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ODESNI NATIONAL MEDICAL UNIVERSITY

Department of Pharmacology and pharmacognosy

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PHARMACOLOGY DISCIPLINE TRAINING MANUAL

for self-training students
3 course of pharmaceutical faculty
to a licensed test exam
"Step - 1. Pharmacology"

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Correct answer:A*

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UNIT 6-7: Pharmacology and its aims. General pharmacology. Pharmacokinetics

№	Test	Distractors (A-E)	Explanations
1.	Decreased absorption of tetracyclines, if they are taken simultaneously with antacids, is an example of their:	A.*Pharmacokinetic incompatibility B. Pharmaceutical incompatibility C. Pharmacodynamic incompatibility D.Synergism E. Functional antagonism	The combination of tetracycline and antacids leads to a violation of the absorption of tetracycline, which is called pharmacokinetic incompatibility
2.	Name the ability of a drug to accumulate within the patient's body:	A. * Cumulation B. Antagonism C. Synergism D. Habituation E. Allergy	The ability to accumulate in the body is called cumulation
3.	Which of these options is necessary condition for rapid penetration of the drug through the hematoencephalic barrier?	A. *High lipophilicity B. High hydrophilicity C. Sustained binds with proteins D. Ionized state E. The long half-life period	Only lipophilic drugs can penetrate the blood-brain barrier
4.	What is represented by such a pharmacokinetic value of a drug as its biological half-life (T1/2)?	A. *Time period in which plasma drug concentration decreases by 50% B. Blood plasma volume cleared of drug within a time unit C. Period of total body clearance D. Renal clearance rate E. Correlation between the drug clearance rate and plasma drug concentration	The half-life of a substance is a pharmacokinetic parameter that determines the time it takes for a substance to lose half its pharmacological, physiological or radioactive effect
5.	Paracetamol has antipyretic and analgesic effect. In the human body it is neutralized in the following organ:	A. * Liver B. Spleen C. Intestine D. Lungs E. Heart	Liver is the main organ that is involved in drug biotransformation
6.	What is the name of the ability of drugs to accumulate in the human body?	A. Cumulation B. Synergism C. Addiction D. Allergy E. Antagonism	Some medicines are slowly removed from the body and remain in the tissues.

UNIT 8-9: General pharmacology. Pharmacodynamics. Pharmacotoxicodynamics

№	Test	Distractors (A-E)	Explanations
1.	A woman, who during the 5th-10th weeks of her pregnancy had been taking sodium valproate for treatment of epilepsy, gave birth to a child with	A. *Teratogenic B. Mutagenic C. Embryotoxic D. Fetotoxic E. Sensitizing	Teratogenic effect is the effect of the drug on the development of the fetus, leading to malformations

	pathology of the vertebral column (split spine). What side effect of the drug caused such malformation?		
2.	A patient with chronic constipation had been prescribed bisacodyl. After 3 weeks of treatment the patient noticed a reduction of laxative effect. This is caused by the development of the following side-effect:	A. *Tolerance B. Dependence C. Sensibilization D. Cumulation E. Disbacteriosis	Tolerance is a decrease in the reaction of the organism to the re-introduction of the drug
3.	A child suffers from drug idiosyncrasy. What is the cause of such reaction?	A. *Hereditary enzymopathy B. Exhaustion of substrate interacting with pharmaceutical substance C. Accumulation of pharmaceutical substance D. Inhibition of microsomal liver enzymes E. Associated disease of target organ	Idiosyncrasy is a genetically determined reaction that occurs in response to the administration of a specific drug. Possible cause of development can be hereditary enzymopathy
4.	A patient taking clonidine for essential hypertension treatment was using alcohol that caused intense inhibition of central nervous system. What may it be connected with?	A. *Effect potentiating B. Effect summation C. Cumulation D. Intoxication E. Idiosyncrasy	Potentiation is a type of drug interaction in which one drug (in this case alcohol) enhances the action of another
5.	A patient with frequent attacks of stenocardia was prescribed sustak-forte to be taken one tablet twice a day. At first the effect was positive but on the second day stenocardia attacks resumed. What can explain inefficiency of the prescribed drug?	A. *Tachyphylaxis B. Cumulation C. Sensibilization D. Idiosyncrasy E. Dependence	Tachyphylaxis is a specific reaction of the body, consisting in a rapid decrease in the therapeutic effect with repeated use of the drug
6.	A female patient with bronchial asthma had taken prednisolone tablets (1 tablet 3 times a day) for 2 months. Due to a significant improvement of her condition the patient suddenly stopped taking it. What complication is likely to develop in this case?	A. *Withdrawal syndrome B. Cushing's syndrome C. Gastrorrhagia D. Upper body obesity E. Hypotension	Withdrawal syndrome - the reaction of the body that occurs in case of sharp cessation or reduction of taking the drug and is manifested by the deterioration of the patient's condition

7.	A patient, who has been taking phenazepam for a month, came to the pharmacy. He insists that he needs to buy two more packages of this drug, because without it he feels unwell. The side-effect of this drug that can be observed in this patient is based on the development of:	A. * Addiction B. Cumulation C. Idiosyncrasy D. After-effect E. Tolerance	Addiction is the pharmacological effect that develops with repeated injections of the drug. It is characterized by a change in the psycho-emotional state of the patient. As a result, the viability of the body in the previous mode becomes impossible.
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UNIT 10: Cholinergic agonists (cholinomimetic drugs)

№	Test	Distractors (A-E)	Explanations
1.	A patient complaining of dry mouth, photophobia, and visual impairment has been delivered into an admission room. The skin is hyperemic and dry; pupils are dilated; tachycardia is observed. The patient was diagnosed with belladonna alkaloids intoxication. What drug would be advisable	A. *Proserin B. Aceclidine C. Pilocarpine D. Armin E. Dipiroxim	The patient has belladonna poisoning (this is a group of anticholinergics). Prozerin is a cholinomimetic with competitive anticholinesterase mechanism of action. It is indicated for cholinoblockers poisoning.
2.	A patient has been administered a competitive inhibitor of cholinesterase. Name it:	A. *Proserin B. Aspirin C. Sodium diclophenac D. Allopurinol E. Atropine sulfate	
3.	Recommend the patient with glaucoma an M-cholinomimetic agent:	A.*Pilocarpine hydrochloride B. Ephedrine hydrochloride C.Sulfacyl-sodium (Sulfacetamide) D. Atropine sulfate E.Levomycetin (Chloramphenicol)	Pilocarpine is a drug of the cholinomimetic group which constricts the pupils and lowers the intraocular pressure. Used to treat glaucoma.
4.	Specify the drug that constricts pupils and reduces intraocular pressure:	A.*Pilocarpine hydrochloride B. Fenofibrate C. Nitrazepamum D. Atropine sulfate E. Dithylinum	
5.	Name the drug that causes miosis and lowers intraocular pressure.	A. *Pilocarpine hydrochloride B. Fenofibrate C. Nitrazepam D. Atropine sulphate	

		E. Suxamethonium chloride	
6.	A patient complains of general weakness, muscle weakness in the extremities (if the patient is asked to make a fist several times in a row, for example, the patient is capable of doing it only once), facial muscles are weak, swallowing is disturbed. Administration of acetylcholinesterase drugs removes these disturbances to a certain degree. Determine the pathology:	A. *Myasthenia B. Paralysis C. Paresis D. Hemiplegia E. Monoplegia	Myasthenia is a weakness of skeletal muscles, which is eliminated by anticholinesterase drugs.
7.	A sanitary-epidemic station employee has been poisoned when the premises were processed with an organophosphorous insecticide. What enzyme is inhibited by organophosphorous compounds?	A. *Acetylcholinesterase B. Lactate dehydrogenase C. Xanthine oxidase D. Catalase E. Pepsin	Organophosphorus compounds belong to the group of acetylcholinesterase inhibitors
8.	Proserin was prescribed to a patient suffering from myasthenia gravis. After its introduction, the patient developed nausea, diarrhea, twitching of the tongue and skeletal muscles. What drug will help eliminate this intoxication?	A *Atropine sulfate B Physostigmine C Pyridostigmine bromide D Isadrin E Mesaton	In case of an overdose of M,H-cholinomimetics, it is advisable to use cholinergic blockers, which block the stimulating effect of acetylcholine on receptors, that is, they act in the opposite way and eliminate intoxication.

UNIT 11: Cholinergic antagonists (cholinergic blockers)

№	Test	Distractors (A-E)	Explanations
1.	A child accidentally took a drink from the vial of grandmother's medicine for glaucoma. The medicine was identified as pilocarpine hydrochloride. What drug can be used as an antidote?	A. *Atropine B. Carbachol C. Aceclidine D. Benzo hexonium (Hexamethonium) E. Pentamin (Azamethonium bromide)	Atropine is a drug of the M-anticholinergic antagonists group, reduces the secretion of exocrine glands, has an antispasmodic effect, used in cholinomimetic poisoning (pilocarpine)
2.	In course of an experiment a dog has been injected a preparation that reduces secretory and motor activity of stomach. What	A. *Atropine B. Histamine C. Secretin D. Acetylcholine E. Gastrin	

	preparation is it?		
3.	Which of the listed biologically active compounds inhibits the secretion of pancreatic juice?	A. *Atropine B. Acetylcholine C. Insulin D. Gastrin E. Secretin	
4.	A patient with renal colic has been administered a spasmolytic from the group of M-cholinergic antagonists as a part of the complex therapy. Specify this drug:	A. *Atropine B. Proserin C. Galantamine D. Dithylinum E. Benzohexonium	
5.	The patient with hepatic colic has been prescribed spasmolytic of muscarinic receptor antagonists group as a part of his complex therapy. What drug is it?	A. *Atropine B. Proserin C. Galantamine D. Dithylin E. Benzohexonium	
6.	Name the most typical symptom of atropine poisoning:	A.*Dilated pupils unresponsive to light B.Constricted pupils unresponsive to light C. Excessive sweating D. Bradycardia E. Low intraocular pressure	Atropin poisoning manifested by dilation of the pupil, does not respond to light
7.	A man got an injection of curarelike substance causing the relaxation of all skeletal muscles. What is its mechanism of action?	A. *Block of cholinergic receptors of postsynaptic membrane B. Disturbance of acetylcholine synthesis C. Block of Ca ²⁺ -channels of presynaptic membrane D. Disturbance of cholinesterase synthesis Disturbance of acetylcholine secretion	By blocking the N-cholinergic receptors of postsynaptic membrane we obtain the relaxation of skeletal muscles (muscle relaxant effect)
8.	What substance blocks the conduction of excitation in the neuromuscular synapses?	A. *Curare B. Noradrenaline C. Adrenaline D. Somatostatin E. Aspartate	Curare-like substances block excitation at the neuromuscular synapses.
9.	A 40-year-old patient has a history of bronchial asthma and bradyarrhythmia. In order to eliminate bronchospasm, the drugs of the following pharmacological group should be administered:	A. *M -anticholinergics B. β -adrenergic blocking agents C. M -cholinergic agents D. Anticholinesterase agents E. Muscle relaxants	M-cholinoblockers used for the treatment of asthma due to bronchodilating action
10.	What drug is used for treatment of organophosphate poisoning?	A. * Atropine sulfate B. Isoniazid C. Metronidazole	Atropine sulfate is a cholinergic antagonist that is used for poisoning with organophosphate compounds

		D. Aciclovir E. Platyphylline	(cholinomimetics). Other medicines presented are not suitable.
11.	During a surgery, tubocurarin chloride was used as a muscle relaxant. What antagonist should the patient be given to restore spontaneous breathing?	A. *Proserin (Neostigmine) B. Benzo hexonium (Hexamethonium) C. Dithylin (Suxamethonium) D. Aethimizole (Methylamide) E. Cytitone (Cytisine)	Prozerin is a cholinomimetic with competitive anticholinesterase mechanism of action. It is indicated for cholinoblockers poisoning (tubocurarin chloride).
12.	Proserin was prescribed to a patient suffering from myasthenia gravis. After its introduction, the patient developed nausea, diarrhea, twitching of the tongue and skeletal muscles. What drug will help eliminate this intoxication?	A *Atropine sulfate B Physostigmine C Pyridostigmine bromide D Isadrin E Mesaton	In case of an overdose of M,H-cholinomimetics, it is advisable to use cholinergic blockers, which block the stimulating effect of acetylcholine on receptors, that is, they act in the opposite way and eliminate intoxication.
13.	A patient was brought to the receiving department with complaints of difficulty breathing, drooling, spastic abdominal pain, diarrhea, dizziness, decreased visual acuity. The diagnosis was established: poisoning by organophosphorus compounds. What drugs should be included in pathogenetic therapy?	A*Atropine sulfate and dipiroxime B Sodium thiosulfate and bemegrid C Thetacin-calcium and unitiol D Nalorphine hydrochloride and bemegrid E Glucose and bemegrid	Dipiroxime is an acetylcholinesterase reactivator and an antidote for organophosphorus poisoning.
14.	During the operation, tubocurarine chloride was used as a muscle relaxant. What antagonist agent should be administered to the patient to restore his independent breathing?	A. *Proserin B. Benzo hexonium C. Etimizol D. Cititon E. Ditylin	According to the classification, Proserin belongs to anticholinesterase agents of reversible action. The tool reversely (temporarily) blocks the enzyme cholinesterase and causes accumulation of acetylcholine in cholinergic synapses, therefore it is an antagonist of tubocurarine.

UNIT 12: Adrenergic agents. Adrenergic agonists (adrenomimetics)

№	Test	Distractors (A-E)	Explanations
1.	A man developed cardiac arrest due to thoracic trauma. Name the drug that should be introduced into the cavity of the left ventricle in this case:	A. *Adrenalin hydrochloride B. Salbutamol C. Lisinopril D. Proserin E. Metoprolol	Adrenaline is an alpha-beta adrenergic agonist that has vasoconstriction, increases blood pressure, and bronchodilation. Used for cardiac arrest, hypotension, anaphylactic shock
2.	Epinephrine is used to prolong the effect of novocaine during infiltration anesthesia. What epinephrine action is this effect caused by?	A. *Vasoconstriction B. Potentiation of novocaine action at CNS level C. Suppression of nerve endings and conductors functioning	

		D. Vasodilatation E. Suppression of tissue esterases	
3.	A medical student needs to choose an adrenergic drug for treatment of anaphylactic shock. What would you recommend?	A. *Adrenaline hydrochloride B. Galazolin (Xylometazoline) C. Clophelin (Clonidine) D. Izadrin (Isoprenaline) E. Fenoterol	
4.	The patient with bronchial asthma had been prescribed salbutamol, which led to disappearance of bronchospasm symptoms. It happened due to stimulation of:	A. * β_2 -adrenoreceptors B. α_1 -adrenoreceptors C. Muscarinic acetylcholine receptors D. Acetylcholine synthesis E. β_1 -adrenoreceptors	Salbutamol belongs to β_2 -adrenomimetics. Used to treat bronchial asthma
5.	Adrenomimetic agents are differentiated into selective and non-selective. What drug is an agonist of β_2 -adrenergic receptors and can be used for treatment of bronchial asthma?	A. *Salbutamol B. Metoprolol C. Atenolol D. Anaprilin (Propranolol) E. Nebivolol	
6.	A patient with bronchial asthma was prescribed a drug with the mechanism of action that is primarily based on the stimulation of β_2 adrenergic receptors. Name this drug:	*A. Salbutamol B. Adrenaline hydrochloride C. Droperidol D. Clonidine E. Isadrine (Isoprenaline)	
7.	Dobutamine has been administered to the 49-year-old-patient with acute cardiac failure and cardiac glycoside intolerance. What is this drug's mechanism of action?	A. * Stimulation of β_1 -adrenoreceptors B. Stimulation of α_1 -adrenoreceptors C. Blockade of K^{+} , Na^{+} -adenosinetriphosphatase D. Suppression of phosphodiesterase activity E. Stimulation of M - cholinergic receptors	Dobutamine refers to adrenergic agonists. Mechanism of action - stimulation of β_1 -adrenoreceptors
8.	An ophthalmologist used a 1% mesaton solution for the diagnostic purpose (pupil dilation for eye-ground examination). What is the cause of mydriasis induced by the drug?	A. * Activation of α_1 -adrenoreceptors B. Activation of α_2 -adrenoreceptors C. Block of α_1 -adrenoreceptors D. Activation of β_1 -adrenoreceptors E. Activation of M-cholinoreceptors	Mezaton refers to alpha adrenoagonistam, causes pupil dilation
9.	Patient with bronchial asthma was taking tablets which caused insomnia, headache, increased blood pressure. What medicine	A. *Ephedrine B. Adrenaline C. Chromolin sodium D. Euphyline E. Izadrine	Ephedrine is an alpha adrenomimetic, well penetrates the blood-brain barrier, has side effects on the central nervous system

	can cause such complications?		
10.	Help a medical student choose an adrenergic drug for the treatment of anaphylactic shock:	A* Adrenaline hydrochloride B Isadrin C Galazolin D Cllofelin E Fenoterol	Adrenaline is a non-selective alpha-beta adrenomimetic. Stimulation of alpha receptors leads to peripheral vasoconstriction and reduction of edema. Stimulation of beta adrenoceptors expands the bronchi and stimulates the contractile function of the myocardium

UNIT 13: Adrenergic antagonists (adrenolytics). Sympatholytics.

№	Test	Distractors (A-E)	Explanations
1.	It is required to diminish pump function of patient's heart. This can be done by means of blockers of the following membrane cytoceptors:	A. * β -adrenoreceptors B. Nicotinic cholinoreceptors C. Muscarinic cholinoreceptors D. α -adrenoreceptors E. Dopamine receptors	β_1 -adreno receptors are located in the heart. Myocardial contractility decreases during β_1 -receptor blockade
2.	In a 44-year-old patient suffering from angina, therapy using anaprilin had a positive effect on the dynamics of the disease. What is the main mechanism of action of this drug?	A * Blockade of beta-adrenoceptors and reduction of myocardial oxygen demand B Reduction of oxidative metabolism in the myocardium as a result of the enzyme block of the Krebs cycle C Decrease in energy expenditure of the myocardium due to a decrease in load D Increased delivery of oxygen to the myocardium E Decrease in the need for increased oxygen delivery to the myocardium.	Anaprilin belongs to non-selective $\beta_1\beta_2$ -adrenoblockers. When blocking β_1 -adrenoceptors, a decrease in the force of heart contractions is observed, the frequency of heart contractions decreases, which leads to a decrease in the work of the heart and a decrease in the myocardial oxygen demand.
3.	A patient with ischemic heart disease was prescribed a drug from the group of selective adrenoblockers that do not cause bronchospasm. Choose a drug.	A * Metoprolol B Indomethacin C Tryphtazine D Fenozeepam E Galantamine(Metoprolol is a selective β_1 -adrenoblocker, that is, it blocks only β_1 -receptors of the heart and has no effect on β_2 -receptors of bronchial smooth muscles.
4.	A man diagnosed with diabetes mellitus has been taking insulin Semilente for 9 years to correct hyperglycemia. 10 days ago, the patient started taking anap-rilin for the treatment of hypertension. One hour after administration of the antihypertensive drug, the patient developed a hypoglycemic coma. What is the mechanism of	A * Suppression of glycogenolysis B Decrease in half-life of glucagon C Increase in half-life of insulin Semilente D Increasing the bioavailability of insulin Semilente E Decrease in glucose absorption	Anaprilin belongs to the non-selective $\beta_1\beta_2$ -adrenoblockers, therefore, due to the blockade of β_2 receptors, it suppresses glycogenolysis, the secretion of glucagon and insulin, which causes a decrease in the level of glucose in the blood of patients. Patients with diabetes mellitus.

hypoglycemia when using anaprilin?		
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UNIT 15: Drugs irritating the receptors

Nº	Test	Distractors (A-E)	Explanations
5.	A patient with symptoms of chronic bronchitis has been administered acetylcysteine. What is the mechanism of its expectorant action?	A. * Depolymerization of sputum mucopolysaccharides B. Stimulation of adrenergic receptors C. Inhibition of cough center D. Stimulation of respiratory center E. Anesthesia of respiratory mucosa	Acetylcysteine refers to a group of expectorants with mucolytic activity. Can cause side effect bronchial spasms
6.	A patient with acute bronchitis was prescribed an expectorant that caused bronchial spasm after the patient had taken it. What drug of those listed below can cause such side effect?	A. *Acetylcysteine B. Salbutamol C. Validol (Menthyl isovalerate) D. Platyphyllin E. Prenoxdiazine (Libexin)	
7.	What mucolytic agent would you recommend for the patient with acute bronchitis to facilitate expectoration?	*A. Acetylcysteine B. Glaucine C. Codeine D. Libexin (Prenoxdiazine) E. Hydrocodone	
8.	A patient suffers from intense cough with production of viscous sputum. What drug can thin the sputum and facilitate expectoration?	A. Acetylcysteine B. Butamirate C. Prenoxdiazine D. Codeine phosphate E. Glaucine	
9.	A patient with chronic constipation has been prescribed bisacodyl. After 3 weeks of treatment, the patient noticed a reduction of laxative effect. This is caused by the development of the following side-effect:	A. *Habituation B. Dependence C. Sensibilization D. Cumulation E. Dysbacteriosis	The patient developed a side effect of bisacoyl - habituation (addiction).
10.	The elderly patient suffers from constipation caused by large intestine hypotonia. What drug should be prescribed?	A. *Bisacodyl B. Sodium sulfate C. Castor oil D. Atropine sulphate E. Procainamide	Bisacodyl is a laxative that enhances the motility of the small intestine.

UNIT 16: Drugs protecting the receptors

Nº	Test	Distractors (A-E)	Explanations
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1.	What local anesthetic is given to patients with cardiac rhythm disturbance?	A. *Lidocaine B. Paracetamol C. Morphine hydrochloride D. Caffeine and sodium benzoate E. Nitrazepam	Lidocaine belongs to a group of local anesthetics. In intravenous administered, it has antiarrhythmic action. The symptoms of poisoning: central nervous system excitation with following paralysis, and acute cardiovascular insufficiency (collapse).
2.	To perform conduction anesthesia a patient had been administered a drug used in dental surgery. It was followed by the symptoms of poisoning: central nervous system excitation with following paralysis, and acute cardiovascular insufficiency (collapse). Additionally there were allergic reactions (itching, swelling, erythema). Name this drug.	A. *Lidocaine B. Suxamethonium chloride C. Thiopental sodium D. Tubocurarin chloride E. Pipecuronium bromide	

UNIT 18: Hypnotic and anticonvulsive drugs

№	Test	Distractors (A-E)	Explanations
1.	A man is diagnosed with Parkinson's disease. What drug should be prescribed in this case?	A. *Levodopa B. Nitrazepam C. Paracetamol D. Aminazine E. Anaprilin (Propranolol)	Levodopa is an anti-parkinsonian drug.
2.	The patient with parkinsonism has been prescribed a drug - dopamine precursor - to relieve muscular rigidity. Name this drug.	A. *Levodopa B. Aminazine C. Paracetamol D. Scopolamine hydrobromide E. Atropine sulphate	
3.	Due to prolonged taking of phenobarbital the epileptic patient has developed tolerance for this drug. What is this phenomenon based on?	A. *Biotransformation acceleration B. Absorption process weakening C. Increase of receptor sensitivity D. Biotransformation suppression E. Substance accumulation in body	Phenobarbital is a hypnotic, barbituric acid derivative. One of the side effects of which is the induction of microsomal oxidation of the liver.
4.	Certain drugs can stimulate liver to synthesize enzyme systems taking part in drugs and toxins metabolism. What compound stimulates drug metabolism in liver	A. *Phenobarbital B. Heparin C. Menadione sodium bisulfite D. Sulfanilamide E. Aspirin	

	microsomes?		
5.	A patient suffering from epilepsy and a depressive reaction is prescribed a drug that reduces the manifestation of epilepsy and improves the mental state of the patient. Name this drug.	A *Sodium valproate B Ethosuximide C Amitriptyline D Phenytoin E Phenobarbital	Sodium valproate belongs to antiepileptic drugs, in addition, it has tranquilizing properties, reduces the feeling of fear, improves the mental state and mood of patients.
6.	Some derivatives of barbituric acid are capable of depressing the respiratory chain. Name the drug that inhibits cellular respiration:	A * Aminobarbital B Penicillin C Streptocide D Vikasol E Levomycetin	A derivative of barbituric acid, aminobarbital, suppresses the respiratory chain and inhibits cellular respiration

UNIT 19: Non-narcotic analgesics – antipyretics. Non-steroidal antiinflammatory drugs (NSAIDS)

№	Test	Distractors (A-E)	Explanations
1.	What pharmacological effect of acetylsalicylic acid allows its application in patients with ischemic heart disease for prevention of thromboses?	A. *Antiaggregant B. Analgesic C. Antipyretic D. Ulcerogenic E. Anti-inflammatory	Acetylsalicylic acid is a NSAIDs. Due to mechanism of action - Cyclooxygenase1 inhibition, it cause antiplatelet effect .
2.	A female patient asked a pharmacist to recommend her a drug for headache with antiplatelet effect. Specify this drug:	A. *Acetylsalicylic acid B. Codeine phosphate C. Promedol D. Tramadol E. Fentanyl	
3.	A patient with stenocardia has been administered acetylsalicylic acid for:	A. *Antiplatelet effect B. Inhibition of blood fibrinolytic activity C. Aggregate effect D. Anti-inflammatory effect E. Increase in blood fibrinolytic activity	
4.	Anti-inflammatory effect of a number of drugs is caused by the inhibition of arachidonic acid release. This acid is the precursor of:	A. * Prostaglandins B. Uric acid C. Urea D. Haem E. Cholesterol	NSAIDs due to inhibition of cyclooxygenase 2 there is a decrease in the production of prostaglandin inflammatory mediators
5.	Nonsteroid anti-inflammatory drugs are used in medical practice for treating the rheumatoid arthritis, osteoporosis, inflammatory diseases of the connective tissue. These preparations inhibit the activity of the following enzyme:	A. *Cyclooxygenase B. Hexokinase C. Succinate dehydrogenase D. Aminotransferase E. Xanthine oxidase	
6.	A female student with a	A. *Paracetamol	

	cold has been prescribed an antipyretic medication. Specify this drug:	B. Ascorbic acid C. Oxytocin D. Famotidine E. Cyanocobalamin	inflammatory, analgesic and antipyretic activity.
7.	A patient with headache consulted a pharmacist. The patient was prescribed a cyclooxygenase inhibitor - an aminophenol derivative. What drug was prescribed?	A. *Paracetamol B. Acetylsalicylic acid C. Diclofenac D. Ketorolac E. Ibuprofen	
8.	Paracetamol belongs to the following pharmacological group:	A. *Nonnarcotic analgetics B. Soporifics C. Diuretics D. Hypotensive drugs E. Antianginal drugs	
9.	On the 4th day of treatment with indomethacin a male 55-year-old patient developed gastric bleeding due to the ulceration of the gastric mucosa. Ulcerogenic effect of the drug is associated with a decrease in the activity of the following enzyme:	A. *Cyclooxygenase-1 B. Cyclooxygenase-2 C. Lipooxygenase D. Thromboxane synthetase E. Prostacyclin synthase	Indomethacin is a NSAID, a non-selective inhibitor of cyclooxygenase 1 and 2. Inhibition of cyclooxygenase 1 leads to ulcero-genic action
10.	The patient with rheumatoid arthritis and concomitant duodenal ulcer has to be prescribed nonsteroid antiinflammatory drug. Which one of the drugs listed below is a drug of choice in the given case?	1. *Celecoxib 2. Acetylsalicylic acid 3. Paracetamol 4. Metamizole 5. Diclofenac sodium	
11.	The patient, who suffers from rheumatoid arthritis and concomitant duodenal ulcer should be prescribed a non-steroidal anti-inflammatory drug. What drug is most suitable in this case?	A. *Celecoxib B. Diclofenac sodium C. Acetylsalicylic acid D. Metamizole E. Paracetamol	Celecoxib is an NSAID, a selective cyclooxygenase 2 inhibitor. It does not have an ulcerogenic effect.
12.	A patient has been taking diclofenac sodium for a long time. A family physician withdrew this drug and prescribed celecoxib. What disease was the cause of drug substitution?	A. *Peptic ulcer B. Bronchial asthma C. Urolithiasis D. Arterial hypertension E. Chronic hepatitis	Diclofenac sodium NSAID is not selectively inhibit cyclooxygenase 1 and 2. Side effect - ulcerogenic effect

13.	A doctor has prescribed a nonsteroidal antiinflammatory drug to relieve inflammation and pain syndrome. Name this drug:	A. *Diclofenac sodium B. Glibenclamide C. Loratadine D. Prednisolone E. Calcium chloride	
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UNIT 20: Psychotropic drugs. psychodisruptive drugs. Narcotic analgesics

No	Test	Distractors (A-E)	Explanations
1.	A 25-year-old woman with signs of acute morphine intoxication was administered naloxone, which rapidly improved her condition. What is the mechanism of action of this drug?	A. * Opioid receptor blockade B. GABA receptor blockade C. Serotonin receptor blockade D. Dopamine receptor blockade E. Benzodiazepine receptor blockade	Naloxone is an opioid receptor antagonist, used for intoxication with opioid analgesics due to competitive antagonism with opiate receptors
2.	What naloxone indications are there?	A. *Narcotic analgesics acute poisoning B. Heavy metals poisoning C. Cardiac glycosides poisoning D. Ergot alkaloids poisoning E. Atropine sulphate poisoning	
3.	Explain to an intern, what is the mechanism of analgesic action of morphine hydrochloride:	A. *Opiate receptors stimulation B. Histamine receptors blockade C. Phosphodiesterase blockade D. Adenylate cyclase stimulation E. Choline esterase blockade	Morphine is a narcotic analgesic, the mechanism of action of activation of opiate receptors
4.	A patient with a diagnosis of drug poisoning has been admitted to the resuscitation department. The patient is in grave condition. Respiration is rapid, superficial, with periods of apnea (Biot's respiration). What was the main cause of the development of periodic breathing in the patient?	A. *Inhibition of the respiratory center function B. Impaired function of spinal cord motoneurons C. Impaired function of the neuromuscular system D. Diminished chest mobility E. Pulmonary dysfunction	One of the undesirable effects of narcotic analgesics is the inhibition of the respiratory center.
5.	Which one of the drugs listed below is potentially addictive?	A. *Trimeperidine B. Acetylsalicylic acid C. Naloxone D. Diclofenac sodium E. Paracetamol	Promedol (trimeperidin) is a narcotic analgesic, the undesirable effect of which is addiction, but to a lesser extent has a suppressive effect on the respiratory center (used for obstetric aid). It also has an antispasmodic effect.
6.	A narcotic analgesic with accompanying antispasmodic effect was appointed.	A. *Promedol B. Doxylamine C. Phenobarbital	

	ed for the patient to relieve of renal colic attack. Specify the drug.	D. Ketorolac E. Buprenorphine	
7.	A woman is to be prescribed a narcotic analgesic for labor pain relief. What drug is indicated in this case?	A. *Promedol (Trimeperidine) B. Morphine C. Papaveretum (Omnopon) D. Codeine E. Fentanyl	
8.	An interhospital pharmacy received a short-acting narcotic analgesic that is times more active than morphine. Name this drug:	A. *Fentanyl B. Naltrexone C. Naloxone D. Analgin (Metamizole) E. Ketanov (Ketorolac)	Fentanyl is a narcotic analgesic with the most pronounced analgesic activity.
9.	Specify the analgesic that affects opiate receptors and can cause development of tolerance and dependence:	*A.Morphine B.Phenobarbital C.Medazepam D.Voltaren (Diclofenac sodium) E.Haloperidol	Morphine is classified as a narcotic analgesic. The rest of the proposed drugs are not narcotic analgesics.
10.	Вкажіть анальгетичний засіб, який взаємодіє з опіатними рецепторами, викликає толерантність та залежність:	A *Морфін B Фенобарбітал C Медазепам D Вольтарен E Галоперидол	Механізм дії наркотичних анальгетиків полягає у взаємодії з опіатними рецепторами.
11.	Пацієнту з переломом стегна призначений наркотичний анальгетик. Анальгетична активність цієї речовини обумовлена взаємодією з наступними рецепторами:	A *Опіатними рецепторами B Адренорецепторами C Холинорецепторами D Бензодіазепіновими рецепторами E ГАМК-ергічними рецепторами	Механізм знеболюючої дії наркотичних анальгетиків зумовлений взаємодією з опіатними рецепторами, які відповідають за біль.

UNIT 21: Neuroleptic drugs. tranquilizers. Psychosedatives

№	Test	Distractors (A-E)	Explanations
1.	A woman suffering from neurosis has disturbed sleep. What drug is optimal for insomnia treatment?	A. *Nitrazepam B. Phenobarbital C. Aethaminalum-natrium (Pentobarbital) D. Bromisoval E. Valerian tincture	Nitrazepam is a hypnotic, benzodiazepine derivative, tranquilizer.
2.	A woman complaining of sleep disturbance, fearfulness, and anxiety came to a neurologist. What drug should be prescribed in this case?	A. *Diazepam B. Levodopa C. Nitroglycerine D. Oxytocin E. Lisinopril	Diazepam is a hypnotic benzodiazepine derivative, tranquilizer (anxiolytic). It has anticonvulsant activity.
3.	What pharmacological effect of diazepam allows its application for	A. *Anticonvulsant B. Analgesic C. Antipyretic	

	termination of convulsions?	D. Anti-inflammatory E. Hypnotic	
4.	The patient with neurosis has been prescribed anxiolytic derivative of benzodiazepine. Name this drug	A. *Diazepam B. Atropine sulphate C. Piroxicam D. Nandrolone E. Trihexyphenidyl	
5.	A doctor prescribed diazepam to a patient with anxiety disorders. What pharmacological effect is the reason for such a prescription?	A. *Anxiolytic B. Anticonvulsant C. Anti-inflammatory D. Antianginal E. Hypotensive	
6.	An anxiolytic agent, a benzodiazepine derivative, was prescribed to a patient with a neurosis in order to reduce its signs. What medicine belongs to this group of drugs?	A.*Diazepam B.Nandrolone C.Piroxicam D.Trihexyphenidyl E.Atropine sulphate	
7.	Neuroleptanalgesia has been applied in the case of cardiac infarction. What neuroleptic is most often applied along with fentanyl?	A. *Droperidol B. Perphenazine (Aethaperazinum) C. Levomepromazine D. Clozapine E. Sulpiride	Neuroleptoelngegy is a combination of a narcotic analgesic (fentanyl) with the neuroleptic (droperidol)
8.	To quickly relieve the state of acute psychosis, the patient was prescribed a rapid/short-acting psychotropic drug. Name this drug:	A. *Droperidol B. Piracetam C. Caffeine and sodium benzoate D. Valerian extract E. Amitriptyline	
9.	What group of drugs is characterized by development of drug addiction as a side effect?	A. *Psychosedatives B. Cholinergic antagonists C. Adrenergic drugs D. Diuretics E. Emetics	All psychotropic drugs cause yawning and addiction with long-term use.
10.	The patient took the drug prescribed by the neurologist for 2 weeks. He noted an improvement in his condition, but developed apathy, conjunctivitis, rashes, delirium, and memory impairment. Diagnosed with bromism. What drug should be prescribed to reduce symptoms?	A *Sodium chloride B Glucose solution 5% C Asparkam D Polyglukin E -	Sodium chloride accelerates the excretion of bromine in the urine.

UNIT 22: Antidepressants. normothymics. Psychostimulants

№	Test	Distractors (A-E)	Explanations
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1.	Caffeine inhibits phosphodiesterase which converts cAMP to AMP. The most typical feature of caffeine intoxication is the reduced intensity of:	A. *Glycogen synthesis B. Protein phosphorylation C. Pentose phosphate pathway D. Glycolysis E. Lipolysis	Caffeine is a phosphodiesterase inhibitor. One of the side effects is a decrease in glycogen synthesis
2.	Depressive states can be treated by means of drugs inhibiting the enzyme that inactivates biogenic amines. Specify this enzyme:	A. *MAO (monoamine oxidase) B. LDH (lactate dehydrogenase) C. CPK (creatine phosphokinase) D. AST (aspartate aminotransferase) E. ALT (alanine aminotransferase)	Antidepressants are medicinal substances, one of the mechanisms of action of which is inhibition of monoamine oxidase (MAO).
3.	Antidepressants can increase the concentration of catecholamines in the synaptic cleft. What is the mechanism of action of these drugs?	A. *Inhibition of monoamine oxidase B. Activation of monoamine oxidase C. Inhibition of xanthine oxidase D. Activation of acetylcholinesterase E. Inhibition of acetylcholinesterase	
4.	Name the drug that has an analeptic and psychostimulant effect:	A. *Caffeine-sodium benzoate B. Proserin C. Diazepam D. Korglikon E. Diclofenac sodium	
5.	One of the alkaloids of tea and coffee is caffeine. What is a contraindication for the use of caffeine?	A. *Hypertensive disease B. Hypotension C. Migraine D. Fatigue E. Suppression of nervous activity	Caffeine stimulates the vascular center and increases blood pressure.

UNIT 23: Nootropic drugs. Adaptagens. Analeptics. Drugs of abuse

№	Test	Distractors (A-E)	Explanations
1.	A patient after craniocerebral trauma has been prescribed piracetam. What pharmacological group does this drug belong to?	A. *Nootropic agents B. Non-narcotic analgesics C. Tranquilizers D. General anesthetics E. Antipsychotics	Piracetam is a group of nootropic drugs that improves the higher cognitive functions of the brain.
2.	After ischemic stroke the patient was prescribed a drug to improve his intellectual functioning and memory. What drug would he obtain in the pharmacy?	A. *Piracetam B. Metoclopramide C. Tabex (Cytisine) D. Diphenin (Phenytoin) E. -	
3.	Name the	A. *Caffeine and sodium	Caffeine refers to psychostimulants

psychostimulant with analeptical action, which is a purine derivative:	benzoate B. Tramadol C. Medazepam D. Sodium bromide E. Sulpiride	with analeptic activity
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UNIT 24: Cardiotonic drugs. Cardiac glycosides. Non – glycoside cardiotonics. Cardiostimulants

No	Test	Distractors (A-E)	Explanations
1.	A patient with acute heart failure was administered corglycon. What effect of this drug results in improvement of the patient's condition?	A. *Increased heart force B. Decreased heart force C. Coronary vessels dilatation D. Increased heart rate E. Decreased oxygen demand of myocardium	Corglikon is a cardiac glycoside with a quick short action. It has a positive inotropic effect (increases the force of myocardial contraction). Used to treat acute heart failure.
2.	Choose the most efficient way of convallariae glycoside administration for acute cardiac failure treatment.	A. *Intravenous B. Intramuscular C. Subcutaneous D. Internal E. Inhalational	
3.	What drug should be administered in case of acute cardiac insufficiency?	A. *Corglycon B. Salbutamol C. Pilocarpine hydrochloride D. Naloxone E. Heparin	
4.	During treatment of chronic cardiac failure with digitoxin a patient developed the drug-specific signs of intoxication. A doctor prescribed Unithiol (Dimercaptopropansulfonate sodium). Explain its mechanism of action of Unithiol in case of cardiac glycoside intoxication:	A. *Restoration of $^{+}N a^{+}$ -adenosine triphosphatase activity B. Binding of calcium ions C. Increase of sodium concentration in cardiac hystiocytes D. Increase of calcium permeability of cardiac hystiocytes E. Binding of glycosides into complex compound	Unithiol is a donor of sulfhydryl groups, recovery of activity $^{+}N a^{+}$ -adenosine triphosphatase
5.	A patient with acute heart failure and cardiac glycosides intolerance was given an injection of dobutamine. What is the mechanism of its action?	A*. Stimulation of $\beta 1$ -adrenoceptors B. Stimulation of $\alpha 1$ -adrenoceptors C. Blockade of K^{+} , $N a^{+}$ -ATPase D. Inhibition of phosphodiesterase activity E. Stimulation of M -cholinergic receptors	Dobutamine is a beta1 adrenergic mimetic
6.	A patient with chronic heart failure has been taking digitalis for a long time. In connection with the violation of the medication	A *Material accumulation B Tachyphylaxis C Idiosyncrasy D Antagonism E Sensitization	In the blood plasma, digitalis preparations form complexes with albumins, so they slowly penetrate the tissues, are slowly metabolized, so they

	regimen, the woman developed symptoms of intoxication. What is associated with the appearance of these symptoms?		accumulate (cumulate) in the body.
7.	The patient complains of weakness, shortness of breath, swelling of the lower extremities. Diagnosis: chronic heart failure. What drugs should be prescribed first?	A * Digitoxin B Caffeine C Papaverine D Propranolol E Raunatin	Digitoxin increases the strength and speed of myocardial contraction, leads to an increase in stroke and minute blood volume, a decrease in myocardial oxygen demand, decreases the frequency of heart contractions, therefore it is used in heart failure.

UNIT 25: Antiarrhythmic drugs

№	Test	Distractors (A-E)	Explanations
1.	A patient with a heart rhythm disorder has been given lidocaine. Apart from the local anesthetic effect, this drug has the following pharmacological effect:	A. *Antiarrhythmic B. Hypnotic C. Antipyretic D. Antidepressant E. Nootropic	Lidocaine is an antiarrhythmic agent with local anesthetic activity.
2.	A patient suffering from ciliary arrhythmia with anamnesis of bronchial asthma should be prescribed an anti-arrhythmic drug. What antiarrhythmic drug is CONTRAINDICATED in this case?	A. *Anaprilin (Propranolol) B. Ajmaline C. Verapamil D. Nifedipine E. Novocainamide (Procainamide)	Anaprilin is contraindicated in bronchial asthma because it is a non-selective beta receptor blocker and can cause bronchospasm.

UNIT 26-27: Antianginal preparations. Complex therapy of myocardial infarction

№	Test	Distractors (A-E)	Explanations
1.	The 55-year-old patient had been diagnosed with angina pectoris. Calcium channel-blocking agent was prescribed for treatment. Name this agent.	A. *Amlodipine B. Atenolol C. Guanethidine D. Reserpine E. Labetalol	Amlodipine is an antianginal, calcium channel blocker.
2.	Which of the drugs listed below quickly arrests angina pectoris attack when taken sublingually?	A. *Nitroglycerine B. Digoxin C. Amiodarone D. Lisinopril E. Convallariae glycoside	Nitroglycerin - antianginal drug, nitrovasodilator. The main route of administration is sublingually (under the tongue)
3.	What drug can quickly stop an angina pectoris	A. *Nitroglycerine B. Corglycon	

	attack, when taken sublingually?	C. Amiodarone D. Digoxin E. Lisinopril	
4.	What drug group has the most pronounced vasodilatory action, and has little effect on cardiac conduction system and myocardial activity?	A. *Dihydropyridine derivatives B. Phenylalkylamine derivatives C. Benzodiazepine derivatives D. Sulfonylurea preparations E. β -adrenoceptor agonist	Derivatives of dihydropyridine (amlodipine) have the most pronounced vasodilating effect and have little effect on the cardiac conduction system and myocardial activity
5.	A patient with coronary artery disease was admitted to the cardiological department. For stenocardia prevention a drug from the group of beta-adrenoceptor blockers was administered. What drug is it?	A. *Metoprolol B. Atropine sulfate C. Morphine hydrochloride D. Oxytocin E. Furosemide	Metoprolol is a selective beta 1 adrenergic blocker, has antianginal activity
6.	A patient with coronary heart disease took the drug several times a day to prevent angina attacks. An overdose of this drug caused intoxication. Objectively: bluish skin and mucous membranes, sharp drop in blood pressure, tachycardia, respiratory depression. The concentration of methemoglobin in the blood increased. To which group does this preparation belong:	A *Organic nitrates B Alpha-blockers C Blockers of calcium channels D Adenosine preparations E Myotropic antispasmodics	Nitroglycerin and its prolonged forms are organic nitrates that dilate blood vessels and reduce the heart's need for oxygen. In case of an overdose, blueness of the skin and mucous membranes, a sharp drop in blood pressure, tachycardia, respiratory depression occurs.
7.	A patient with angina takes isosorbide mononitrate. In addition, he was prescribed a drug with an antiplatelet effect. What kind of drug is this?	A * Acetylsalicylic acid B Nitroglycerin C Propranolol D Nifedipine E Validol	Acetylsalicylic acid exhibits an anti-aggregant effect as a result of inhibiting the synthesis of prostaglandins, which are regulators of platelet aggregation and microcirculation.

UNIT 28: Diuretic drugs. Complex therapy of congestive heart failure. Uricosuric drugs

№	Test	Distractors (A-E)	Explanations
1.	Gout develops when purine nucleotide metabolism is dis-	A. *Xanthine oxidase B. Succinate	Allopurinol is an anti-gout agent, a competitive inhibitor of xanthine

	turbed. A doctor prescribed the patient allopurinol that is a competitive inhibitor of:	dehydrogenase C. Alcohol dehydrogenase D. Lactate dehydrogenase E. Hexokinase	oxidase (a terminal enzyme of catabolism of zurine nucleotides)
2.	Analysis of a patient's urine revealed increased concentration of the uric acid. The patient was prescribed allopurinol. What is the biochemical mechanism of its action?	A. *Xanthine oxidase inhibition B. Cyclooxygenase activation C. Desaminase inhibition D. Phosphorylase inhibition E. Nucleosidase inhibition	
3.	A patient with gout was prescribed allopurinol - a competitive inhibitor of xanthine oxidase. Xanthine oxidase is a terminal enzyme of catabolism of:	A. * Purine nucleotides B. Glycoproteins C. Phospholipids D. Higher fatty acids E. Heteropolysaccharides	
4.	A patient with hypertensive crisis should be administered a diuretic as a part of complex therapy. What drug should be given the patient?	A. *Furosemide B. Diacarb C. Spironolactone D. Triamterene E. Amiloride	
5.	The patient with acute poisoning needs forced diuresis. What drug can be used for this purpose?	A. * Furosemide B. Caffeine and sodium benzoate C. Galantamine hydrobromide D. Enalapril E. Piracetam	
6.	Diuretic should be prescribed to treat cerebral edema. What drug is to be administered?	A. *Furosemide B. Hydrochlorothiazide C. Caffeine and sodium benzoate D. Diacarb (Acetazolamide) E. Spironolactone	Furosemide is a loopback diuretic, with a strong effect. Used in the treatment of hypertension, forced diuresis, edemas.
7.	Choose the potent fast-acting diuretic to induce forced diuresis:	A. * Furosemide B. Hydrochlorothiazide C. Spironolactone D. Triamterene E. Acetazolamide	
8.	Forced diuresis needs to be induced in a patient with acute medication poisoning. What drug must be used for this purpose?	A. * Furosemide B. Diphenhydramine C. Bisacodil D. Strophantin E. Progesterone	
9.	A patient with epilepsy is prescribed a diuretic. Name this drug:	A. *Diacarb (Acetazolamide) B. Verospiron	Diacarb is a diuretic, an inhibitor of carbanhydrase. Used to treat epilepsy, glaucoma

		C. Furosemide D. Hypothiazid (Hydrochlorothiazide) E. Mannitol	
10.	During furosemide therapy of a patient with chronic edematous syndrome, his plasma concentration was disturbed. What drug should be used in this case?	A. *Potassium chloride B. Thiamine bromide C. Ascorutin (Ascorbic acid + Rutoside) D. MagneB6 E. Aspirin	Furosemide is a strong potassiumuretic (excreting potassium in the urine). Therefore, to replenish potassium, it is necessary to introduce potassium chloride to the patient.
11.	In a patient with severe peripheral edema. The use of chlorothiazide, ethacrynic acid and lasix did not give results. An increase in the concentration of aldosterone was found in the blood. Specify the drug to which it should be prescribed.	A * Spironolactone B Manit C Clopamid D Urea E Amiloride	The diuretic effect of spironolactone is associated with its antagonism in relation to the hormone of the adrenal cortex - aldosterone. It is used in the presence of hyperaldosteronism, the deficiency syndrome caused by chronic heart failure, cirrhosis of the liver.
12.	Hypotensive agents belonging to the group of angiotensin-converting enzyme inhibitors CANNOT be prescribed simultaneously with which group of diuretics?	A * Kaliy saving B Thiazides C Petlovi D Xanthines E Osmotic	Potassium-sparing diuretics are aldosterone antagonists. Angiotensin-converting enzyme inhibitors also inhibit the renin-angiotensin system.

UNIT 29-30: drug affecting on blood pressure. Antihypertensive, hypertensive drugs

№	Test	Distractors (A-E)	Explanations
1.	A woman with hypertension came to a doctor complaining of dry cough that developed against the background of her therapy. What antihypertensive drug was she taking?	A. *Lisinopril B. Atenolol C. Nifedipine D. Furosemide E. Dichlothiazide (Hydrochlorothiazide)	Lisinopril, captopril - an antihypertensive agent, an angiotensin converting enzyme (ACE) inhibitor. One of the side effects is a dry cough.
2.	What side effect is characteristic of captopril?	A. *Dry cough B. Increase of arterial pressure C. Hyperglycemia D. Cardiac rate disorder E. Hypokaliemia	
3.	A patient with hypertension was prescribed a nonselective beta-adrenergic blocking agent. Name this drug:	A. *Anaprilin (Propranolol) B. Prazosin C. Proserin D. Adrenalin hydrochloride E. Labetalol	Anaprilin - nonselective beta 1,2 adrenoblocker
4.	A patient with hypertension has been prescribed a drug that blocks angiotensin receptors. Specify this drug:	A. *Losartan B. Nifedipine C. Prazosin D. Captopril E. Apressin	Losartan - an antihypertensive agent, an angiotensin receptor blocker
5.	A patient was prescribed	A. *Angiotensin-receptor block-	Losartan is classified as

	losartan for treatment of arterial hypertension. What mechanism of action does this drug have?	ade B. Inhibition of angiotensin-converting enzyme C. Inhibition of phosphodiesterase D. Activation of central α -adrenoceptors E. Calcium channel blockade	antihypertensive, angiotensin receptor blockers
6.	A patient with hypertensive crisis has been given an intravenous injection of clonidine. What mechanism underlies the antihypertensive effect of clonidine?	A. *Stimulation of presynaptic central α_2 -adrenoceptors B. Blockade of peripheral α_1 -adrenoceptors C. Blockade of β -adrenoceptors D. Blockade of N -cholinergic receptors E. Direct myotropic effect on blood vessels	Clonidine is an antihypertensive agent, centrally acting, stimulates alpha 2 adrenoreceptors

UNIT 33: Hormonal preparations of polypeptide and aminoacid structure. Antihormonal drugs

Nº	Test	Distractors (A-E)	Explanations
1.	After an insulin injection a 45-year-old woman with a long history of diabetes mellitus has developed weakness, paleness, palpitation, anxiety, double vision, numbness of lips and the tip of tongue. Blood glucose is at the rate of 2,5 mmol/l. What complication has developed in the patient?	A. * Hypoglycemic coma B. Hyperosmolar coma C. Hyperglycemic coma D. Hyperketonemic coma E. Uremic coma	One of the major complications of insulin therapy is hypoglycemia (decrease in blood glucose levels) Oxytocin - a hormone of the posterior lobe of the pituitary gland that increases the contractility of the uterus, is used to stimulate labor and stop postpartum atonic bleeding
2.	A parturient woman diagnosed with uterine inertia has been delivered to the maternity ward. The doctor gave her an injection of the drug that activates the contraction of smooth muscles of the uterus. What hormone is a component of this drug?	A. *Oxytocin B. Gastrin C. Secretin D. Angiotensin E. Bradykinin	
3.	What drug is administered in case of uterine inertia?	A. *Oxytocin B.No-spa C. Progesterone D. Vikasolum E. Fenoterol	
4.	Neurohypophysis hormone is used to stimulate labor. Specify this hormone:	A. *Oxytocin B.Gastrin C.Secretin D. Angiotensin E.Bradykinin	
5.	Specify the hormonal preparation for stimulation of childbirth:	A. * Oxytocin B. Insulin C. Glucagon D. Thyroxine	

		E. Testosterone	
6.	Examination of a 70 year old patient revealed insulin-independent diabetes. What drug should be administered?	A. *Glibenclamid B. Insulin C. Mercazolilum D. Parathyroidin E. Cortisone	Glibenclamide is a synthetic glucose-lowering drug.
7.	A doctor needs to prescribe the patient a drug for replacement therapy after thyreoidectomy. What drug would you recommend?	A. *L-thyroxine B. Insulin C. Prednisolone D. Parathyroidin E. Thiamazole	L-thyroxine is a thyroid hormone. It is used as a replacement therapy for hypothyroidism (insufficiency of thyroid gland function)
8.	A patient with hyperproduction of thyroid hormones has been prescribed Merkazolilum. This drug inhibits the following enzyme participating in iodothyronine synthesis:	A.*Iodide peroxidase B.Reductase C.Decarboxylase D.Aminotransferase E.Aromatase	Merkazolil is an antithyroid drug. The mechanism of action is the inhibition of peroxidase activity - an enzyme involved in the iodination of thyroid hormones of the thyroid gland, which leads to a violation of their synthesis.
9.	A diabetic patient developed a hyperglycemic coma. Specify the drug for emergency care.	A * Insulin B Prednisolone C Retinol acetate D L-thyroxine E Ergocalciferol	Insulin reduces the concentration of glucose in the blood, increases the permeability of plasma membranes for glucose, activates the enzymes of glycolysis, stimulates the conversion of glucose into glycogen, and enhances the synthesis of fats and proteins.

UNIT 34-35: Steroid hormonal preparations, their analogues and antagonists

№	Test	Distractors (A-E)	Explanations
1.	A patient who had been continuously treated with glucocorticoids was found to have a duodenal ulcer. What mechanism plays a major part in its development?	A. *Increase of gastric juice secretion and acidity B. Acceleration of histamine inactivation in the stomach C. Inhibition of gastrin secretion in the stomach D. Excess production of prostaglandin E E. Hyperglycemia	Glucocorticoids (prednisolone) are adrenocortical hormones. Potentiate gluconeogenesis. Side effects - peptic ulcer of the stomach due to overproduction of hydrochloric acid, increased blood pressure
2.	Addison's (bronze) disease is treated with glucocorticoids. Their effect is provided by the potentiation of the following process:	A. *Gluconeogenesis B. Glycolysis C. Pentose phosphate cycle D. Glycogenolysis E. Ornithine cycle	
3.	The 33-year-old female patient, who undergoes long-term treatment due to her chronic polyarthritis, complains of increased arterial pressure, adipose tissue redistribution and menstrual irregularities. What drug does the patient take?	A. *Prednisolone B. Indometacin C. Phenylbutazone D. Fluocinolone acetone E. Diclofenac sodium	
4.	A 48-year-old patient has been	A. *Glucocorticoids	

	intravenously administered prednisolone solution to arrest severe attack of bronchial asthma. What group of hormonal agents does prednisolone belong to?	B. Gestagenic drugs C. Estrogenic drugs D. Mineralocorticoid E. Anabolic steroids	
5.	A man has been suffering from rheumatoid arthritis for 10 years. Due to its exacerbation he had been taking acetylsalicylic acid and prednisolone. The patient complains of stomachache, eructation, nausea, sensation of full epigastrium, and meteorism. On gastroscopy there was an erosion (0,5x0,5 cm) of gastric mucosa detected. What is the cause of gastric mucosa defect development?	A.*Prolonged taking of aspirin and hormones B. Immune-mediated destruction of gastric mucosa C. Dysbacteriosis development D. Age-related changes of mucosa E. Prolonged hypersthenia of gastric muscles	
6.	A patient with allergic dermatitis came to the hospital. What anti-inflammatory and anti-allergic drug must be prescribed in this case?	A. * Prednisolone B. Ethamide C. Oxytocin D. Insulin E. Retabolil (Nandrolone)	Prednisolone is a steroid hormone (glucocorticoid). It has immunosuppressive activity (can provoke the development of oropharyngeal candidiasis), anti-inflammatory, anti-allergic effect.
7.	A 48-year-old patient has been intravenously administered prednisolone solution to arrest severe attack of bronchial asthma. What group of hormonal agents does prednisolone belong to?	A. *Glucocorticoids B. Gestagenic drugs C. Estrogenic drugs D. Mineralocorticoid E. Anabolic steroids	
8.	What is the most common side-effect of inhaled corticosteroids?	A. *Oropharyngeal candidiasis B. Increased body mass C. Subcapsular cataract D. Osteoporosis E. Arterial hypertension	

UNIT 36: water-soluble vitamins

Nº	Test	Distractors (A-E)	Explanations
1.	A patient suffers from hyperchromic B12-deficiency anemia. What vitamin preparation should be prescribed in this case?	A. *Cyanocobalamin B. Riboflavin C. Vicasol (Menadione) D. Thiamine chloride E. Retinol acetate	Cyanocobalamin (vitamin B12) is a water-soluble vitamin used to treat hyperchromic anemia
2.	A patient complains about gingival haemorrhage, petechial haemorrhages. What	A.*Ascorutinum B.Thiamine hydrochloride C.Cyanocobalamin D.Nicotinic acid E. Pyridoxine hydrochloride	Ascorutin is a vitamin preparation that contains ascorbic acid (vitamin C)

	vitamin preparation should be recommended?		
3.	Diet of a human must contain vitamins. What vitamin is usually prescribed for treatment and prevention of pellagra?	A. *Vitamin PP B. Vitamin C C. Vitamin A D. Vitamin B ₁ E. Vitamin D	Nicotinic acid (vitamin PP) is used to treat pellagra
4.	Water-soluble vitamins take coenzyme form in an organism. Thiamine diphosphate is the coenzyme of the following vitamin:	A. *B ₁ B. B ₂ C. C D. B ₆ E. B ₁₂	Thiamine diphosphate is a coenzyme of vitamin B1 (thiamine)
5.	A patient suffers from diarrhea, dermatitis, and dementia. What vitamin is likely to be deficient in this patient, causing the patient's condition?	A. *Nicotinic acid B. Retinol C. Tocopherol D. Vitamin D E. Vitamin K	The disease, which is characterized by the development of diarrhea, dementia, dermatitis (3 "D") is called pellagra. It develops as a result of insufficient intake of vitamin PP (nicotinic acid) with food
6.	Ascorutin vitamin preparation is used for treatment of bleeding gums and punctate hemorrhages. What vitamin does this preparation contain?	A. *C B. E C. A D. K E. D	Ascorutin is a combined medicine. It contains ascorbic acid (vitamin C).

UNIT 37: Lipid – soluble vitamins. Enzyme preparations and enzyme inhibitors. Different preparations influencing the methabolism

№	Test	Distractors (A-E)	Explanations
1.	A patient consulted an ophthalmologist about deterioration of twilight vision and xerophthalmus. What drug should the doctor prescribe?	A. *Retinol B. Pyridoxine C. Tocopherol D. Ascorbic acid E. Cocarboxylase	Retinol (vitamin A) fat soluble vitamin drug is used in violation of twilight vision (hemeralopia).
2.	Upon examination the ophthalmologist diagnosed a 21-year-old woman with visual impairment - hemeralopia ("night blindness"). What drug should this patient take to restore her vision?	A. *Retinol acetate B. Ergocalciferol C. Suprastin (Chloropyramine) D. Cholecalciferol E. Sustac forte (Nitroglycerin)	
3.	A 21-year-old patient dur-	A. *Retinol acetate	

	ing routine examination by an ophthalmologist was diagnosed with a visual impairment - generalopia ("night blindness"). What drug should she be prescribed to reduce the signs of this condition?	B.Cholecalciferol C.Ergocalciferol D.Nitroglycerin E.Chloropyramine	
4.	In case of hypovitaminosis of a certain vitamin, disturbed proliferation of epithelial and connective tissue can be observed. Patients with this type of hypovitaminosis usually present with impaired vision and spatial orientation. Name this drug:	A. *Retinol B. Tocopherol C. Pyridoxine D. Riboflavin E. Cholecalciferol	One of the early manifestations of hypovitaminosis A is a violation of the processes of differentiation and maintenance of the normal state of epithelial cells, hemeralopia
5.	Increased concentration of active oxygen forms is a mechanism of pathogenesis in a number of diseases. To prevent this process, antioxidants are prescribed. Select an antioxidant from the list below:	A. *Alpha-tocopherol B. Glucose C. Calciferol D. Cobalamine E. Glicerol	Tocopherol (vitamin E) is a vitamin preparation with antioxidant activity.
6.	A woman, who had undergone mastectomy due to breast cancer, was prescribed a course of radiation therapy. What vitamin preparation has marked antiradiation effect due to its antioxidant activity?	A. *Tocopherol acetate B. Ergocalciferol C. Riboflavin D. Cyanocobalamin E. Folic acid	
7.	To treat the patients with purulent wounds, a dressing with a certain immobilized enzyme is used. Name this enzyme:	A. *Trypsin B. Arginase C. Catalase D. Alkaline phosphatase E. Acid phosphatase	Trypsin is an enzyme of the class of hydrolases that breaks down peptides and proteins. Capable of selectively cleaving tissues that have undergone necrosis.

UNIT 38: Drugs affecting the erythropoiesis. Blood substitutes. Preparations of electrolytes

№	Test	Distractors (A-E)	Explanations
1.	In order to restore a man's circulating blood volume he was transfused with blood substitute - isotonic solution NaCl. What is the concentration of this solution?	A. *0, 9% B.0, 3% C.0, 5% D. 1% E.3%	Concentration isotonic solution of NaCl is 0.9%
2.	A patient suffers from hyperchromic B12-deficiency anemia. What	A. *Cyanocobalamin B. Riboflavin C. Vicasol (Menadione)	Cyanocobalamin (Vitamin B12) is a water-soluble vitamin that is used to treat hyperchromic (B12-folic acid defi-

vitamin preparation should be prescribed in this case?	D. Thiamine chloride E. Retinol acetate	ciency) anemia.
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UNIT 39: Drugs affecting the leucopoiesis, blood coagulation

Nº	Test	Distractors (A-E)	Explanations
1.	A 45-year-old woman, who for two weeks has been taking neodicoumarin (ethyl biscoumacetate) due to trombophlebitis, during a regular examination was detected to have decreased blood content of prothrombin, in urine there is microhematuria. What drug should be administered as a neodicoumarin antagonist?	A. *Vicasol (Menadione) B. Protamine sulfate C. Sodium citrate D. Heparin E. Aminocaproic acid	Vikasol (synthetic Vitamin K) refers to drugs that increase blood coagulation, antagonist neodikumarina. Indications for use: hemorrhagic syndrome associated with hypoprothrombinemia, recurrence after wounds, injuries and surgical interventions
2.	A woman noticed that a cut on her skin was still bleeding even after minutes had passed. What vitamin deficiency causes such condition?	A. * Vitamin K B. Vitamin A C. Vitamin D D. Vitamin E E. Vitamin B ₁₂	
3.	A patient with high risk of hemorrhages is recommended to take vicasol (menadione) by his physician. This drug is the structural analog of:	A. *Vitamin K B. Vitamin A C. Vitamin B5 D. Vitamin B12 E. Vitamin B6	
4.	Antivitamins are substances of various structure that limit utilization of vitamins in an organism and have an opposite to them action. Name antivitamin of vitamin K:	A. *Dicumarol B. Sulfapyridasine C. Deoxypyridoxine D. Aminopterin E. Isoniazid	Dicumarol - Vitamin K antivitamin
5.	Heparin is the directacting anti-coagulant that reduces blood coagulation and prevents thrombosis. Its action is based upon the following phenomenon:	A. *Protective power of colloids B. Syneresis C. Thixotropy D. Micelle formation E. Dialysis	Heparin - is a direct anticoagulant. It is used for the prevention and treatment of thromboembolic diseases
6.	A patient with myocardial infarction has been administered intravenously a direct anticoagulant, namely:	A. *Heparin B. Neodicoumarinum C. Vikasol D. Thrombin E. Calcium gluconate	
7.	A patient with acute myocardial infarction received anticoagulation therapy. What compound	A. * Heparin B. Hyaluronic acid C. Chondroitin sulfate D. Dermatan sulfat	

	will have anticoagulation effect?	E. Keratan sulfate	
8.	Coumarins, vitamin K antagonists, suppress the processes of blood coagulation. What protein synthesis is blocked by coumarins?	A. *Prothrombin B. Gamma globulin C. Albumin D. Transferrin E. Ceruloplasmin	Coumarins block the formation of prothrombin, proconvertin, and other coagulation factors in the liver (they have an anticoagulant effect).
9.	Fibrinolytic drugs are able to dissolve already formed blood clots in the human body. Which pharmaceutical preparation has fibrinolytic activity?	A. * Streptokinase B. Phenobarbital C. Riboflavin D. Menadione E. Isoniazid	Enzymes are able to dissolve blood clots in blood vessels.

UNIT 40: Immunotropic agents and antiallergic drugs

№	Test	Distractors (A-E)	Explanations
1.	Consult a patient on which antihistamine drug DOES NOT have sedative and hypnotic effect:	A. *Loratadine B. Diphenhydramine C. Promethazine D. Suprastinum E. Tavegil (Clemastine)	Loratadine is an antiallergic drug that blocks the histamine receptor H1, the second generation. It does not have sedative and hypnotic effects. Therefore, it can be used in the daytime, for drivers, etc.
2.	The student asks the pharmacist to recommend him the drug to relieve allergic rhinitis symptoms he suffers from when lime tree is in bloom. What drug can be recommended in this case?	A. *Loratadine B. Epinephrine C. Propranolol D. Ambroxol E. Losartan	
3.	An engine driver complains of his seasonal allergy symptoms. What nonsedating drug should be prescribed in this case?	A. *Loratadine B. Novocaine C. Fenofibrate D. Analgine (Metamizole) E. Atenolol	
4.	A patient with allergic rhinitis was prescribed loratadine. This drug belongs to the following group of antiallergic agents:	A. *H1-antagonists B. Glucocorticoids C. Membrane stabilizers D. H2-antagonists E. Leukotriene receptor antagonists	
5.	An oncological patient was prescribed fluorouracil that is a competitive inhibitor of thymidine synthase. It inhibits the process of:	A. *Pyrimidine nucleotides synthesis B. Carbohydrate disintegration C. Purine nucleotides synthesis D. Purine nucleotides disintegration E. Lipids synthesis	
6.	Allergic urticaria was found in the sick driver. What drug is indicated?	A. *Loratadine B. Adrenaline C. Cromolyn sodium D. Euphilin E. Diphenhydramine	

7.	The man developed anaphylactic shock after vaccination. Name the drug of choice.	A. *Adrenaline hydrochloride B. Anaprilin C. Ditylin D. Naphthysin E. Salbutamol	Adrenaline stimulates adrenoceptors and reduces the manifestations of an allergic reaction.
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UNIT 41: Disinfectants and antiseptics

№	Test	Distractors (A-E)	Explanations
1.	Select the halogenated antiseptic that would be preferable for a child to pack in the first aid kit, when going to a summer camp:	A. *Iodine alcoholic solution B. Brilliant green C. Copper sulfate D. Methylene blue E. Formaldehyde solution	Alcohol iodine solution is a halogen-containing antiseptic
2.	A patient with gingivitis was prescribed oral cavity irrigation with 0,02% potassium permanganate solution. What group of antiseptics does this drug belong to?	A. *Oxidants B. Dyes C. Detergents D. Alcohols E. Nitrofurans	Potassium permanganate refers to antiseptics of the oxidizing group
3.	Colloidal protection is used while manufacturing drug preparations. Name the preparation of colloidal silver protected by proteins:	A. *Protargol B. Festal C. Enzymtal D. Argentum E. Collagen	Protargol is a colloidal silver drug protected by proteins
4.	Before a surgical operation, a surgeon treated his hands with an alcohol-containing solution. Which group of drugs does this solution relate to?	A. *Antiseptics B. Disinfectants C. Sterilizing solutions D. Detergents E. Surface-active substances	Alcohol solutions belong to the group of antiseptics
5.	Having completed work in a laboratory, a student must tidy up the workspace, perform disinfection of the workbench and tools. What chemicals should be used for disinfection?	A. *Chloramine B. Hydrochloric acid C. Formalin D. Chloroform E. Ether	Chloramine is a disinfectant
6.	A patient with a small cut on the palm came to the dispensing chemist. What antiseptic would be advisable in this case?	A. *Hydrogen peroxide B. Doxycycline hydrochloride C. Ketoconazole D. Lidocaine hydrochloride E. Flemoxin (Amoxicillin)	Hydrogen peroxide is an antiseptic, belongs to the group of oxidizing agents. It is the only representative of the group of the proposed answers.
7.	What is the main mechanism of action underlying the bactericidal effect of benzylpenicillin on coccus flora?	A * Violation of the synthesis of the microbial cell wall B Suppression of protein synthesis C Damage to the permeability	Benzylpenicillin has a bactericidal effect on sensitive microorganisms by inhibiting the biosynthesis of the cell wall

		of the cytoplasmic membrane D Activation of the immune system of the macroorganism E Increase in phagocytic activity of leukocytes	
8.	You work in a pharmacy, which is located on the territory of a skin and venereological dispensary. Consult an internist, which antibiotic is the drug of choice for the treatment of syphilis?	A* Benzylpenicillin sodium salt B Polymyxin M sulfate C Levorin sodium salt D Lincomycin hydrochloride E Streptomycin sulfate	Benzylpenicillin sodium salt has a bacteriostatic effect and is the drug of choice in the treatment of syphilis.

UNIT 42-44: Chemotherapeutic agents. Antibiotics

№	Test	Distractors (A-E)	Explanations
1.	A patient was prescribed with an antitumoral antibiotic that inhibits synthesis of nucleic acids in the cells. What of the following antibiotics has such a mechanism of action?	A. *Actinomycin B. Tetracycline C. Nystatin D. Lincomycin E. Erythromycin	Actinomycin is an antibiotic with antitumor activity
2.	Antibiotics are classified by sources of production. Name an antibiotic of bacterial origin:	A. *Gramicidin B. Penicillin C. Tetracycline D. Lysozyme E. Gentamycin	Gramicidin antibiotic of bacterial origin
3.	Antibiotics can be classified according to various principles. According to the action mechanism cephalosporins relate to the following group:	A. *Inhibitors of cell wall synthesis B. Inhibitors of protein synthesis C. Inhibitors of respiratory processes D. Inhibitors of oxidative phosphorylation E. Inhibitors of cytoplasmic membrane synthesis	Cephalosporins are antibiotics that inhibit cell membrane synthesis
4.	Bacteria eventually become resistant to antibacterial agents. Resistance of gram-positive bacteria to penicillin antibiotics is caused by:	A. *Beta-lactamase production B. Permeability of the cell wall C. Active synthesis of peptidoglycan D. Active transport of antibiotic E. Protein synthesis	Bacteria produce resistance to penicillin through the synthesis of penicillinase. Penicillin can cause anaphylactic shock
5.	1 minute after the patient had been administered penicillin the patient's arterial pressure sharply dropped, pulse became thready, cold sweating and clonic convulsions began. Name this condition.	A. *Anaphylactic shock B. Traumatic shock C. Cardiogenic shock D. Septic shock E. Burn shock	

6.	In the course of bronchitis pharmacotherapy, the patient has developed dyspeptic disorders, photodermatitis and hepatic failure. What drug can cause such disorders?	A. *Doxycycline B. Paracetamol C. Ascorbic acid D. Acetylcysteine E. Codeine phosphate	Side effects of doxycycline: dyspeptic disorders, photodermatitis and liver failure
7.	What drug is used in treatment regimen for peptic ulcer disease to eliminate Helicobacter pylori?	A. *Clarithromycin B. Tienam C. Biseptol D. Chloridine E. Sulfalene	Clarithromycin - an antibiotic with anti-helicobacter activity
8.	A pharmaceutical manufacture produces a drug, that is an animal antibiotic. Point out this drug among those listed below:	A. *Lysozyme B. Gramicidin C. Novobiocin D. Phaseolin E. Chloramphenicol	Lysozyme - an antibiotic of animal origin
9.	A pharmaceutical enterprise offers wide range of antimicrobial agents. Select the broad spectrum antimicrobial agent:	A. *Tetracycline B. Rimantadine C. Nystatin D. Griseofulvin E. Phthalazolum	Tetracyclines - broad-spectrum antibiotics
10.	Antibiotics derived from various species of actinomycetes are widely used in medical practice. Point out these drugs among those listed below:	A.*Aminoglycosides (streptomycin, monomycin) B.Penicillin, cephalosporin, griseofulvin C. Polymyxin, bacitracin D. Chlorelina, arenarinum E. Lysozyme, erythrinum	Aminoglycosides - antibiotics derived from actinomycetes
11.	A chemotherapeutic agent has bactericidal effect against streptococci, staphylococci, bacilli, and clostridia. According to its action spectrum this drug belongs to the following group:	A. *Broad spectrum antibacterial agents B.Narrow spectrum antibacterial agents C.Broad spectrum antifungal agents D.Antiviral agents E.Antituberculous agents	Chemotherapeutic agent, which is active against Gr + and Gr - microorganisms, is classified as a broad-spectrum drug
12.	What is the main mechanism of benzylpenicillin bactericidal action on the coccal flora?	A. *Disturbed synthesis of microbial cell wall B. Inhibition of protein synthesis C.Disturbed cytoplasmic membrane permeability D.Activation of macroorganism immune system E. Increased phagocytic activity of leukocytes	Benzylpenicillin is an antibiotic of the biosynthetic penicillin group. It has a bactericidal effect due to enzymatic inhibition of the synthesis of the cell wall of microorganisms.
13.	You work in the pharmacy located at the premises of the dermatovenerologic clinic. Consult an intern what	A. *Benzylpenicillin sodium salt B. Streptomycin sulfate C. Polymyxin M sulfate	Benzylpenicillin is active against Treponema pallidum (causative agent of syphilis)

	antibiotic is a drug of choice for treatment of syphilis:	D. Lincomycin hydrochloride E. Levorin sodium salt	
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UNIT 45-46: Sulfonamides. Antimicrobial preparation of a different chemical structure.

№	Test	Distractors (A-E)	Explanations
1.	Sulfonamides are widely used as bacteriostatic agents. The mechanism of antimicrobial action of sulfonamides is based on their structural similarity to:	A. *Para-aminobenzoic acid B. Glutamic acid C. Folic acid D. Nucleic acid E. Antibiotics	The mechanism of action of sulfonamides is based on structural similarity in para-aminobenzoic acid, violate folic acid synthesis. Possess bacteriostatic activity. Side effects: the development of hemolytic anemia in patients with a genetic defect of glucose-6-phosphate dehydrogenase
2.	Sulfanilamides are widely used as bacteriostatic agents. The mechanism of antimicrobial action of Para-aminobenzoic acid	A. *Glutamic acid B. Folic acid C. Nucleic acid D. Antibiotics	
3.	Sulfanilamides inhibit the growth and development of bacteria. The mechanism of their action is based on the impairment of the following acid synthesis:	A. *Folic B. Lipoic C. Nicotinic D. Pantothenic E. Pangamic	
4.	Sulfanilamides are applied as antimicrobial agents in clinical practice. Sulfanilamide treatment, however, can result in hemolytic anemia development in patients that suffer from genetic defect of the following enzyme of pentose phosphate metabolism in erythrocytes:	A. *Glucose-6-phosphate dehydrogenase B. Hexokinase C. Transketolase D. Transaldolase E. Pyruvate kinase	

UNIT 47-48: Antituberculosis, antispirochetal, and antiprotozoal drugs

№	Test	Distractors (A-E)	Explanations
1.	What antiprotozoal drug can be recommended to a woman with trichomoniasis?	A. *Metronidazole B. Primaquine C. Chloridine D. Solusurminum (Sodiumstibogluconate) E. Chiniofon	Metronidazole is an antiprotozoal drug. It is used to treat Trichomonas, amebic dysentery, possesses anti-helicobacter activity.
2.	What drug is more advisable for the patient with amebic dysentery?	A. *Metronidazole B. Pyrantel C. Levamisole D. Bicillin-5 E. Benzylpenicillin sodium salt (Penicillin G sodium salt)	
3.	To prevent wound infection associated with surgical pro-	A. *Metronidazole B. Doxycycline hydrochloride	

	cedures a patient was given a synthetic antiprotozoan drug demonstrating high activity against <i>Helicobacter pylori</i> . Specify this drug:	C. Chingamin D. Acyclovir E. Isoniazid	
4.	Patients ill with tuberculosis take a drug that is an antivitamin of nicotinic acid. Name this substance:	A. *Isoniazid B. Sulfanilamide C. Acrichine D. Isoriboflavin E. Oxythiamine	Isoniazid is a first-line anti-TB drug. Continuous intake of the drug leads to a deficiency of pyridoxine (vitamin B6)
5.	What synthetic drug of the hydrazide group is typically prescribed for pulmonary tuberculosis?	A. *Isoniazid B. Rifampicin C. Acyclovir D. Metronidazole E. Doxycycline hydrochloride	
6.	The patient has been prescribed drug with antibacterial effect on tuberculosis mycobacteria. What drug is used in tuberculosis treatment and is pyridoxine antivitamin?	A. *Isoniazid B. Heparin C. Trimethoprim/sulfamethoxazole (Co-trimoxazole) D. Streptomycin E. Sulfanilamide	
7.	A 30 year-old patient suffering from pulmonary tuberculosis, has been prescribed isoniazid. Continuous taking of this drug may lead to the deficiency of the following vitamin:	A. *Pyridoxine B. Tocopherol C. Cobalamin D. Ergocalciferol E. Retinol	
8.	A 40-year-old female farmworker has been diagnosed with brucellosis and administered causal chemotherapy. What group of drugs will be used for this purpose?	A. *Antibiotic B. Donor immunoglobulin C. Inactivated therapeutic vaccine D. Polyvalent bacteriophage E. Antitoxic serum	
9.	A patient with tuberculosis has been prescribed some anti-TB preparations. Which of the following chemotherapeutic drugs has an effect on the tuberculosis pathogen?	A. *Ftivazide B. Furacilinum C. Methisazonum D. Sulfadimezinum E. Phtalazolium	Ftivazid - anti-tuberculosis drug
10.	What drug is advisable for individual malaria prophylaxis?	A. *Chingamin B. Rifampicin C. Ampicillin D. Gentamicin E. Trimethoprim/sulfamethoxazole (Co-trimoxazole)	Chingamin - antiprotozoan drug, used to prevent malaria
11.	The 32-year-old patient has been taking antituberculosis	A. *Rifampicin B. Isoniazid	Rifampicin - an anti-tuberculosis drug

	drugs. Later he noticed that his urine had become red-orange in color. What drug is conducive to this phenomenon?	C. Pyrazinamide D. Ethambutol E. Streptomycin sulphate	
12.	A structural analog of vitamin PP (nicotinic acid) is used as an antituberculous medicine. Name this medicine?	A. *Isoniazid B. Streptocide C. Riboflavin D. Tetracycline E. Aspirin	Isoniazid is an anti-TB drug. Isonicotinic acid hydrazide

UNIT 49-50: Anthelmintic, antifungal, and antiviral drugs

№	Test	Distractors (A-E)	Explanations
1.	A patient developed herpetic rashes. What drug should be prescribed in this case?	A. *Acyclovir B. Gentamicin C. Clotrimazole D. Benzylpenicillin E. Biseptol (Co-trimoxazole)	Acyclovir - antiviral drug, active against the herpes virus, viral hepatitis
2.	It is known that infectious type B hepatitis is a systemic disease caused by the type B hepatitis virus and characterized by a predominant liver affection. Choose from the below given list the drugs for the etiotropic therapy of this infection:	A. *Acyclovir B. Penicillin C. Tetracycline D. Sulfanilamides E. Fluoroquinolones	
3.	Select the drug with anti-herpesvirus activity that can be used for prevention and treatment of herpetic lesions on skin and mucosa:	A. *Aciclovir B. Rifampicin C. Ranitidine D. Nystatin E. Atropine	
4.	A female patient has been treated with antibiotics for a long time. Thereafter examination of smears from vaginal secretion revealed oval cells with well-defined nucleus, some cells gemmate. What preparations can help to confirm the diagnosis "candidosis"?	A. *Antifungal B. Antibacterial C. Antichlamydial D. Antiviral E. Antiprotozoal	Antifungal agents are used to treat condose (fungal infection)
5.	Epidemic of influenza was announced in a town. Which drug can be recommended for the nonspecific prophylaxis of influenza?	A. *Leukocytic interferon B. Anti-influenza vaccine C. Antibiotics D. Anti-influenza immunoglobulin E. Anti-influenza serum	Interferons - antiviral drug. Blocks virus protein synthesis and used to prevent influenza
6.	A drugstore received a supply of a drug that is widely used for treatment of many virus diseases since it is not virus specific. What drug is it?	A. *Interferon B. Remantadin C. Metisazone D. Immunoglobulin E. Vaccine	

7.	A local general practitioner recommends taking interferon for influenza prevention. What is the mechanism of action of this drug?	A.*Blocks virus protein synthesis B. Blocks virus stripping C. Inhibits virion exit from cells D. Prevents adsorption of virus in cell receptors E. Disrupts the process of virus assembly	
8.	The defensive mechanisms against some infectious diseases can be greatly reinforced with interferon. Interferon preparations will be the most advisable in cases of the following type of infections:	A.* Viral B.Helminthic C.Protozoal D.Microbioses E. Fungal	
9.	Mother of a 10-year-old child came to the pharmacy to obtain a drug for prevention of upper respiratory tract infections. What drug would be recommended by the dispensing chemist?	A. *Interferon B. Benzoteph C. Carvedilol D. Tetracycline E. Doxorubicin	
10.	A patient fell ill the day before, the disease is acute with a predominance of general toxic symptoms. With an account for the epidemic situation in the city, the doctor diagnosed the patient with influenza A. What emergency etiotropic treatment must be administered to this patient?	A. *Rimantadine B. Oxolinic ointment C. Gentamicin D. Inactivated influenza vaccine E. Human gamma globulin	Remantadin - antiviral drug used to treat viral diseases such as influenza
11.	Pharmacy has received viricides. Choose the viricide used for influenza treatment from the list given below.	A. *Rimantadine B. Metisazone C. Levamisole D. Azidothimidine E. Acyclovir	
12.	A pharmacy has received a batch of drugs for treatment of upper respiratory tract infection. What drug is used to treat influenza?	A. *Rimantadine B. Methisazone C. Levamisole D. Idoxuridine E. Doxycycline	
13.	A female patient bitten by a stray dog came to a surgery. Wide lacerated wounds were localized on the patient's face. What treatment and prevention aid should be rendered in order to prevent rabies?	A. Immunization with the antirabic vaccine B. Combined antibiotic therapy C. Hospitalization, injection of diphtheria-pertussis-tetanus vaccine D. Hospitalization, medical surveillance E. Urgent injection of normal gamma-globulin	Rabies vaccine used to prevent rabies
14.	Aurococcus culture was ob-	A. *Nystatin	Nystatin is not an antibiotic. This is an

	<p>tained from the nasal cavity of a child suffering from chronic tonsillitis. Causative agent's sensitivity towards a number of antibiotics was tested to choose the optimal drug. What drug WAS NOT included in antibiotic susceptibility testing?</p>	<p>B. Ampicillin C. Tetracycline D. Levomycetin (Chloramphenicol) E. Erythromycin</p>	<p>antifungal medication.</p>
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UNIT 51-52: Drugs affecting on the gastrointestinal system

№	Test	Distractors (A-E)	Explanations
1.	<p>A pregnant woman was diagnosed with vaginal dysbacteriosis. What drug should be prescribed in this case?</p>	<p>A. *Probiotic B. Antibiotic C. Bacteriophage D. Interferon E. Polyvitamins</p>	<p>Probiotics (Bifidumbacterin) are drugs that normalize the normal microflora of mucous membranes.</p>
2.	<p>It is known that a peroral drug contains over 1 billion of living microbial cells per 1 millilitre. Nonetheless the drug was accepted as applicable. What drug group does it relate to?</p>	<p>A. *Eubiotics B. Antibiotics C. Vitamins D. Sulfanilamides E. Immunostimulants</p>	
3.	<p>A 3,5-year-old child has been diagnosed with dysbacteriosis in the form of critical reduction of gram-positive anaerobic bacteria and increased number of staphylococci and yeast fungi. What preparation should be used for the correction of dysbacteriosis?</p>	<p>A. *Bifidumbacterin B. Colibacterin C. Coli-Proteus bacteriophage D. Furazolidone E. Lactoglobulin</p>	
4.	<p>A 45-year-old patient with a gastric ulcer needs the reduction of H Cl secretion. Which drug provides this effect due to inhibition of the proton pump?</p>	<p>A. *Omeprazole B. Atropine C. Quamatel D. Benzo hexonium E. Proglumide</p>	<p>Omeprazole is a proton pump inhibitor, thereby reducing the secretion of gastric juice</p>
5.	<p>A patient with gastric ulcer has been administered omeprazole. What is the mechanism of its action?</p>	<p>A. *Inhibition of H⁺K⁺-ATPase B. Blockade of histamine H₂-receptors C. M⁻-cholinergic receptor blockade D. Neutralization of H Cl E. Stimulation of mucus production</p>	
6.	<p>A 37-year-old patient with peptic gastric ulcer disease was prescribed a medicine as a part of his multimodality therapy. The medicine lowers</p>	<p>A. *Omeprazole B. Famotidine C. Gastrozepin (Pirenzepine) D. Ranitidine</p>	

	acidity of gastric juice, inhibits +, +-adenosine triphosphatase, decreases the volume of gastric secretion and pepsinogen production. It is a prodrug. Name this medicine:	E. Phosphalugel (Aluminium phosphate)	
7.	A 28-year-old man with peptic ulcer of the stomach was prescribed a drug that inhibits gastric juice secretion. Specify this drug:	A. * Omeprazole B. Ethacrynic acid C. Duphalac (Lactulose) D. Lidocaine E. Fenofibrate	
8.	Fatty degeneration of liver is prevented by lipotropic substances. Which of the following substances relates to them?	A. *Methionine B. Cholesterol C. Bilirubin D. Glycine E. Glucose	Methionine is a lipotropic substance that helps with fatty liver
9.	A doctor prescribed a herbal drug with flavonoid complex of Silybum marianum to a patient suffering from chronic hepatitis. This hepatic protector stimulates protein synthesis, normalizes phospholipid metabolism, acts as an antioxidant. Name this drug:	A. *Silymarin B. Essentiale C. Galstena D. Thiotriasoline E. Ursodeoxycholic acid	Silymarin refers to the hepatoprotectors of plant origin.
10.	Contrykal is used to prevent pancreatic autolysis. This drug is the inhibitor of the following enzymes:	A. *Proteases B. Lipases C. Glycosidases D. Nucleases E. Synthetases	Contrykal inhibits pancreatic enzymes.
11.	To stop diarrhea the doctor prescribed a drug that affects opiate receptors of the intestine and decreases its peristalsis. Name this drug:	A. *Loperamide B. Heparin C. Levorin D. Voltaren (Diclofenac) E. Tetracycline	Loperamide - a drug with an opiate mechanism of action, normalizes intestinal motility. Use as an antidiarrheal medicine
12.	A patient came to the pharmacy to obtain an antidiarrheal agent. What drug would be recommended by the dispensing chemist?	A. *Loperamide B. Dicaine (Tetracaine) C. Ranitidine D. Picolax (Sodium picosulfate) E. Anesthesin (Benzocaine)	
13.	To treat peptic ulcer disease of the stomach a patient has been prescribed famotidine. Specify the mechanism of action of this drug:	A. * H_2 histamine receptors block B. Effect on ion channels of cell membranes C. Antienzyme action D. Physicochemical interaction E. Effect on cell membrane transport system	Famotidine blocks the H_2 histamine receptors of the gastrointestinal tract

14.	A patient, who was prescribed famotidine to treat peptic ulcer disease, came to the pharmacy. What is this drug's mechanism of action?	A. *H2-histamine receptor blockade B. H1-histamine receptor blockade C. Muscarinic receptor blockade D. Inhibition of hydrogen potassium ATPase E. Ganglionic receptor blockade	
15.	Select the hepatoprotective drugs from the list below:	A. *Essentiale (Phospholipides), Thiotriazoline B. No-Spa (drotaverine), papaverine hydrochloride C. Allochol, Cholenzym D. Festal, Panzinorm (Pancreatin) E. Oxaphenamide (Osalmid), Nicodin	Essentiale and thiotriazolin are the only hepatoprotective drugs from the proposed answers
16.	A patient came to the pharmacy to obtain a drug that contains pancreatic enzymes and can be taken for chronic pancreatitis. What drug would be recommended by the dispensing chemist?	A. *Pancreatine B. Triamcinolone C. Gordox (Aprotinin) D. Pirenzepine E. Omeprazole	Pancreatin is an enzyme preparation that contains pancreatic enzymes

UNIT 53: Drugs affecting on the respiratory system

№	Test	Distractors (A-E)	Explanations
1.	To relieve dry cough a patient with bronchitis was prescribed a drug that is an alkaloid of yellow horned-poppy. Name this drug:	A. *Glaucine hydrochloride B. Codeine phosphate C. Libexin (Prenoxdiazine) D. Oxeladin E. Codterpin	Glaucine hydrochloride alkaloid yellow horned poppy
2.	What non-narcotic centrally-acting antitussive drug can be used for dry cough?	A. *Glaucine B. Codeine C. Acetylcysteine D. Ambroxol E. Mucaltinum	
3.	A pharmacy dispenses glaucine hydrochloride to a patient with chronic bronchitis. The patient must be warned about the following typical side effect of the drug:	A. * Blood pressure fall B. Excitation of the central nervous system C. Arrhythmia D. Rise of intraocular pressure E. Allergic skin rash	Glaucine - non-narcotic antitussive drug. It does not have a depressing effect on breathing, does not cause dependence. Side effect - lowering blood pressure
4.	Pharmacy sells glaucine hydrochloride to the patient with chronic bronchitis. What common side effect should he be warned about?	A. *Decrease of arterial pressure B. Excitation of central nervous system C. Disruption of cardiac rate D. Increase of intraocular	

		pressure E. Allergic skin rashes	
5.	A patient with tracheitis was prescribed a centrally acting antitussive drug that does not depress respiration, causes no addict, and lowers blood pressure. Name this drug:	A. *Glaucine hydrochloride B. Codeine phosphate C. Prenoxdiazine D. Acetylcysteine E. Morphine hydrochloride	

UNIT 59-60: Pharmacotoxycodynamics.

№	Test	Distractors (A-E)	Explanations
1.	A patient with signs of mercury poisoning has been delivered into an admission room. What antidote should be prescribed in this case?	A. *Unithiol B. Atropine sulfate C. Proserin D. Naloxone E. Calcium chloride	Unithiol - an antidote for heavy metal poisoning
2.	Treatment with sodium bromide resulted in development of bromism in the patient: rhinitis, cough, conjunctivitis, and skin rashes. What should the patient be prescribed to treat this condition?	A. *Sodium chloride B. Potassium chloride C. Sodium iodide D. Sodium sulfate E. Calcium chloride	Sodium chloride is introduced in case of bromine poisoning
3.	A patient with myocardial infarction was receiving heparin as a part of the complex therapy. With time the patient developed hematuria. What drug should be given as an antidote in this case?	A. *Protamine sulfate B. Neodicumarin C. Aminocaproic acid D. Vicasol (Menadione) E. Fibrinogen	Protamine sulfate is a specific heparin antagonist