

№ ЛД-16 (ИИ)

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

Department of Pharmacology with Clinical Pharmacology

APPROVED

by the minutes of the meeting of the Central
Coordinating Educational and Methodological
Council No. 3 of February 5, 2021

EVALUATION FUND

in the discipline " Pharmacology »

the main professional educational program of higher education – specialty programs in the specialty 31.05.01 Medical care partially implemented in English approved on 26.02.2021.

for 3rd year students

by profession _____ 31.05.01 Medical business _____

Reviewed and approved at the meeting of the department
dated February 5, 2021 (Protocol No.9)

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List of questions for the exam

in the discipline " Pharmacology »

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QUESTIONS

1. Pharmacology and its role in the development of medicine. The place of pharmacology among other biological and medical sciences. The merits of N.P. Kravkov, I.P. Pavlov, S.V. Anichkov, V.V. Zakusov and other outstanding scientists in the development of domestic pharmacology.
2. Pharmacokinetics, definition. Ways of introduction. The main mechanisms of drug absorption; factors affecting absorption. The concept of bioavailability. Distribution of medicines. Biological barriers. Fabric depots.
3. Pharmacokinetics, definition. Biotransformation of drugs: stages of biotransformation, biotransformation reactions, factors affecting 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 medicines. Examples.
5. Synergism and antagonism of medicines: types and practical significance.
6. The main types of pharmacotherapy. Types of doses, the breadth of therapeutic action. Combined use of medicines, practical significance.
7. Individual characteristics of the body and the effect of medicines: the role of age, genetic factors, concomitant diseases.
8. Repeated use of medicines. Cumulation, its types. Sensitization. Addictive. Drug addiction.
9. The main and side effects of medicines. Hypersensitivity reactions.
10. The main and side effects of medicines. Teratogenicity, mutagenicity, carcinogenicity.
11. Drug poisoning, principles of care. Examples.
12. Interaction of drugs, definition, types.
13. Drugs 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 effect. Acute poisoning with anticholinesterase agents, the main symptoms, measures of assistance.
16. M-holinoblockers: classification, mechanism of action, pharmacological effects and indications for use, side effects. Acute muscarine poisoning and relief measures.
17. Nicotine, the main effects. Medical and social aspects of smoking. N-cholinomimetics: mechanism of action, pharmacological effects, indications for use, side effect.
18. Ganglioblockers: mechanism of action, main effects, indications for use, side effect.
19. Curare-like remedies: classification, mechanism of action, indications for use, side effect, measures of assistance in case of overdose.
20. α - and β -adrenomimetics: classification, mechanism of action, main effects, indications for use, side effects.
21. α -adrenomimetics: mechanism of action, main effects, indications for use, side effects.
22. β -adrenomimetics: classification, mechanism of action, main effects, indications for use, side effect
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 effect.
26. Sympatholytics: mechanism of action, main effects, indications for use, side effect.

27. The history of the discovery and application 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. Ethyl alcohol. Local and resorptive action. Application in medicine. Toxicological characteristics. Acute poisoning and its treatment. Alcoholism, possible approaches to therapy.
30. Sleeping pills with narcotic type of action: classification, mechanism of action, main effects, indications for use, side effects. Acute poisoning and relief measures.
31. Hypnotics, classification, comparative characteristics of drugs with narcotic and non-narcotic type of action, indications for use, side effect. Acute barbiturate poisoning, symptoms and relief measures.
32. Sedatives, mechanism of action, indications for use, side effects.
33. Neuroleptics: classification. Typical neuroleptics: mechanism of antipsychotic action, indications for use, side effect.
34. Drugs for the treatment of mania: mechanism of action, application, side effects.
35. Antidepressants: classification. Comparative characteristics of drugs: mechanisms of action, indications for use, side effect.
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 effect.
39. Antiepileptic drugs: classification, main mechanisms of action, comparative characteristics of drugs. General principles of pharmacotherapy of epilepsy.
40. Antiparkinsonian means: classification. Comparative characteristics of drugs: mechanism of action, application, side effect.
41. Narcotic analgesics: classification, mechanism of action, pharmacological effects, indications for use, side effect. Acute poisoning with narcotic analgesics and measures of assistance.
42. Non-narcotic analgesics: classification, mechanism of action, indications for use, side effect. Acute poisoning with paracetamol, measures of assistance.
43. Nonsteroidal anti-inflammatory drugs: classification, mechanism of action, main effects, indications for use, side effect.
44. Glucocorticosteroids: mechanism of action, pharmacological effects. Side effects of systemic use of GCS.
45. Classification and mechanism of action of glucocorticosteroids.
46. Antidiabetic agents, 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 effect.
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, epiphysis: mechanism of action, application, side effects.
51. Agents affecting the myometrium: classification, indications for use, side effect.
52. Preparations of water-soluble vitamins, main effects and indications for use, side effect.
53. Preparations of fat-soluble vitamins, main effects and indications for use, side effect.
54. Vitamin C: pharmacological effects, therapeutic use.
55. Vitamin D: biological role, main effects, application, side effect.

56. Antiallergic agents, classification. H1 blockers of histamine receptors, mechanism of action, pharmacological effects, indications for use, side effect.
57. Antiallergic agents, classification. Antileukotriene preparations and stabilizers of mast cell membranes, mechanism of action, pharmacological effects, indications for use, side effect.
58. Drugs used for the treatment of bronchial asthma: classification, mechanism of action, use in bronchial asthma, side effects.
59. Antitussive and expectorant agents: classification, mechanism of action, application side effects.
60. Drugs used for violations of the secretory function of the gastric glands: classification, mechanisms of action, indications for use, side effect.
61. Drugs that reduce the secretory activity of the gastric glands: classification, mechanism of action, indications for use.
62. Agents affecting gastric motility, emetic and antiemetic agents, gastroprotectors: mechanism of action, application, side effects.
63. Remedies for pancreatic dysfunction, hepatoprotectors, choleretic: pharmacological effects, indications for use, side effect.
64. Means affecting the motor function of the intestine, features of action, indications for use, side effect.
65. Antiplatelet agents: classification, mechanism of action and pharmacological effects, indications for use, side effect.
66. Anticoagulants: classification, mechanism of action, indications for use, possible complications and measures of assistance.
67. Fibrinolytics and antifibrinolytic agents: mechanism of action, pharmacological effects, application, side effects.
68. Agents that increase blood clotting: mechanism of action, application, side effects.
69. Agents affecting hematopoiesis: classification, mechanism of action, application, side effects.
70. Diuretics: classification, mechanism of action, indications for use; side effects.
71. Antihypertensive agents, classification. Antiadrenergic agents: classification, mechanism of action, main effects, indications for use, side effect.
72. Antihypertensive agents: classification. Agents affecting the RAAS: classification, mechanism of action, pharmacological effects, application, side effect.
73. Antihypertensive agents of direct myotropic action and vasopeptidase inhibitors: mechanism of action, application, side effects.
74. Hypertensive agents: mechanism of action, application, side effects.
75. Drugs 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. Drugs used in IHD: classification, mechanism of action, use in IHD, side effect.
78. Cardiac glycosides: classification, mechanism of cardiotonic action, pharmacological effects, action in heart failure, ECG change under the influence of cardiac glycosides, side effect.
79. Cardiotonic agents of non-glycosidic structure: 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 effect.
81. Drugs used to treat heart failure: classification, mechanism of action, pharmacological effects, application, side effect.
82. Anti-atherosclerotic agents: classification, mechanism of action, pharmacological effects, application, side effects.
83. Antimicrobial chemotherapeutic agents, classification. The basic principles of chemotherapy.
84. Antiseptics and disinfectants: classification, mechanism of action of drugs, application, side effects.

85. Penicillins: classification, mechanism of action, pharmacokinetics, spectrum of action, indications for use, side effects.
86. Cephalosporins: classification, mechanism of action, features of pharmacokinetics, side effect.
87. Cephalosporins: classification. Cephalosporins of the I-II generation: spectrum of antimicrobial activity, indications for use.
88. Cephalosporins of the third generation: mechanism of action, spectrum of antimicrobial activity, indications for use.
89. Cephalosporins of the IV-V generation: 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 action, indications for use, side effect.
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 effect.
94. Aminoglycosides: classification, mechanism of action, features of pharmacokinetics and spectrum of action of individual drugs, indications for use, side effect.
95. Tetracyclines: classification, mechanism of action, features of pharmacokinetics, spectrum of action, indications for use, side effect.
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 effect.
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 effect.
100. Synthetic antimicrobial agents - derivatives of 8-oxyquinoline, nitrofur, quinoxaline: mechanism of action, comparative characteristics of drugs, indications for use, side effect.
101. Anti-tuberculosis drugs. Basic principles of tuberculosis treatment. Prevention of adverse adverse reactions.
102. Anti-tuberculosis drugs. Classification. Synthetic anti-tuberculosis drugs: mechanism of action, application, side effect.
103. Anti-tuberculosis drugs. Classification. Antitubercular antibiotics: mechanism of action, application, side effect.
104. Antifungal agents: classification. Antifungal antibiotics - polyenes: mechanism of action, spectrum of action, indications for use, side effect.
105. Antifungal agents: classification. Azoles: mechanism of action, spectrum of action, indications for use, side effect.
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. Anthelmintic agents: classification, mechanism of action, features of pharmacokinetics and spectrum of action of individual drugs, indications for use, side effect.
109. Antiprotozoal agents: classification, mechanism of action, application, side effects.
110. Drugs used in malignant neoplasms: classification, mechanisms of action, application, side effects.

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Department of Pharmacology with Clinical Pharmacology

Benchmarks of test tasks

in the discipline " Pharmacology »

the main professional educational program of higher education – specialty programs in the specialty 31.05.01 Medical care partially implemented in English approved on 26.02.2021.

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Benchmarks of test tasks

1. Specify the alpha-adrenomimetics:

1) phenylephrine hydrochloride (mezaton); 2) isadrine; 3) epinephrine (epinephrine); 4) norepinephrine (norepinephrine); 5) clonidine; 6) terbutaline; 7) dobutamine.

2. Select the correct statement:

The mechanism of action of isadrin is associated with: 1) the excitation of α - and β -adrenoreceptors; 2) the blockade of α - and β -adrenoreceptors; 3) the excitation of β_1 and β_2 –adrenoreceptors; 4) the blockade of β_1 and β_2 –adrenoreceptors; 5) the predominant excitation of β_1 –adrenoreceptors; 6) the predominant excitation of β_2 –adrenoreceptors.

3. Specify the indications for the use of β_2 -adrenomimetics:

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

4. Mark the means used to prolong the action of local anesthetics:

1) norepinephrine; 2) epinephrine; 3) ephedrine hydrochloride; 4) phenoterol.

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

1) ipratropium bromide; 2) fenoterol; 3)

6. Specify the α - and β -adrenomimetics:

1) salbutamol; 2) ephedrine; 3) norepinephrine (norepinephrine); 4) naphthysine; 5) nasivine; 6) phenoterol; 7) epinephrine (epinephrine).

7. Choose the correct statement:

Salbutamol has an adrenomimetic effect due to: 1) stimulation of α_1 –adrenoreceptors, which causes activation of phospholipase C and inositol-1,4,5-triphosphate through the Gq-protein system, increasing the level of Ca ions in smooth muscle cells; 2) stimulation of α_2 –adrenoreceptors, which causes inactivation of adenylate cyclase and protein kinase through the Gi-protein system, increasing the level of Ca²⁺ ions in smooth muscle cells; 3) stimulation of β_2 –adrenoreceptors, which causes inactivation of adenylate cyclase and protein kinase through the Gi-protein system, increasing the level of Ca²⁺ ions in smooth muscle cells; Gs-proteins activate adenylate cyclase and protein kinase A, and reduce the level of Ca²⁺ + ions in smooth muscle cells.

8. Specify the indications for the use of ephedrine:

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

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Standards of exam tasks

in the discipline " Pharmacology »

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TASKS

Task #1

The drug has a myotropic effect. It has a calming effect on the central nervous system. It has hypotensive, choleric, laxative effects. It is almost not absorbed from the gastrointestinal tract. As a hypotensive agent, it is effective only with parenteral administration.

Determine the drug.

Task #2

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

Determine the drug.

Task #3

In case of overdose, the drug causes: increased skin and tendon reflexes, shortness of breath, tension of the muscles of the back of the head, trism of the jaws, tetanic convulsions (up to opisthotonus) with the slightest irritation - spasm of the respiratory muscles with the development of sharp rigidity of the chest (convulsions develop in the ascending direction).

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 and gastrointestinal tracts. Possible side effects: arthropathy, arthralgia, myalgia, tendinitis, tendovaginitis, tendon rupture, photosensitization.

Determine the group affiliation of drugs.

Task #5

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

Task #6

A derivative of xanthines. It refers to psychostimulants. The nature of the effect on depends on the dose. The main point of application of the action-the neurons of the brain, also provides