice and hardly answered questions. What plants could cause such symptoms? Relief measures.

Task #6

A xanthine derivative. Refers to psychostimulants. The nature of the effect depends on the dose. The main point of application of action is the neurons of the brain, it also has a pronounced stimulating effect on the respiratory and vasomotor centers. It has a direct or central effect on the vessels, stimulates the work of the heart, causes a diuretic effect.
Determine drug. Explain mechanism of action.