Pharmacology on your palms

CLASSIFICATION OF THE DRUGS

DRUGS AFFECTING THE NERVOUS SYSTEM

Drugs affecting the central nervous system

CNS DEPRESSANTS
Analgesics (opioid, analgesics-antipyretics, NSAIDs)
Sedative and hypnotic drugs
Tranquilizers
Neuroleptics
Anticonvulsants
Antiparkinsonian drugs
General anaesthetics
CNS STIMULANTS
Psychomotor stimulants
Analeptics
Antidepressants
Nootropics (Cognitive enhancers)
Adaptogens
Drugs affecting the cerebral blood circulation

Drugs affecting peripheral nervous system

Drugs affecting the sensory nerve endings
(AFFECTING THE AFFERENT INNERVATION)

Local anaesthetics
Coating drugs
Adsorbents
Astringents
Expectorants
Irritant drugs

Drugs affecting peripheral neurotransmitter processes
(AFFECTING THE EFFERENT PART OF THE NERVOUS SYSTEM)
Direct-acting-cholinomimetics
Anticholinesterase drugs
M- cholinoblockers
Ganglionic blockers
Muscle relaxants
Adrenomimetics
Adrenoblockers
Sympatholytics

DRUGS AFFECTING THE ORGANS AND TISSUES

Drugs affecting the cardiovascular system

Cardiac glycosides
Antihypertensive drugs
Antianginal drugs
Antiarrhythmic drugs
Antihyperlipidemic drugs
Spasmolytics

Drugs affecting the excretory system

Diuretics

Drugs affecting the hemopoietic system

Drugs affecting blood coagulation
Drugs affecting erythro- and leukopoiesis

Drugs affecting the digestive system

Anorectic drugs
Bitter stuffs. Drugs for replacement therapy
Antiacid drugs
Antiulcer drugs
Hepatoprotectors
Laxative drugs. Drugs against diarrhea

Drugs affecting metabolism

Hormonal drugs of hypophysis, thyroid, parathyroid, gonads, adrenal gland cortex, anabolic steroids
Insulins and oral hypoglycemic drugs
Vitamins, macro- and microelements
Enzymes. Antienzymes
Drugs for transfusion therapy

CHEMOTHERAPEUTIC DRUGS

Antimicrobial, antiviral, antiparasitic drugs

Antibiotics
Sulfonamides
Antituberculous drugs
Antihelminthic drugs
Antifungal drugs
Antiviral drugs
Antimalarial drugs
Antisyphilitic drugs
Antiseptics
Disinfectants

DRUGS FROM DIFFERENT PHARMACOLOGICAL GROUPS

Antitumor drugs
Antiallergic drugs
Antidotes

NARCOTIC (OPIOID) ANALGESICS

CLASSIFICATION	NATURAL AND SEMI-SYNTHETIC AGENTS	SYNTHETIC AGENTS	
Drugs and their synonyms	1. Morphine 2. Codeine 3. Aethylmorphine h/chl. (Dionine) 4. Omnopon	5. Trimeperidine (Promedol) 6. Fentanyl 7. Piritramide (Dipidolor) 8. Tilidine (Valoron) 9. Sufentanil	10. Dimenoxadol h/chl. (Estocin) 11. Pentazocine (Fortral) 12. Butorphanol (Moradol) 13. Buprenorphine (Norphine) 14. Tramadol
Mechanism of action	Binding to opioid receptors in the CNS → inhibition of the algogens release on the whole way of pain impulses passing. Inhibition of the intercalary neurons of the spinal cord, reticular formation, thalamic pain centers, summation ability of the CNS.		
Pharmacological effects	Inhibition of the pain, cough, emetic and respiratory centers. Stimulation of vagus nerve and oculomotor nerve (miosis) centers.		
Indications and interchangeability	Strong and very strong pains (1,3-14), neuroleptanalgesia (6), premedication and post-operation period (1,4-14), labour analgesia (5,7,9,10), colics (5-6,8-10,12), eye diseases (3), strong persistent cough (2,3,10).		
Doctor and pharmacist, remember!	Narcotic analgesics are incompatible with antiparkinsonian agents, MAO inhibitors, peripheral acting muscle relaxants, β-adrenoblockers, glucocorticoids, ACTH. Morphine is incompatible with aminazine in the same syringe. Promedol is incompatible with antihistaminic agents, tubocurarin chloride, trasicor. Pentazocine must not be injected with barbiturates in the same syringe. Codeine phosphate shouldn't be taken together with methotrexate. Tramadol for injections is incompatible with solutions of diazepam, flunitrazepam, nitroglycerin, phenylbutazone. Narcotic analgesics aren't prescribed for children up to 2 years and butorphanol - up to 18 years old. All drugs containing natural opium alkaloids, inhibit the peristalsis and secretion of GIT. Codeine as a part of the complex drugs causes euphoria and addiction very rarely. Specific antagonist of the narcotic analgesics is naloxone. Before meals: 11.		

ANALGESICS-ANTIPYRETICS

CLASSIFICATION	PYRAZOLONE DERIVATIVES	PARAAMINOPHENOL DERIVATIVES	COMBINED AGENTS
Drugs and their synonyms	1. Methamizole sodium (Analgin)	2. Paracetamol (Panadol)	3.Sedalgin 4. Tempalgin 5. Baralgin 6. Citramon 7. Citropac 8. Cyclopar 9. Ascopar 10. Paravit
Mechanism of action	Decrease of the pain impulses transmission through afferent nerves and inhibition of subcortical pain centers. Thermoregulation center suppression.		
Pharmacological effects	Analgesic (1-10), antipyretic (1-3,6-10), anti-inflammatory (6-7,9), sedative (3,4), spasmolytic (5,8). Side effects: allergy, suppression of hemopoiesis (1-10), nephritis (2,3,4); nausea, vomiting, methemoglobin formation, stomach ulceration (1,3-5), decrease of blood coagulation (1,3,7).		
Indications and interchangeability	Pains, not dangerous for life (headache, toothache, articular pain, etc.) (1-10), fever (2,6-7,9,10), neuralgia (1-4); colics, spasms of coronary and cerebral vessels (5-8).		
Doctor and pharmacist, remember!	Analgesics-antipyretics are incompatible with sulfonamides, antidepressants, glucocorticoids, anticoagulants. Analgesics, especially pyrazolone derivatives, are incompatible with salicylates, dichlothiazide. The long-term administration of anticonvulsants may decrease the paracetamol activity.		

NONSTEROIDAL ANTI-INFLAMMATORY DRUGS (NSAIDs)

CLASSIFICATION	SALICYLIC ACID DERIVATIVES	ARYLCARBONIC ACID DERIVATIVES	OXICAMS AND FENAMATES	PYRAZOLONE AND INDOLEACETIC ACID DERIVATIVES	COMBINED AGENTS AND OTHER NSAIDs*
Drugs and their synonyms	1. Acetylsalicylic acid (Aspirin) 2.Lysin acetylsalicylate (Aspisol)	3. Ketoprofen (Ketonal) 4.Sodium diclofenac (Voltaren, Orthofen) 5.Thiaprofenic acid (Surgam)	6.Meloxicam (Movalise) 7.Piroxicam 8.Niflumic acid (Donalgin) 9. Mefenamic acid	10.Phenylbutazone (Butadion) 11.Clofezone 12.Indomethacin (Methindole)	13.Reopyrin 14.Novigan 15.Arthrotek 16.Fortalgin C 17.Etodolac* (Elderin) 18. Ketorolac* 19. Diclocaine 20.Ascofen 21.Inflagesic plus 22.Valcofen
Mechanism of action	Suppression of the cyclooxygenase activity (COX), disturbance of the prostaglandins and thromboxane synthesis, suppression of the inflammatory mediators, hyaluronidase, lysosomal hydrolases activity. Decrease of the energy supply in the inflammatory focus. Inhibition of the subcortical pain centers.				
Pharmacological effects	Anti-inflammatory, antipyretic, analgesic, antiaggregant (1-22); sedative, anticonvulsive (22). Side effects: gastric ulceration, allergic reactions, bleedings, leukopenia, bronchospasm (seldom).				
Indications and interchangeability	Diseases of the connective tissue (1-13,15,17,19); myalgia, arthralgia, bursitis (1-13,15-18,20-21); headache (1,2,9,14,16,20-22), hyperthermia (1,2,9,16,20-22); acute respiratory viral diseases (1,9,16,20-22), tendency of convulsive states appearance at high temperature in children (22), pains in the traumatic injuries (1-5,7-10,12-18,21), arthritis (3-13,15,17,19,21), gout (10-13), glomerulonephritis (12), thrombophlebitis (1,2,10-12), thromboprophylaxis, hypercoagulant syndrome (1,2); renal, hepatic and intestinal colics (14), postoperative pain syndrome (5,17,18,21).				
Doctor and pharmacist, remember!	Salicylates mustn't be combined with other NSAIDs (the ulcerogenic effect increases) and anticoagulants (the risk of bleeding increases). Butadion is incompatible with glucocorticoids. Indomethacin decreases the effects of β-adrenoblockers and saluretics. Meloxicam is incompatible with cyclosporin, methotrexate, diuretics. After meals: 1,3-5,8-10,15,17.				

HYPNOTIC AND SEDATIVE DRUGS

CLASSIFICATION	SEDATIVE DRUGS	HYPNOTIC DRUGS		
		BENZODIAZEPINE DERIVATIVES	BARBITURIC ACID DERIVATIVES	CYCLOPYRROLONE DERIVATIVES* AND AGENTS FROM OTHER CHEMICAL GROUPS
Drugs and their synonyms	1. Persen 2. Sanason 3. Belloid 4. Sodium bromide 5. Valerian extract 6. Corvalol (Valocordin) 7. Motherwort herb 8. Novo-passit 9. Cava-Cava extract (Antares)	10. Nitrazepam (Radedorm) 11. Brotizolam (Lendormin) 12. Midazolam (Dormikum) 13. Triazolam (Halcion) 14. Flunitrazepam (Rohypnol)	15. Phenobarbital (Luminal) 16. Cyclobarbital (Fanodorm) 17. Cyclobarbital+Diazepam (Reladorm)	18. Zopiclone* (Imovan) 19. Metacvalone 20. Zolpidem (Ivadal) 21. Doxylamine (Donormyl)
Mechanism of action	Increase and concentration of the inhibitory processes in brain cortex; inhibition of the excitation processes in CNS (1-9). Inhibition of brain polysynaptic structures. Decrease of activating influence from reticular formation to brain cortex. Increase of activity of the natural inhibitory mediator GABA (10-21).			
Pharmacological effects	Sedative (1-9), spasmolytic (1-3,5). Hypnotic, sedative (in low doses), potentiative, anticonvulsant (10-21); anxiolytic (10-14), muscle relaxant (10-12,18).			
Indications and interchangeability	Neuroses (1-10), neurogenic diseases (peptic ulcer, ischemic heart disease, hypertension) (1,3-8). Insomnia: falling asleep disorders (9-13,15-21), sleep duration disorders (10,11,13-15,18). Rapid relief of convulsion syndromes (10,15). Premedication (10,12,14). Itching dermatosis, migraine, climacteric syndrome (8).			
Doctor and pharmacist, remember!	Sedative drugs are incompatible with MAO inhibitors, α-adrenomimetics, adrenocorticoids, β-adrenomimetics, antiarrhythmic drugs (quinidine-like ones). Hypnotic drugs are incompatible with tricyclic antidepressants, muscle relaxants, atropine sulfate. Barbiturates and benzodiazepines can cause tolerance, addiction, euphoria, withdrawal syndrome. Barbiturates (especially phenobarbital) are inductors of the liver microsomal enzymes. Phenobarbital is incompatible with reserpine, streptocide, adrenaline h/chl, gentamycin, mesatone. Barbiturates are incompatible with cardiac glycosides. Before meals: 4,6,7. After meals: 8.			

TRANQUILIZERS (ANXIOLYTICS)

CLASSIFICATION	BENZODIAZEPINE DERIVATIVES	DIPHENYLMETHANE AND PROPANDIOL* DERIVATIVES	AGENTS FROM DIFFERENT CHEMICAL GROUPS
Drugs and their synonyms	1. Diazepam (Seduxen) 2. Chlordiazepoxide (Chlozepide) 3. Alprazolam (Alzolam) 4. Oxazepam (Nozepam) 5. Bromazepam (Lexotan) 6. Mezapam (Rudotel) 7. Hydazepam 8. Dipotassium clorazepate (Tranxen) 9. Lorazepam (Merlit) 10. Phenazepam	11. Benactizine (Amizyl) 12. Meprobamate* (Meprotan)	13. Benzoclidine h/chl. (Oxylidin) 14. Trimethozine (Trioxazine) 15. Mebicar 16. Hydroxyzine (Atarax)
Mechanism of action	Binding to benzodiazepine receptors → increase of GABA activity (1-10); inhibition of the excitability of brain subcortical regions (thalamus, hypothalamus, limbic system) and their connections with the brain cortex (1-16).		
Pharmacological effects	Psychosedative (anxiolytic, tranquilizing), potentiative (1-16), muscle relaxant (all drugs, except 6,7,13,15), moderate hypnotic (except 6), anticonvulsant (except 13).		
Indications and interchangeability	Neuroses, minor psychoses (transitional states) (1-16); neurogenic diseases (hypertension, peptic ulcer, neurodermites) (1-13,16); anaesthesiology (1,2,10-12), sleeping disorders (1-13,15), spastic states (1,2,11,12), depressions (8), withdrawal syndrome (1,2,7,10,16).		
Doctor and pharmacist, remember!	Tranquilizers mustn't be combined with MAO inhibitors, phenothiazine derivatives, alcohol, CNS depressants. Tranquilizers are contraindicated to drivers and persons performing the work, that requires a quick psychic and physical reaction. Tranquilizers can cause addiction and tolerance. "Daytime" tranquilizers are mezapam, rudotel, hydazepam, mebicar, benzoclidine h/chl, trimethozine. Diazepam solution shouldn't be combined with any other drug in the same syringe. Diazepam is incompatible with adrenaline h/chl, isadrin, prednisolone, mesatone. The dose of tranquilizers should be decreased gradually avoiding the withdrawal syndrome. After meals: 11,12,14.		

NEUROLEPTICS (ANTIPSYCHOTIC AGENTS)

CLASSIFICATION	PHENOTHIAZINE DERIVATIVES	BUTYROPHENONE DERIVATIVES	AGENTS FROM OTHER CHEMICAL GROUPS
Drugs and their synonyms	1. Chlorpromazine (Aminazine) 2. Levomepromazine (Tizercin) 3. Perphenazine h/chl. (Aethaperazine) 4. Trifluoperazine (Triphthazine) 5. Thioridazine (Melleril) 6. Fluphenazine (Moditen) 7. Thioproperazine (Majeptil)	8. Droperidol 9. Haloperidol 10. Trifluperidol	11. Pimozide (Orap) 12. Penfluridol (Semap) 13. Chlorprothixene 14. Sulpyride (Eglonyl) 15. Clozapine (Leponex) 16. Sultopride (Topral)
Mechanism of action	Inhibition of the reticular formation → decrease of its influence on the brain cortex. Block of the function of mediators (dopamine (especially block of D_2-receptors), norepinephrine, acetylcholine) in different parts of CNS.		
Pharmacological effects	Antipsychotic, potentiative, hypothermic, antiemetic, adrenolytic, cholinolytic, cataleptogenic. Side effects: extrapyramidal disorders (catatonia, catalepsy, tremor) (1-14,16), sedative effect (apathy, lethargy, drowsiness)(1-7).		
Indications and interchangeability	Psychoses (1-16); anaesthesia, premedication (1-3,8,9), intractable vomiting (1,3,4,7,9,10), hypertensive crisis (1,2,8), dermatoses (1-3,13), transitional psychoses (11), hyperthermia, resistant to the antipyretics (1), neuroleptanalgesia (8,9), shock (8).		
Doctor and pharmacist, remember!	Neuroleptics are incompatible with anticholinesterase agents, MAO inhibitors, cholinomimetics, adrenomimetics, antihypertensive agents and CNS depressants. Phenothiazines are incompatible with tricyclic antidepressants. Aminazine is incompatible with adrenaline h/chl, amytriptilin, caffeine, morphine, vitamin B_{12}, cardiac glycosides. Haloperidol is incompatible with adrenaline h/chl, sombrevin; it decreases the effects of indirect-acting anticoagulants. Aminazine has anti-inflammatory and local irritating effects. Before meals: 11,13. After meals: 1,3,4,7,9,10,15.		

ANTICONVULSANTS

CLASSIFICATION	ANTIEPILEPTIC AGENTS	AGENTS, STOPPING CONVULSIONS IN OTHER STATES
Drugs and their synonyms	1. Phenobarbital 2. Benzobarbital (Benzonal) 3. Benzoilbarbamyl (Benzobamyl) 4. Primidone (Hexamidine) 5. Phenytoin (Diphenin) 6. Beclamide (Chloracon) 7. Carbamazepine (Tegretol) 8. Clonazepam (Antelepsin) 9. Ethosuccimide (Suxilep) 10. Pufemide 11. Valproic acid (Convulex) 12. Lamotrigine (Lamictal)	13. Diazepam (Seduxen) 14. Clobazam 15. Chloral hydrate 16. Magnesium sulfate
Mechanism of action	Inhibition of the activity of brain cortex and subcortex motor zones. Increase of the content of inhibitory transmitter GABA in the CNS. Decrease of the aminoacids (glutamate, aspartate) stimulant effect on CNS.	
Pharmacological effects	Anticonvulsant (1-16), sedative (1,3,14,16), hypnotic (1-4,13,15), anxiolytic (9,11,13,14).	
Indications and interchangeability	Major epilepsy (1-8,11-13); minor epilepsy (8-11,14); neuralgia of trigeminal nerve (7,9); convulsions because of tetanus, eclampsia; intoxications by convulsive poisons (13-16).	
Doctor and pharmacist, remember!	Anticonvulsants are incompatible with anticholinesterase agents, β-adrenomimetics, antidepressants, cholinomimetics, isoniazide and its derivatives, coumarins, acetylsalicylic acid, teturam. Carbamazepine and valproic acid (taking together) can cause coma. Carbamazepine is incompatible with tetracyclins. Sodium valproate is absolutely incompatible with alcohol. Withdrawal syndrome is typical for anticonvulsants. Diphenin is incompatible with gentamycin, digitoxin, proserine, sulfonamides, lidocaine. Diphenin has antiarrhythmic effect and it is used for treatment of tachyarrhythmia. Magnesium sulfate is incompatible with atropine sulfate, dibazol, prednisolone, mesatone. Before meals: 10. After meals: 2-7,9,11.	

ANTIPARKINSONIAN DRUGS

CLASSIFICATION	ANTICHOLINERGIC AGENTS	DOPAMINERGIC AGENTS
Drugs and their synonyms	1. Trihexyphenidyl (Cyclodol, Parkopan) 2. Triperiden (Norakin) 3. Diphenyltropine h/chl. (Tropacine) 4. Diethazine h/chl. (Dinezine)	5. Levodopa (Levopa) 6. Nacom (Levodopa+Carbidopa) 7. Madopar 8. Amantadine (Midantan) 9. Gludantane 10. Bromocriptine (Parlodel)
Mechanism of action	Central (preferably) and peripheral anticholinergic (cholinolytic) effect.	Increase of dopamine content in CNS. Stimulation of dopaminergic receptors in CNS; increase of their sensibility to dopamine.
Pharmacological effects	Antiparkinsonian (elimination of parkinsonism symptoms) (1-10): muscular rigidity and stiffness (1,2,5-10), tremor (5,9), hypersalivation (1,2,5), hyperhidrosis, skin obsceness (3,4); antiviral (8,9).	
Indications and interchangeability	Parkinson's disease (1-10); spastic pareses and paralyses (1,3); extrapyramidal disorders, caused by neuroleptics (1,2,9,10); hereditary extrapyramidal disorders (5); acromegaly, Cushing's syndrome, suppression of lactation (10); prophylaxis and treatment of viral infections (8,9).	
Doctor and pharmacist, remember!	Antiparkinsonian drugs are incompatible with cholinomimetics, anticholinesterase agents, neuroleptics, tranquilizers, narcotic analgesics. Bromocriptine is incompatible with ergot alkaloids, oral contraceptives, MAO inhibitors, CNS depressants. Levodopa, madopar, nacom are incompatible with MAO inhibitors and vitamin B_6. Levodopa is incompatible with drotaverin. Trihexyphenidyl and triperiden are contraindicated to patients with glaucoma and should be carefully prescribed to patients with hypertension and atherosclerosis. Dinezine must be alternated with other antiparkinsonian drugs. Gludantane is used in viral eye diseases treatment. After meals: 3-9,10.	

ANTIDEPRESSANTS

CLASSIFICATION	TRICYCLIC, TETRACYCLIC* AGENTS	MAO INHIBITORS (REVERSIBLE, IRREVERSIBLE*)	SELECTIVE INHIBITORS OF SEROTONIN REUPTAKE	PLANT ORIGIN, COMBINED* AND OTHER** AGENTS
Drugs and their synonyms	1 Mianserine* (Miansan) 2. Amitriptyline (Amizol) 3. Doxepin (Sinequan) 4. Imipramine (Melipramine)	5. Nialamide* (Nuredal) 6. Pyrazidol (Pyrlindol)	7. Fluoxetine (Prozak) 8. Sertraline (Zoloft)	9. Hyperycin (Deprim) 10. Amixide* (Amitriptyline+Chlordiazepoxide) 11. Thianeptine** (Coaxyl)
Mechanism of action	Decrease of noradrenaline, dopamine, serotonin reuptake increasing their accumulation in the synaptic cleft (1-4,10).	Block of the MAO enzyme (5,6).	Inhibition of serotonin reuptake increasing their accumulation in the synaptic cleft (7,8).	Inhibition of MAO activity (9). Influence on the limbic system (10). Increase of serotonin reuptake by the neurons of the brain cortex and hippocamp (11).
Pharmacological effects	Antidepressant, thymoleptic, potentiative (1-11); cholinolytic (2,4,7), sedative (1-3,10), stimulant (4-7,9), anxiolytic (1-4,10,11), nootropic (6).			
Indications and interchangeability	Depressions (1-8,10-11), psychoasthenic states (9), enuresis in children (4), psychopathies, neuroses (3,4,7), withdrawal syndrome (6,11), Alzheimer's disease (6), neuralgia of the trigeminal nerve (5), nervous bulimia (7).			
Doctor and pharmacist, remember!	Antidepressants are incompatible with anticholinesterase agents, psychomotor stimulants, cholinomimetics, indirect-acting anticoagulants, sympatholytics, butadion, salicylates, heparin. MAO inhibitors are incompatible with sedatives, phenothiazines, M- and N-cholinoblockers, oral hypoglycemic drugs, narcotic analgesics, neuroleptics, tricyclic antidepressants, reserpine, lidocaine. Tricyclic antidepressants are incompatible with α- and β- adrenoblockers, antihistaminic drugs, MAO inhibitors, anticonvulsants, phenothiazines, salbutamol. Nialamide can cause "cheese" syndrome, that's why patients should avoid eating food containing tyramine during the treatment. Amitriptyline is incompatible with aminazine, reserpine, oral contraceptives. Before meals: 11. After meals: 2,4,5.			

ANALEPTICS AND PSYCHOMOTOR STIMULANTS

CLASSIFICATION	ANALEPTICS	PSYCHOMOTOR STIMULANTS
Drugs and their synonyms	1. Bemegrid 2. Niketamide (Cordiamine) 3. Sulfocamphocaine 4. Strychnine 5. Ethymizole 6. Cytisine (Cytitone)	7. Caffeine sodium benzoate 8. Amphethamine sulfate (Phenamine) 9. Mesocarb (Sydnocarb) 10. Pheprosidine h/chl. (Sydnophen)
Mechanism of action	Stimulation of respiratory and vasomotor centers.	Enhance and regulation of the excitation processes in the brain cortex; promotion of noradrenaline and dopamine release in CNS.
Pharmacological effects	"Awaking" effect (increase of BP, stimulation of respiration); antagonism with hypnotics, narcotic analgesics (1-6). Increase of myocardial contractility (2,3). Increase of smooth and skeletal muscles (convulsions) tone; increase of the acuity of vision, olfaction, hearing, taction (4). Increase of ACTH level; spasmolytic, anti-inflammatory, antiallergic effects (5).	Stimulation of the mental and physical activity (7-10); increase of BP (7,8); decrease of the fatigue and drowsiness (7-10); thymoleptic effect (9,10); cardiostimulative effect, decrease of the platelet aggregation, increase of gastric juice secretion (7); anorexigenic effect (8).
Indications and interchangeability	Acute intoxications by hypnotics and narcotic analgesics (1,3,5,7). Acute and chronic blood circulation disorders (2,6). Shock, collapse, asphyxia (2,3,5,6). Acute and chronic heart failure (3,4,7). Pareses, paralyses, atonia of stomach (4).	Decrease of mental and physical activity (7-10), migraine (7), enuresis in children (9); depression , narcolepsy (8,10); asthenic states (9,10).
Doctor and pharmacist, remember!	Analeptics are incompatible with adrenoblockers, antiarrhythmic drugs and MAO inhibitors. Cordiamine is incompatible with camphor. Psychomotor stimulants are incompatible with sympatholytics, oral hypoglycemic drugs, antidepressants, M-cholinoblockers, antiarrhythmic drugs. Caffeine is incompatible with aminazine, butamide, vitamin B_6, vitamin PP, digitoxin, streptocide, benzohexonium. Phenamine is distributed with the same limitations as narcotic analgesics are. Analeptics and psychomotor stimulants are taken in high doses in case of acute CNS suppression. Caffeine and strychnine are not prescribed for children up to 2 years old. Caffeine is an ingredient of Ascofen, Citramon, Caffethamine. After meals: 5,9.	

NOOTROPICS (COGNITIVE ENHANCERS) AND ADAPTOGENS

CLASSIFICATION	NOOTROPICS	ADAPTOGENS
Drugs and their synonyms	1. Pyracetam (Nootropil) 2. Gamma-aminobutyric acid (Aminalon) 3. Sodium oxybutyrate 4. Pyriditol (Encephabol) 5. Phenybute	6. Ginseng root tincture 7. Pantocrin 8. Saparal 9. Aralia tincture 10.Eleutherococcus extract 11.Rhodiola liquid extract 12.Citrullin (Stimol)
Mechanism of action	Improvement of ATP metabolism, increase of adenylate cyclase activity (1). Stimulation of metabolic processes, neurotransmission in CNS (4). Affinity to GABA-receptors (2,3,5).	Stimulation of protective mechanisms in organism (nonspecific resistance) (6-11). Participation in urea cycle, in Krebs' cycle; restoration of gluconeogenesis (12).
Pharmacological effects	Improvement of blood supply and energy processes in the brain, increase of CNS resistance to hypoxia and aggressive influences (1-5). Elimination of memory disorders, activation of intellectual and cognitive functions, stimulation of studying processes (1,2,4); antishock, central muscle relaxant, sedative effects (3); tranquilizing effect (5).	Stimulation of cardio-vascular system, increase of mental and physical activity and body resistance to unfavourable conditions (6-11). Elimination of ammonium ions, decrease of lactate level in blood, that is correction of metabolic processes (12).
Indications and interchangeability	Craniocerebral injuries, stroke, chronic cerebro-vascular disorders, atherosclerosis, children mental deficiency, memory disorders, psychoses, depressive states, senile dementia (1,2,4). Abstinence; intoxications with alcohol, narcotic analgesics, barbiturates (1). General anaesthesia, hypoxia, open-angle glaucoma (3). Migraine (4). Ménière's disease, motion sickness prophylaxis, neurotic states, stammering, children tics (5).	Asthenia (6-12), hypotension (6-9), overload, neurasthenia (6-8,11,12); infection diseases, recovery period after chronic diseases and traumas (6,7,11,12); increased drowsiness (6,10), vegetovascular dystonia (11), sexual asthenia (6,12), myocardial weakness (7).
Doctor and pharmacist, remember!	BP fluctuations are possible during the first days of aminalon intake. Ginseng drugs have well-defined seasonality of action: they are most effective in autumn and winter. Before meals: 1,2,6,7,9-11. During meals: 12. After meals: 4,5,8.	

DRUGS AFFECTING AFFERENT INNERVATION

CLASSIFICATION	LOCAL ANESTHE-TICS (see P. 22) EXPECTO-RANTS (see P. 21) LAXATIVES (see P. 51)	ASTRINGENT, COATING, ANTIACID AGENTS			ADSORBING AGENTS	VOLATILE OILS	BITTERS
Drugs and their synonyms		*Plant origin:* 1. Oak bark 2. St. John's wort herb 3. Sage leaf 4. Chamomile flowers 5. Bur-marigold herb 6. Alder collective fruit 7. Tannin	8. Tanalbin 9. Romasulan *Metal salts:* 10. Aluminium hydroxide 11. Alumag 12. Maalox 13. Aluminium phosphate (Phosphalugel)	14. Vicair 15. Vicalin 16. Bismuth subcitrate (De-nol) 17. Xeroform 18. Magnesium oxide 19. Anacid 20. Lead acetate	21. Activated charcoal (Carbolen) 22. Carbolong 23. Enterosgel	24. Menthol 25. Validol 26. Pepper mint 27. Mustard seed 28. Eucalyptus leaf	29. Wormwood herb 30. Dandelion root 31. Centaury herb 32. Sweet flag rhizome
Mechanism of action	Coating of the afferent nerve endings (10-13,19,23); neutralization of free HCl of the gastric juice (18,19); protein precipitation, forming the albuminates and decreasing the irritation of the afferent nerve endings of the GIT mucous membrane (1-9,14-17); adsorbtion of the chemical substances on their surface (12,13,19,21-23).					Irritation of afferent nerve endings, reflex dilation of arterioles and capillaries.	Irritation of gustatory receptors, reflex increase of gastric juice secretion.
Pharmacological effects	Coating (10-13,19,23), adsorbing (12,13,19,21-23), astringent (1-9,14,17,20), mild anti-inflammatory (3-5,9,14,15), antiacid (10-16,18-19), sudorific (4), cytoprotective, antibacterial (16).					Local irritant, distracting (24,27), anti-inflammatory (28), analgesic (24,26), spasmolytic (24,25), sedative (25,26), antiseptic (24,28).	Increase of appetite, improvement of digestion (29-32).
Indications and interchangeability	*Externally*: burns, bedsores, ulcers, intertrigos, inflammatory dermatoses (1-7,17,20); inflammatory diseases of the fauces, gingivitis, stomatitis (1-4,7,9). *Internally*: colites, enterites, gastrites, peptic ulcer (2,4,7-16,18-19); food intoxications (13,21-23), hyperphosphatemia (19), alkaloid intoxications (7,21-22).					Neuralgia (24,26), myalgia, arthralgia (24), migraine (24), respiratory organs diseases (24,27,28), angina pectoris (25), for sedation (25).	Decrease of appetite, hypoacid gastritis (29-32).
Doctor and pharmacist, remember!	Antiacids should not be combined with NSAIDs, antiulcer drugs, diuretics, antibiotics, isoniazide, fluoroquinolones and iron salts. Bitters should be taken in 15-20 minutes before meals. Before meals: 11,16,29-32. After meals: 12-15,18,19.						

EXPECTORANT, MUCOLYTIC, ANTITUSSIVE DRUGS

CLASSIFICATION	DRUGS STIMULATING EXPECTORATION (REFLEX AND RESORPTIVE * ACTING ONES)	MUCOLYTICS (MONOCOMPONENT, COMBINED* DRUGS)	ANTITUSSIVE DRUGS: CENTRAL ACTING (NARCOTIC AND NON-NARCOTIC*) ONES / PERIPHERAL ACTING** ONES
Drugs and their synonyms	1. Thermopsis herb 2. Milkwort root 3. Glycyrrhiza root 4. Inula root* 5. Ledum herb* 6. Menthoclar* 7. Althaea root* 8. Mucaltin* 9. Plantago leaf 10. Pertussin* 11. Therpin hydrate* 12. Sodium benzoate*	13. Ambroxol (Mucobron, Lasolvan) 14. Acetylcystein (ACC) 15. Bromhexin (Solvin) 16. Carbocystein (Bronchocode, Mucosol) 17. Mesna (Mistabrone) 18. Solutan* 19. Bronchicum* 20. Eucabal*	21. Codeine phosphate 22. Dimemorphan (Dastosine) 23. Dimenoxadol h/chl. (Estocin) 24. Glaucine (Glauvent)* 25. Butamirate (Sinecode)* 26. Oxeladin (Tusuprex)* 27. Prenoxdiasin (Libexin)** 28. Pronilid (Falimint)** 29. Pentoxyverin (Sedotussin)**
Mechanism of action	Reflex (1-12) and resorptive (4-8, 10-12) action on bronchioles and bronchial glands.	Stimulation of surfactant formation (13,15); activation of hydrolizing enzymes, decrease of sputum viscosity, improvement of sputum transport (13-20).	Suppression of cough center (21-26). Block of afferent receptors of trachea, bronchioles, lungs (27-29).
Pharmacological effects	Expectorant (1-12); mucolytic (4-8, 10-12), coating (7), mild anti-inflammatory (2,4,6).	Mucolytic, expectorant (13-20), mild antitussive (13); broncholytic, antibacterial, anti-inflammatory (19,20).	Antitussive (21-29), mild local anesthetic (27-29), anti-inflammatory (25,27), expectorant (25), broncholytic (25,27,29), analgesic (21,23), mild sedative (22), adrenolytic (24), disinfectant (28).
Indications and interchangeability	As a part of the complex therapy of the respiratory tract inflammatory diseases (acute and chronic tracheites, bronchites and pneumonias) (1-29). Investigation of antitoxic function of liver (11).		
Doctor and pharmacist, remember!	Acetylcystein solution should not be combined with solutions of antibiotics in the same syringe. Penicillins, cephalosporins and tetracyclins should be taken not earlier than in 2 hours after administration of acetylcystein. Codeine phosphate should not be taken together with methotrexate. The following drugs (1-5, 7-11) are contraindicated in gastric diseases. Ambroxol, bromhexin are incompatible with alkaline solutions; with drugs containing codeine. Solutan contains ephedrin and can cause tachyarrhythmia. Before meals: 4. After meals: 7,18, 24.		

LOCAL ANESTHETICS

CLASSIFICATION	PARA-AMINOBENZOIC ACID (PABA) ESTERS	BENZOFUROCARBOXYLIC ACID ESTERS	SUBSTITUTED ACETANYLIDE AMIDES	COMBINED AGENTS
Drugs and their synonyms	1. Procaine (Novocaine) 2. Benzocaine (Anesthesin) 3. Tetracaine h/chl. (Dicaine)	4. Benzofurocaine	5. Articaine (Ultracaine) 6. Lidocaine (Xylocaine) 7. Bupivacaine (Marcaine) 8. Trimecaine h/chl. 9. Bumecaine h/chl. (Pyromecaine)	10. Lidocaton (Lidocaine+Epinephrine) 11. Ultracaine D-S (Articaine+Epinephrine) 12. Pavesthesin (Anesthesin+Papaverine h/chl)
Mechanism of action	Decrease of the membrane permeability for Na^+ and K^+ ions, prevention of the action potential formation; inhibition of the neurotransmitters release; change of the surface tension of membrane phospholipids.			
Pharmacological effects	Local anesthetic (1-12), antiarrhythmic (1,5,6,9,10,11), hypotensive (1,5,6,10-12), central analgesic (4), spasmolytic (12).			
Indications and interchangeability	Infiltration (1,4-8,10,11), terminal (2,3,6,9,10), conduction (1,5-8,10,11), spinal (1,5,7,8,11), lumbal block (5,11), paracervical, caudal, intercostal, epidural (7), peridural (8) anesthesia; tachyarrhythmia (6,9,10), gastralgia, spasms of intestine and stomach smooth muscles (12); hepatic and renal colics, peritonitis, pleuritis, pancreatitis (4).			
Doctor and pharmacist, remember!	Local anesthetics are incompatible with M-cholinomimetics, cardiac glycosides, vasodilators (papaverine, theophylline, dibazol), β-adrenoblockers, quinidine, anticholinesterase agents. Novocaine is incompatible with sulfonamides. It is forbidden to mix benzofurocaine solution with sodium thiopental and other solutions with alkaline reaction. Lidocaine can cause hypotension, bradycardia. Convulsions and psychomotor excitement are possible in case of lidocaine overdosage. PABA esters should be taken carefully by patients with allergy to sulfonamides. When using simultaneously bupivacaine and oxytocin or ergotamine, a sharp rise of BP and stroke development are possible. While using bupivacaine one should avoid the prolonged contact with the metal parts of the syringe.			

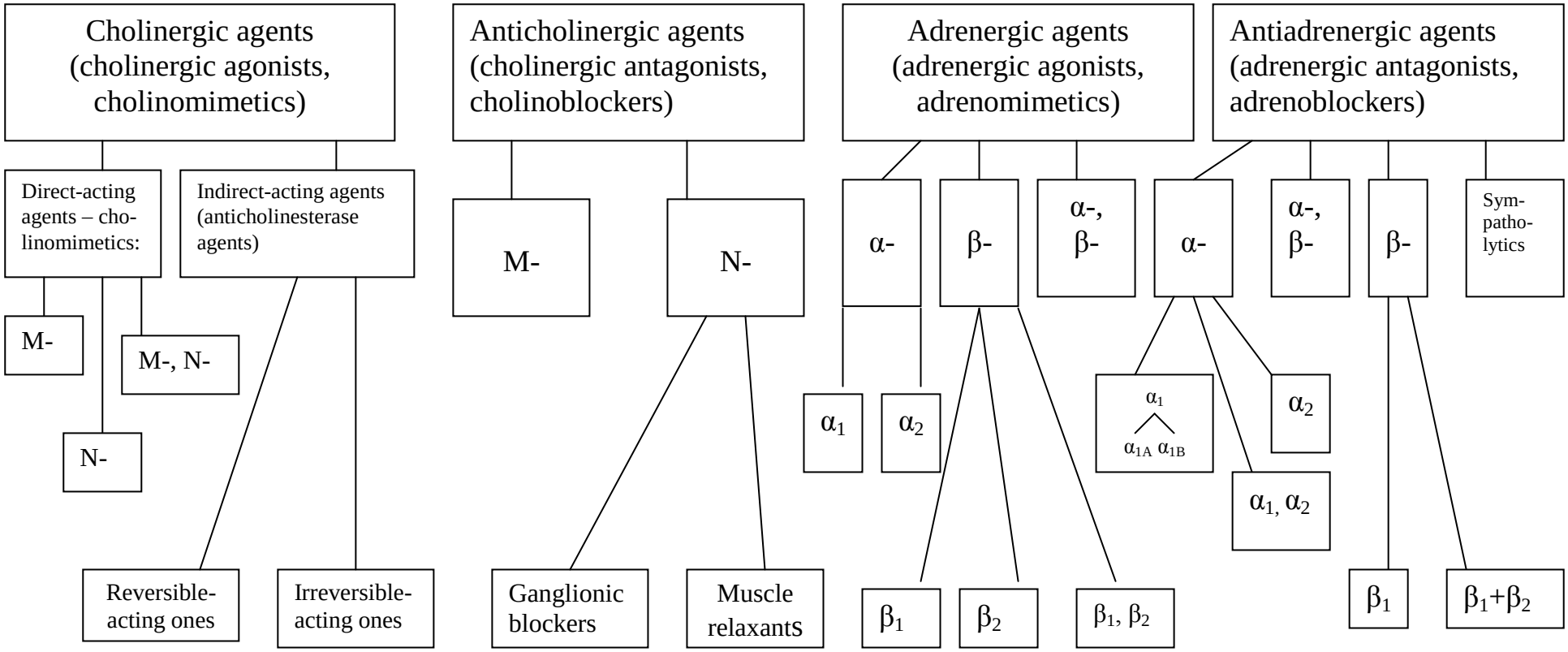
DRUGS FOR TREATMENT BRONCHIAL ASTHMA

CLASSIFICATION	$\beta_1+\beta_2$-ADRENOMIMETICS; β_2-ADRENOMIMETICS *; $\alpha+\beta$-ADRENOMIMETICS **			PHOSPHODI-ESTERASE INHIBITORS	M-CHOLINO-BLOCKERS	GANGLIONIC BLOCKERS	THROMBOXANE-SYNTHETASE INHIBITORS
Drugs and their synonyms	1. Orciprenaline sulfate 2. Isoprenaline 3. Clenbuterol* 4. Salmeterol* 5. Fenoterol* 6. Epinephrine** (Adrenaline hydrotartrate)			7. Theophylline (Retaphyll) 8. Aminophylline (Euphylline)	9. Ipratropium bromide (Atrovent) 10.Oxytropium bromide (Ventilat)	11.Hexamethonium benzosulfonate (Benzohexonium)	12.Ozagrel (Domenan)
Mechanism of action	Stimulation of $\beta_1+\beta_2$-adreno-ceptors.	Stimulation of β_2-adrenoceptors.	Stimulation of $\alpha+\beta$-adrenoceptors.	Block of phosphodiesterase → increase of cAMP level → decrease of smooth muscles tone.	Block of M-cho-linoceptors → decrease of parasympathetic nervous system influence on bronchi.	Block of N-cho-linoceptors of the autonomic ganglia.	Selective inhibition of thromboxane A_2 synthesis → decrease of thromboxane influence on bronchial smooth muscles.
Pharmacological effects	Antiasthmatic, bronchodilative (1-12); diuretic (7), tocolytic (1-5), vasodilative (7,8,11).						
Indications and interchangeability	Bronchial asthma (1-12), asthmatic status (6,8), chronic bronchitis with asthmatic component (1-5,9), anaphylactic shock (6), spasms of peripheral vessels (8,11), cerebral circulation disorders (8), preterm labour (4,5).						
Doctor and pharmacist, remember!	$\alpha+\beta$-adrenomimetics are incompatible with oral hypoglycemic drugs, indirect-acting anticoagulants, sedatives, cardiac glycosides, sympatholytics, sulfonamides, diuretics, insulins, muscle relaxants, other broncholytics from adrenomimetics, MAO inhibitors, β-adrenoblockers, calcium-containing drugs, vitamin D, mineral corticoids. M-cholinoblockers are incompatible with psychomotor stimulants, MAO inhibitors, emetic agents. Adrenaline is incompatible with aminazine, penicillin, phenobarbital, aminophylline, seduxen, sodium bromide, digitoxin, dicumarin, dibazol, haloperidol. While using theophylline and aminophylline with fluoroquinolones their doses are decreased up to ¼ from recommended dose. Aminophylline mustn't be used with glucose solution and xantine derivatives; it is incompatible with vitamins C, B_6, PP, prednisolone, dibazol. Isadrin is incompatible with butamide, sodium barbital, digitoxin, dicumarin, streptocide, seduxen, proserin, diphenine. Salmeterol is prescribed only to grown-ups. Theophylline, aminophylline, theophedrine N should be used in the morning or in day-time in order to prevent sleeping disorders. One should use membrane stabilizers, β_2-adrenomimetics or their combination if there are bronchial attacks less then 1 time a week with short-time exacerbations. β_2-adrenomimetics, inhalation glucocorticoids, membrane stabilizers and combined drugs are used in case of long-lasting bronchial asthma (attacks more often then 1 time a week, night attacks are 2 times a week). In case of medium-severe bronchial asthma (everyday attacks, night symptoms more often then 1 time a week) inhalation or oral glucocorticoids (in doses 800-1000 mcg/day), prolonged β_2-adrenomimetics, phosphodiesterase inhibitors, inhalation M-cholinoblockers are used. It is rational to use membrane stabilizers, inhalation glucocorticoids, antihistamine drugs for bronchial asthma prophylaxis.						

DRUGS FOR TREATMENT BRONCHIAL ASTHMA (CONTINUATION).

CLASSIFICATION	LEUKOTRIENE D_4-RECEPTORS ANTAGONISTS	ANTIHISTAMINE AND ANTITRANSMITTER* DRUGS	GLUCOCORTICOIDS	MAST CELL MEMBRANES STABILIZERS	COMBINED DRUGS
Drugs and their synonyms	13. Sodium montelucast (Singular) 14. Zafirlucast (Acolat)	15. Loratadin (Claritin) 16. Astemisol 17. Phenspirid h/chl.* (Erespal)	18. Budesonid (Pulmicort) 19. Flunisolid (Inhacort) 20. Beclomethasone (Beclomet)	21. Sodium cromoglycate (Intal) 22. Sodium nedocromyl (Tayled) 23. Ketotifen (Zaditen)	24. Berodual 25. Ditec 26. Intal plus 27. Theophedrine N
Mechanism of action	Competitive antagonism with C_4, D_4, E_4 leukotrienes.	Block of H_1-histamine receptors (15-17), decrease of cytokines production (17).	Inhibition of formation and secretion of leukotrienes, serotonin, prostaglandins. Inhibition of cytokines release from macrophages. Decrease of tissue receptors sensitivity to inflammation and allergy transmitters.	Stabilization of mast cell membranes → decrease of histamine release; block of Ca^{2+}-canals in mast cells.	Stimulation of bronchial β_2-adrenoceptors (24-27), block of bronchial M-cholinoceptors (24), stabilization of mast cell membranes (25,26).
Pharmacological effects	Antiasthmatic, antiallergic (13-27); bronchodilative (24-27), anti-inflammatory (13-14), immunosuppressive (18-20).				
Indications and interchangeability	Bronchial asthma (13-27), cold, physical over-exertion, aspirin asthma (13,14,22,23), hormone-dependent bronchial asthma (18-20); prophylaxis of atopic bronchial asthma attacks (15-17,21-26), pollinosis (15-17,21,23), asthmatic status (20).				
Doctor and pharmacist, remember!	Combined drugs are used for rapid relief of atopic asthma symptoms (ditec, intal plus, berodual). Bromhexin and ambroxol shouldn't be inhalated in one mixture with intal solution. Ketotifen in combination with oral hypoglycemic drugs causes thrombocytopenia and potentiates effects of CNS depressants. Before meals: 13,17. After meals: 23.				

CLASSIFICATION OF THE DRUGS AFFECTING THE EFFERENT PART OF THE NERVOUS SYSTEM



Doctor and pharmacist, remember!	While taking the cholinergic drugs, there is more parasympathetic innervation in the organism, while M-cholinoblockers or adrenergic agents – there's sympathetic. The site of action for all drugs affecting peripheral neurotransmitter processes is postsynaptic membrane, except sympatholytics, ephedrine, clonidine (presynaptic membrane).

CHOLINERGIC AGONISTS

CLASSIFICATION	DIRECT-ACTING CHOLINOMIMETICS			INDIRECT-ACTING CHOLINOMIMETICS (ANTICHOLINESTERASE DRUGS)
	M-, N-CHOLINOMIMETICS	M-CHOLINOMIMETICS	N-CHOLINOMIMETICS	REVERSIBLE- AND IRREVERSIBLE*- ACTING ONES
Drugs and their synonyms	1.Acetylcholine 2.Carbachol	3.Pilocarpine 4.Aceclidine	5.Cytitone 6. Lobeline	7. Physostigmine (Eserin) 8. Halantamine (Nivaline) 9. Neostigmine (Proserin) 10. Ambenonium h/chl. (Oxazyl) 11. Pyridostigmine bromide (Calimine) 12. Distigmine bromide (Ubretid) 13. Armine*
Mechanism of action	Stimulation of cholinoceptors.			Inhibition of acetylcholinesterase.
Pharmacological effects	Decrease of intraocular pressure (2-4,7,9,13); stimulation of respiration (5-6); increase of tone of intestine, urinary bladder, uterus, bronchi (1-4,7-12); improvement of neuromuscular conductivity (7-12); dilation of peripheral vessels (1,7-11).			
Indications and interchangeability	Glaucoma (2-4,7,9,13), radiodiagnosis of GIT diseases (1,4,8); atonia of intestine and urinary bladder (1,2,4,7-9,12); pareses, paralyses, myasthenia (7-12); weak uterine contractions (4,9); intoxications by muscle relaxants, M-cholinoblockers (7-9); endarteritis (1); reflex respiratory stoppage (5,6).			
Doctor and pharmacist, remember!	Cholinomimetics are incompatible with antiparkinsonian drugs, anticonvulsants, antidepressants, antiarrhythmic drugs, neuroleptics, antihistaminic drugs, β-adrenoblockers, glucocorticoids and antibiotics-aminoglycosides. M–cholinomimetics are incompatible with antihistaminic drugs, local anesthetics. Anticholinesterase drugs are incompatible with local anesthetics, antiparkinsonian drugs, neuroleptics, anticonvulsants, tricyclic antidepressants, antiarrhythmics, β-adrenoblockers. Acetylcholine is incompatible with mesatone, lidocaine. Proserin is incompatible with trasicor, diphenine, isadrin. Acetylcholine isn't injected intravenously. Absence of the effect of reversible-acting anticholinesterase drugs can be explained by their overdose. Before meals: 9,12. After meals: 10.			

M-CHOLINOBLOCKERS

<table>
<tr><td>Drugs and their synonyms</td><td colspan="5">1. Atropine sulfate
2. Homatropine hydrobromide
3. Scopolamine h/chl.
4. Platiphylline hydrotartrate
5. Adiphenine (Spasmolytin)
6. Metacine iodide
7. Pirenzepine (Gastrozepine)
8. Ipratropium bromide (Atrovent)
9. Tropicamide (Mydrium)
10. Butylscopolamine bromide (Buscopan)
11. Aprophen
12. Besalol (Belladonna extract + phenylsalicylate)</td></tr>
<tr><td>Mechanism of action</td><td colspan="5">Block of M-cholinoceptors.</td></tr>
<tr><td>Pharmacological effects</td><td>Dilatation of pupil (mydriasis), increase of intraocular pressure (1-4,9,12).</td><td>Inhibition of exocrine glands secretion (1-12).</td><td>Spasmolytic (1-12), antiseptic (12) effects.</td><td>Tachycardia (1-5).</td><td>Central anticholinergic effect (1-5,11,12).</td></tr>
<tr><td>Indications and interchangeability</td><td>Diagnosis of eye diseases (1-4,9), inflammatory eye diseases (1,3), selection of lenses (1,2,4,9).</td><td>Peptic ulcer (1,4-7,10-12); premedication (1,3,6).</td><td>Bronchial asthma (1,3,4,6,8); intestinal, hepatic (1,3-6,10-12), renal (1,3-6,10,11) colics; threat of preterm labour (6); brain and heart vessels spasms (11); endarteritis (5,11).</td><td>Heart stoppage, bradycardia; intoxication by cholinomimetics and anticholinesterase drugs (1).</td><td>Motion sickness, parkinsonism (3).</td></tr>
<tr><td>Doctor and pharmacist, remember!</td><td colspan="5">M-cholinoblockers are incompatible with psychomotor stimulants, MAO inhibitors, emetics, caffeine, digitalis drugs, clonidine.
Atropine sulfate is incompatible with barbital (hypnotics), morphine, magnesium sulfate, acetylsalicylic acid, dibazol, acetylcholine.
M-cholinoblockers are contraindicated in glaucoma.
The concentration of atropine sulfate solution for injections is 0,1%, as eye drops - 1%.
Adiphenine causes dizziness and sense of drunkenness that’s why it is contraindicated to drivers and people performing a rapid work.
Before meals: 1,4,6,7,10.
After meals: 5.</td></tr>
</table>

N – CHOLINOBLOCKERS

CLASSIFICATION	GANGLIONIC BLOCKERS	MUSCLE RELAXANTS (DEPOLARIZING* AND NONDEPOLARIZING AGENTS)
Drugs and their synonyms	1. Hexamethonium benzosulfonate (Benzohexonium) 2. Azamethonium bromide (Pentamine) 3. Dimecolin iodide (Dimecolin) 4. Trepirium iodide (Hygronium) 5. Pempydine tosilate (Pyrilen) 6. Pachycarpine hydroiodide	7. Suxamethonium iodide* (Dithilin) 8. Vecuronium bromide (Norcuron) 9. Diplacin 10. Tubocurarine chloride 11. Mellictin 12. Pipecuronium bromide (Arduan)
Mechanism of action	Block of N-cholinoceptors of the autonomic ganglia. Pharmacological denervation of organs (1-6).	Competitive antagonism with acetylcholine (8-12). Stable depolarization of postsynaptic membrane (7).
Pharmacological effects	Peripheral vessels dilatation, decrease of BP; decrease of smooth muscles tone; decrease of exocrine glands secretion (1-6). Increase of uterine tone (6).	Total skeletal muscles relaxation (7-12).
Indications and interchangeability	Hypertension, hypertensive crisis (1-6); edema of brain, lungs (2); endarteritis (1-3,5,6); controlled hypotension (1,2,4); peptic ulcer (1,3,5); bronchial asthma (1,2); colics (2,3); labor induction (6); cholecystitis (3); eclampsia (2,4).	Controlled respiration and relaxation during the general anesthesia, alleviation of the bone fragments reposition, reduction of dislocations (7-12); hyperkinesia (11); intubation of trachea (7,9,11); eyeball dehydratation (9); parkinsonism (11).
Doctor and pharmacist, remember!	N-cholinoblockers are incompatible with MAO inhibitors, anticholinesterase drugs. N-cholinoblockers shouldn't be mixed with barbiturates solutions in the same syringe. Muscle relaxants are incompatible with adrenomimetics, heparine, strophanthin, adrenal corticoids, narcotic analgesics. Benzohexonium is incompatible with mesatone, caffeine, dibazol. Tubocurarine chloride is incompatible with promedol. All ganglionic blockers can cause orthostatic collapse. Benzohexonium causes tolerance. Ganglionic blockers are contraindicated to patients with acute myocardial infarction, marked hypotension, shock, liver and kidney dysfunctions, thromboses, degenerative changes in CNS. All nondepolarizing muscle relaxants are histamine inductors, that's why they can cause pseudoallergic reactions, especially, bronchospasm. Before meals: 1,3,6.	

ADRENERGIC AGONISTS

CLASSIFICATION	α_1-ADRENOMIMETICS	α_2-ADRENO-MIMETICS	β_1-ADRENOMIMETICS * β_2-ADRENOMIMETICS		$\beta_1+\beta_2$-ADRENO-MIMETICS	$\alpha_1,\alpha_2,\beta_1,\beta_2$-ADRENOMIMETICS, DOPAMINE RECEPTORS STIMULATOR**
Drugs and their synonyms	1. Norepinephrine (Noradrenaline) 2. Phenylephrine h/chl. (Mesatone) 3. Xylometazoline (Halazoline) 4. Oxymetazoline (Nasol) 5. Tetrizoline (Visine, Tisine)	6. Guanfacin (Estulik) 7. Clonidine (Clofeline)	8. Dobutamine* (Dobutrex) 9. Orciprenaline sulfate (Asthmopent) 10.Fenoterol (Berotek) 11.Salbutamol (Ventoline) 12.Terbutaline (Brycanyl) 13.Clenbuterol (Spyropent) 14.Salmeterol (Salmeter)		15. Isoprenaline (Isadrin)	16. Epinephrine (Adrenaline) 17. Ephedrine h/chl. 18. Dopamine**
Mechanism of action	Stimulation of α_1-adrenoceptors in vessels.	Stimulation of α_2-adrenoceptors in vasomotor center.	Stimulation of β_1-adrenoceptors in myocardium.	Stimulation of β_2-adrenoceptors in bronchi and uterus.	Stimulation of β_1-, β_2-adrenoceptors in bronchi and myocardium.	Stimulation of α_1-, α_2-, β_1-, β_2-adrenoceptors (16-18); stimulation of dopamine receptors (18).
Pharmacological effects	Vasoconstriction, increase of BP.	Inhibition of the vasoconstrictive impulses from the CNS (hypotensive effect).	Cardiostimulative effect.	Broncholytic, tocolytic effects.	Cardiostimulative, broncholytic effects.	Cardiostimulative, hypertensive (16-18); broncholytic (16,17), diuretic (18) effects. Activation of glycogenolysis and lipolysis (16,17).
Indications and interchangeability	Shock, collapse (1,2), rhinitis (3-5), hypotension (2), conjunctivitis (5).	Hypertension (6,7).	Heart stoppage (8,9); cardiogenic shock, bradyarrhythmia, intoxication by cardiac glycosides (9).	Threat of preterm labour (10-12); chronic asthmatic bronchitis and bronchial asthma (9-14).	Cardiogenic shock, bradyarrhythmia, bronchial asthma, chronic asthmatic bronchitis, emphysema of lungs (15).	Heart stoppage, anaphylactic shock, bronchial asthma, hypoglycemic coma, enuresis, prolonging of local anesthetics effect (16,17); open-angle glaucoma (16).
Doctor and pharmacist, remember!	α_1 – adrenomimetics are incompatible with oral hypoglycemic agents, indirect-acting anticoagulants, sedatives, sympathomimetics, sulfonamides, cardiac glycosides. β-adrenomimetics are incompatible with antiarrhythmics, oral hypoglycemic agents, indirect-acting anticoagulants, sedatives, anticonvulsants, sulfonamides, cardiac glycosides, other broncholytics among the adrenomimetics, MAO inhibitors, calcium-containing drugs, vitamin D, mineral corticoids. α+β-adrenomimetics are incompatible with oral hypoglycemic agents, indirect-acting anticoagulants, sedatives, cardiac glycosides, sympatholytics, sulfonamides, diuretics, insulins, myorelaxants, other broncholytics among the adrenomimetics, MAO inhibitors, calcium-containing drugs, β-adrenoblockers, vitamin D, mineral corticoids. Adrenaline is incompatible with aminazine, penicillin, euphyllin, phenobarbitals, seduxen, sodium bromide, digitoxin, dicoumarin, dibazol, haloperidol. Mesatone is incompatible with acetylcholine, butamide, benzohexonium, phenobarbital, digitoxin, dicoumarin, magnesium sulfate, streptocide, seduxen, sodium bromide. Isadrin is incompatible with butamide, phenobarbital, digitoxin, dicoumarin, streptocide, seduxen, diphenine, proserin. Halazoline isn't prescribed for treating chronic rhinitis. Tetrizoline can increase IOP, BP. Its prolonged administration can cause the secondary edema of the nasal mucous membrane. Dobutamine solution is incompatible with 5% sodium bicarbonate solution and other alkaline solutions in the same syringe. Ephedrine isn't recommended before going to bed. Ephedrine is an ingredient of theophedrine, solutan, ephatin. Ephedrine causes addiction.					

ADRENERGIC ANTAGONISTS

CLASSIFICATION	ADRENOBLOCKERS					SYMPATHO-LYTICS
	α_1- and α_2*-ADRENOBLOCKERS	$\alpha_1+\alpha_2$-ADRENOBLOCKERS	β_1-ADRENOBLOCKERS	$\beta_1+\beta_2$-ADRENOBLOCKERS	$\alpha+\beta$-ADRENOBLOCKERS	
Drugs and their synonyms	1. Yohimbine* 2. Tamsulosine (Omnik) 3. Terazosine (Cornam) 4. Prazosine (Adversuten) 5. Doxazosine (Cardura)	6. Pirroxan 7. Phentolamine 8. Dihydroergotamine mesilate (Dihydergot) 9. Nicergoline (Sermion)	10.Metoprolol (Corvitol) 11.Atenolol 12.Acebutolol (Sectral) 13.Talinolol (Cordanum)	14.Propranolol (Anapriline) 15.Oxprenolol (Trasicor) 16.Sotalol (Hylucor) 17.Pindolol (Visken) 18.Nadolol (Corgard)	19.Labetalol (Albetol) 20.Proxodolol	21.Octadine (Isobarin) 22.Reserpine
Mechanism of action	Block of α_1- or α_2*-adrenoceptors.	Block of α_1-, α_2-adrenoceptors.	Block of β_1-adrenoceptors.	Block of β_1-, β_2-adrenoceptors.	Block of α-, β-adrenoceptors.	Decrease of noradrenaline content in presynaptic membrane.
Pharmacological effects	Hypotensive effect, peripheral vessels dilation (3-9,19-22); decrease of cardiac output (10-18); antianginal, antiarrhythmic effects (10-20); improvement of blood supply of the small pelvis organs, increase of potency (1); decrease of smooth muscles tone of urethra prostatic part (2,5); decrease of intraocular pressure (20).					
Indications and interchangeability	Hypertension (3-15,17-22); IHD, tachyarrhythmia (10-18,20); hypertensive crisis (6,19,20); chronic heart failure (3); psychogenic impotency, urinary bladder atonia (1); prostate adenoma (2-5); endarteritis (4-7); migraine (8,9); pheochromocytoma diagnostics (7); morphine and alcoholic abstinence (6); glaucoma (20); motion sickness; skin itch (6).					
Doctor and pharmacist, remember!	α-adrenoblockers are incompatible with tricyclic antidepressants. β-adrenoblockers are incompatible with narcotic analgesics, anticholinesterase agents, tricyclic antidepressants. $\alpha+\beta$-adrenoblockers are incompatible with cardiac glycosides. Sympatholytics are incompatible with MAO inhibitors, adrenal corticoids, tricyclic antidepressants, cardiac glycosides, psychomotor stimulants. Acebutolol is incompatible with antiarrhythmic drugs, quinidine, halogen-containing general anesthetics; drugs, containing aluminium hydroxide. Propranolol mustn't be used with tranquilizers, neuroleptics, ergotamine simultaneously. Oxprenolol is incompatible with digitoxin, proserin, promedol, streptocide, mesatone, caffeine, hydrochloric acid, isadrin, diphenine. Adrenoblockers and sympatholytics can cause orthostatic collapse. Pirroxan decreases itch, abstinence and motion sickness symptoms. "Abolition" syndrome is characteristic for anapriline. Hypotensive effect of octadine develops after 2-4 days. Before meals: 9. After meals: 2,7,10,22.					

HORMONAL DRUGS OF HYPOPHYSIS AND HYPOTHALAMUS

CLASSIFICATION	DRUGS, INFLUENCING THE HYPOPHYSIS HORMONES SECRETION		DRUGS OF HYPOPHYSIS HORMONES	
	HORMONE SECRETION INDUCTORS (RELEASING FACTORS)	HORMONE SECRETION INHIBITORS	ANTERIOR HYPOPHYSIS HORMONES	MIDDLE* AND POSTERIOR HYPOPHYSIS HORMONES
Drugs and their synonyms	1. Growth hormone-releasing factor (Somatoliberin) 2. Prothyrelin 3. Gonadorelin	4. Octreotide (Sandostatin) 5. Danazol (Danol) 6. Bromocriptine (Parlodel)	7. Corticotropin (ACTH) 8. Somatotropin (Norditropin) 9. Chorionic gonadotropin (Choriogonine) 10. Menopausal gonadotropin 11. Lactin	12. Intermedin* 13. Oxytocin 14. Pituitrin 15. Adiurecrine 16. Desmopressin
Pharmacological effects	Stimulation of anterior hypophysis hormones secretion (1-3). Stimulation of peripheral endocrine glands secretion (7-11). Anti-inflammatory, antiallergic, immunosuppressive effects (7). Growth and body weight increase, anabolic effect (8). Promotion of ovaries development, follicles maturity; stimulation of spermatogenesis (10). Promotion of follicle transformation into yellow body (9). Stimulation of lactation during afterbirth period (11). Inhibition of growth hormone release by adenohypophysis in acromegalia patients; decrease of gastric juice, insulin secretion (4). Suppression of gonadotropins secretion (5). Decrease of prolactin and STH secretion by anterior hypophysis (6). Improvement of vision acuity, eyes adaptation to darkness (12). Stimulation of uterine contractions (13,14). Antidiuretic effect (15,16).			
Indications and interchangeability	Diagnostics of endocrinopathies (1-3), secondary hypofunction of adrenal gland cortex, “abolition” syndrome (7); hypophysal nanism (8), hypogonadism in men and women, sterility (9,10); hypogalactia (11), acromegalia, endocrine tumors of gastro-entero-pancreatic system (4); benign tumors of mammary gland (5), menstrual cycle disorders, female sterility, acromegalia (6); degenerative changes of retina (12), labour induction (13,14), insipid diabetes, enuresis (15,16); endometriosis (5).			
Doctor and pharmacist, remember!	Danazol is not prescribed with drugs, containing estrogen and progesterone. Danazol potentiates the effects of anticoagulants. It is not recommended to use bromocriptine simultaneously with ergot drugs, erythromycin, butyrophenones, phenothiazines. ACTH is incompatible with anticoagulants. Oxytocin should be carefully used with adrenomimetics. Somatotropin, chorionic gonadotropin, ACTH are contraindicated for patients with oncological diseases. During meals: 6.			

INSULINS

CLASSIFICATION	HUMAN ORIGIN INSULINS			ANIMAL ORIGIN INSULINS				
				MONOCOMPONENT			MONOPEAK	
	SHORT-TERM ACTING ONES	MEDIUM-TERM ACTING ONES	LONG-TERM ACTING ONES	SHORT-TERM ACTING ONES	MEDIUM-TERM ACTING ONES	LONG-TERM ACTING ONES	SHORT-TERM ACTING ONES	LONG-TERM ACTING ONES
Drugs and their synonyms	1. Lispro-insulin (Humalog) 2. Human insulin for injections (Actrapid)	3. Human isophane insulin suspension (Humulin) 4. Mixed human in-sulin-zinc suspension (Monotard)	5. Crystalline human insulin-zinc suspension (Ultratard)	6. Neutral insulin for injections (Monoinsulin MK)	7. Insulin aminoquinurid (B-insulin-S) 8. Amorphous insulin-zinc suspension (Insulin – semilente)	9. Crystalline insulin-zinc suspension (Ultralente)	10. Neutral soluble insulin (Actrapid)	11. Amino-quinurid insulin (B-insulin)
Mechanism of action	Regulation of carbohydrate metabolism, promotion of glucose transport inside the cells and its assimilation by tissues; increase of glycogenesis, proteins and fatty acids synthesis.							
Pharmacological effect	HYPOGLYCEMIC EFFECT (1-11).							
Indications and interchangeability	DIABETES MELLITUS (1-11), HYPERGLYCEMIC COMA (2,6,9).							
Doctor and pharmacist, remember!	The choice of insulin, dose selection and the drug changing are carried out under a strict doctor's control. The hypoglycemic effect of insulins may be increased by α-adrenoblockers, non-selective β-adrenoblockers, tetracyclines, methyldopa, MAO inhibitors;and decreased by oral contraceptives, saluretics, nicotinic acid, isoniazide, glucocorticoids, heparin, tricyclic antidepressants. The use of clonidine, reserpine and salicylates can cause both decrease and increase of insulin effects. The simultaneous intake of β-adrenoblockers, reserpine, clonidine can disguise the hypoglycemic symptoms. Before meals: 1,2,6,10.							

ORAL HYPOGLYCEMIC DRUGS

CLASSIFICATION	SULFONYLUREA DERIVATIVES		BIGUANIDE DERIVATIVES	OTHER DRUGS
	1st GENERATION	2nd GENERATION		
Drugs and their synonyms	1. Carbutamide (Bucarban) 2. Tolbutamide (Butamide)	3. Glibenclamide (Maninyl) 4. Gliquidone (Glurenorm) 5. Gliclaside (Diabetone)	6. Metformin (Siofor) 7. Buformin (Glibutide)	8. Acarbose (Glucobay) 9. Isodibute
Mechanism of action	Stimulation of endogenic insulin production by β-cells of the pancreas.		Suppression of gluconeogenesis in liver, stimulation of lipolysis, increase of glucose utilization by peripheral tissues and decrease of glucose absorption in the gastrointestinal tract.	
Pharmacological effects	Hypoglycemic (1-9), hypolipidemic (3,6,7), fibrinolytic (6,7), anorexigenic (6,7).			
Indications and interchangeability	Type II diabetes (1-9). Type I diabetes in patients treated with insulin and suffering obesity (3,6,7). Combined therapy of type I diabetes (8).			
Doctor and pharmacist, remember!	Oral hypoglycemic drugs are incompatible with α-adrenomimetics, MAO inhibitors, psychomotor stimulants, hormones of adrenal gland cortex, β-adrenomimetics, antiarrhythmic drugs. Sulfonylurea derivatives are incompatible with salicylates, tetracycline, indirect-acting anticoagulants, butadion, levomycetin. They are carefully used together with β-adrenoblockers. Tolbutamide is incompatible with mesatone, caffeine, isadrin. Acarbose effect decreases while taking together with cholestiramine, enzymatic agents, antacids, intestinal adsorbents. Taking of sulfonylurea derivatives causes alcohol intolerance. Before meals: 3,5,8. After meals: 6. During meals: 4,6,7.			

THYROID AND PARATHYROID HORMONAL DRUGS

CLASSIFICATION	THYROID DRUGS (MONOCOMPONENT, COMBINED* ONES)	ANTITHYROID DRUGS (THYREOSTATICS)	PARATHYROID* DRUGS AND AGENTS AFFECTING CALCIUM METABOLISM
Drugs and their synonyms	1. Thyroidine 2. Sodium-levothyroxine (L-thyroxine) 3. Liothyronine (Triiodothyronine) 4. Thyreocomb* 5. Thyreotom*	6. Thiamazole (Merkazolyl) 7. Propylthiouracil	8. Dihydrotachisterol (Tachistine) 9. Salmonis synthetic calcitonin (Miacalcik) 10. Calcitonin (Calcitrin) 11. Parathyroidine*
Pharmacological effects	Increase of basal metabolism and energetic processes; stimulation of tissues growth and differentiation; increase of oxygen consumption by tissues.	Inhibition of hormones (thyroxine and triiodothyronine) synthesis. Inhibition of basal metabolism.	Regulation of calcium and phosphorus metabolism, increase of their content in blood (8,11). Inhibition of bone resorption, increase of calcium and phosphorus content in bones (9,10).
Indications and interchangeability	Hypothyroidism, myxedema, endemic goiter (1-5). Obesity (1). Cretinism (1,2). Thyroid cancer (1-3).	Hyperthyroidism (6,7).	Hypoparathyroidism, tetany, spasmophilia (8,11). Osteoporosis, hypercalcemia, slow fractures union (9,10). Posttraumatic bone atrophy (9-11).
Doctor and pharmacist, remember!	Thyroid drugs are incompatible with antibiotics. Dihydrotachisterol isn't recommended to combine with calcium-containing drugs, parathyroid drugs, vitamins from D group. Levothyroxine and triiodothyronine effect can be increased by interaction with salicylates, furosemide; and decreased – with carbamazepine, rifampicin. Levothyroxine enforces effects of indirect-acting anticoagulants. Thiamazole, propylthiouracil shouldn't be prescribed simultaneously with drugs, suppressing leukopoiesis. Before meals: 2,5. After meals: 1,6.		

ADRENOCORTICOIDS AND THEIR SYNTHETIC ANALOGUES

CLASSIFICATION	GLUCOCORTICOIDS (GC)				MINERAL CORTICOIDS (MC)
	GC FOR ORAL USE AND INJECTIONS	GC FOR INHALATIONS	GC FOR EXTERNAL USE	COMBINED GC	
Drugs and their synonyms	1. Dexamethasone 2. Triamcinolone 3. Mazipredone (Prednisolone) 4. Methylprednisolone	5. Budesonide (Pulmicort) 6. Beclometasone (Beclomet) 7. Flunisolide (Inhacort)	8. Budesonide (Apulien) 9. Triamcinolone acetonide (Kenalog) 10. Hydrocortisone (Cortyl) 11. Mazipredone (Depersolone) 12. Betamethasone (Cuteride) 13. Fluocinolone acetonide (Sinaflan)	14. Aurobine 15. Dermasolone 16. Mycosolone 17. Ambene 18. Synalar-N 19. Ultralan 20. Cortonitol 21. Prednicarb 22. Trimistine 23. Canderm-BG	24. Deoxycorticosterone acetate (DOCSA)
Mechanism of action	Binding to receptors of the target cells (GC, MC). Decrease of phospholipase A_2, C; cyclooxygenase, lipooxygenase activity; inhibition of the macrophages differentiation; decrease of IgE-dependent histamine secretion from basophiles; suppression of fibroblasts proliferation; decrease of proliferation and functions of T-lymphocytes; suppression of interleukin formation; influence on all types of metabolism (carbohydrate, lipid, water-salt) (GC). Influence on water-salt metabolism (MC).				
Pharmacological effects	Anti-inflammatory, antiallergic, immunosuppressive (1-23); antishock, antitoxic (1-4) effects. Side effects: “steroid” diabetes, “steroid” stomach ulceration, decrease of the adrenal gland functions, hypertension (1-4); decrease of immunity (1-13).				Retention of water, Na^+, Cl^-; excretion of K^+ ions (24).
Indications and interchangeability	Rheumatoid arthritis (1-4,17). Acute pancreatitis, infectious hepatitis, hemolytic anemia (3,4). Glomerulonephritis, acute leukemia (1,3,4). Shock, organs transplantation (1-4). Bronchial asthma (1-7). Allergic dermatitis, eczema, infectious-inflammatory skin diseases (1-4,8-13,15-16,18-23). Psoriasis (8-13,18-22). Neurodermatitis (1-4,9-13,18-23). Mycoses of skin and nails (16,22,23). Gout, neuralgia, radiculitis (17). Haemorrhoids (14). Hypocorticism, Addison's disease, myasthenia (24).				
Doctor and pharmacist, remember!	Adrenocorticoids are incompatible with oral hypoglycemic drugs, peripheral-acting muscle relaxants, sedatives, sympatholytics, antihistamines, salicylates, hypotensive drugs, cardiac glycosides, coumarins, hormonal contraceptives, NSAIDs, barbiturates, prasiquantel. GC must be used only according to doctor’s indication: this group has many side effects. Simultaneous use of GC and dimedrol can cause decrease of GC effect and increase of IOP. Glucocorticoid ointments are contraindicated in case of viral and mycotic skin diseases. Prednisolone is incompatible with barbiturates, gentamycin, papaverine h/chl., euphylline, seduxen, magnesium sulfate, sodium bromide, coagulants, salicylates, diuretics. Methylprednisolone mustn’t be used during all types of vaccination and immunization. Triamcinolone mustn’t be taken in with barbiturates, rifampicin. Triamcinolone and isoprenaline simultaneous use can cause ventrical fibrillation. Hydrocortisone is incompatible with vitamin D.				

HORMONAL DRUGS OF GONADS AND ANABOLIC STEROIDS

CLASSIFICATION	ESTROGENS (STEROIDAL, NONSTEROIDAL* ONES); ANTIESTROGENS**	GESTAGENS	ANDROGENS	ANABOLIC STEROIDS
Drugs and their synonyms	1. Ethinyl estradiol (Microfolline) 2. Estrone (Folliculine) 3. Estradiol 4. Estriol (Ovestine) 5. Conjugated estrogens (Hormoplex) 6. Sinestrol* (Hexestrol) 7. Dimestrol* 8. Clomiphene citrate**	9. Allylestrenol (Turinal) 10. Norethisterone (Norkolute) 11. Progesterone 12. Pregnine (Ethisterone) 13. Acetomepregenol	14. Testosterone propionate 15. Testenate 16. Tetrasterone (Sustanone-250) 17. Methyltestosterone 18. Testobromlecite	19.Methandrostenolone (Methandienone) 20. Nandrolone phenylpropionate (Phenoboline) 21. Nandrolone decanoate (Retabolil) 22. Silaboline 23.Methylandrostendiol
Mechanism of action	Binding to the target cells receptors → influence on DNA and RNA synthesis → influence on the protein synthesis and functions.			
Pharmacological effects	Induction of the endometrium proliferation, stimulation of the secondary sexual characters and uterus development, increase of uterine contractions (1-7). Increase of gonadotropins secretion, stimulation of ovulation (in low doses), inhibition of gonadotropins secretion (in high doses). Antiestrogenic effect (8).	Decrease of the uterus excitability and contractility, induction of secretory phase of endometrium, stimulation of the mammary glands development (9-13).	Formation of male genitals and secondary sexual characters (androgenic effect); anabolic effect (14-18).	Anabolic effect (stimulation of protein synthesis, tissue regeneration, osteogenesis). Increase of liver antitoxic function, erythropoiesis; retention of nitrogen and phosphorus in the body (19-23).
Indications and interchangeability	Amenorrhea, sterility (1-3,5-8); vaginal mucous membrane atrophy (4); genital hypoplasia, labour induction (1-3,5-7); climacteric disorders (1-7); mammary gland cancer (1,6-8); prostate cancer (1,6,7); dysfunctional uterine bleedings, androgenic insufficiency in men (8).	Uterine bleedings (10-13), threatened preterm labour (9-11,13); endometriosis (10); sterility, amenorrhea (11,12).	Impotence, sterility, eunuchoidism, mammary gland and ovary tumors, climacteric syndrome (14-18); uterine bleedings (14,17).	Cachexia, dystrophy, osteoporosis, chronic infections, injuries, burns (19-23); myocardial infarction (19-21).
Doctor and pharmacist, remember!	Estrogens are incompatible with indirect-acting anticoagulants. Long-term administration of anabolic steroids causes androgenic effect. Retabolil should be carefully used with indirect-acting anticoagulants and oral hypoglycemic drugs. Turinal isn't recommended to use with drugs–inductors of microsomal liver enzymes. Before meals: 19.			

DRUGS AFFECTING MYOMETRIUM

<table>
<tr><td rowspan="2">CLASSIFICATION</td><td colspan="2">DRUGS STIMULATING THE UTERINE CONTRACTILITY (UTEROTONICS)</td><td rowspan="2">DRUGS INHIBITING THE UTERINE CONTRACTILITY (TOCOLYTICS)</td></tr>
<tr><td>AGENTS INCREASING UTERINE CONTRACTIONS AND TONE</td><td>AGENTS INCREASING PREFERABLY UTERINE TONE</td></tr>
<tr><td>Drugs and their synonyms</td><td>HORMONAL DRUGS OF HYPOPHYSIS
1. Oxytocin
2. Methyloxytocin
3. Desaminooxytocin
4. Pituitrin
ESTROGENIC DRUGS
5. Estrone (Folliculine)
6. Estradiol dipropionate
7. Sigetine
PROSTAGLANDINS
8. Dinoprost (Prostin $F_{2\alpha}$, Ensaprost-F)
9. Dinoprostone (Prostin E_2, Cerviprost)
10. Prostenone (PGE_2)</td><td>ERGOT DRUGS
11. Ergometrine maleate
12. Methylergometrine
13. Ergotamine (Cornutamine)
14. Ergotal
SYNTHETIC DRUGS
15. Cotarnine chloride (Stipticine)
PLANT ORIGIN DRUGS
16. Shepherd’s purse herb
17. Barberry leaves tincture
GANGLIONIC BLOCKERS
18. Pachycarpine hydroiodide</td><td>β_2- ADRENOMIMETICS
19. Fenoterol (Partusisten)
20. Ritodrin (Pre-Par)
21. Hexaprenaline (Gynepral)
22. Salbutamol (Salbupart)
GESTAGENIC DRUGS
23. Allylestrenol (Turinal)
24. Progesterone</td></tr>
<tr><td>Pharmacological effects</td><td colspan="3">Increase of uterine tone and contractions (1-15,18). Protection of uterine vessels’ walls (16-17). Inhibition of uterine contractions (19-24).</td></tr>
<tr><td>Indications and interchangeability</td><td colspan="3">Labour induction (1-10); hypotonic uterine bleedings, involution of uterus after labour or abortion (1-4,11-15,18); treatment of fetus intrauterine asphyxia (7); therapeutic abortion (8-10); climacterium, sterility, amenorrhea (5-7); stoppage of functional uterine bleedings and bleedings caused by fibroma (16-17); prophylaxis and treatment of the threatened abortion or preterm labour (19-24); disorders of uteroplacental circulation (23,24).</td></tr>
<tr><td>Doctor and pharmacist, remember!</td><td colspan="3">Oxytocin, methylergometrine should be carefully used with sympathomimetics.
Desaminooxytocin isn’t prescribed with other drugs with oxytocin effects.
Fenoterol shouldn’t be used with calcium-containing drugs, vitamins of D group, mineral corticoids.
Ritodrin should be carefully prescribed with glucocorticoids.</td></tr>
</table>

CONTRACEPTIVES

CLASSIFICATION	COMBINED ESTROGEN-GESTAGEN DRUGS			GESTAGEN MICRODOSES (MINI-PILLS)
	MONOPHASIC ONES	DIPHASIC ONES	TRIPHASIC ONES	
Drugs and their synonyms	1. Ovidone 2. Rigevidone 3. Minizistone 4. Diane-35 5. Non-ovlone 6. Femoden 7. Marvelone 8. Microgynone–28 9. Silest	10. Anteovin 11. Neo-eunomin	12.Tri-regol 13.Trizistone 14.Triquilar 15.Trinovum 16.Trinordiol–21 17.Milvane	18. Continuin 19. Norgestrel (Ovret) 20. Microlute 21. Linestrenol (Exlutone)
Mechanism of action	Central (direct) action – inhibition of the hypothalamus-pituitary system (inhibition of the FSH and LH production) and as a result inhibition of ovulation. Peripheral (mediated) action – influence on the ovaries, endometrium, cervix of the uterus, Fallopian tubes.			”Cervical factor” – decrease of cervical mucosa secretion and change of its physicochemical properties. “Uterine factor” – inhibition of the endometrium proliferation, interruption of the fetal ovum implantation. “Tube factor” – inhibition of the uterine tubes motility.
Pharmacological effects	Contraceptive (1-26); antiovulatory (1-24); antiandrogenic (4,6,9); antibacterial, antiseptic, antiprotozoal, spermicidal (25,26) effects.			
Indications and interchangeability	Contraception for women with estrogenic character phenotype (1,2); contraception, menstrual cycle disorders (3,10,13); contraception for young women (4,6,8,11-14,17); contraception for women with hyperandrogenism, treatment of acne, hirsutism, androgenic alopecia (4,7,9); contraception for women older than 35 years, suffering headache, thrombophlebitis (18-21); contraception during lactation (9,14,18-21,23-25); contraception for women, living irregular sexual life (22); endometriosis, contraception for women of all ages, prophylaxis of several venereal diseases (25,26).			
Doctor and pharmacist, remember!	Oral contraceptives are incompatible with rifampicin, barbiturates, phenylbutazone, antibiotics with broad spectrum of action, sulfonamides, pyrazolone derivatives, analeptics, tranquilizers, anticonvulsants, drugs–inductors of microsomal liver enzymes, activated carbon, laxatives. Minizistone, non-ovlone are incompatible with narcotic analgesics, oral hypoglycemic drugs.			

CONTRACEPTIVES (CONTINUATION)

CLASSIFICATION	POSTCOITAL CONTRACEPTIVES	PROLONGED PROGESTIN-CONTAINING DRUGS		VAGINAL CONTRACEPTIVES (SPERMICIDES)
		ONES FOR INJECTION	SUBCUTANEOUS IMPLANTS	
Drugs and their synonyms	22. Levonorgestrel (Postinor)	23. Medroxyprogesterone acetate (Depo-Provera)	24. Levonorgestrel (Norplant)	25.Benzalkonium chloride (Pharmatex) 26.Nonoxynol (Contraceptol, Patentex Oval)
Mechanism of action	Change of the normal secretory phase of menstrual cycle, induction of temporary atrophic changes in ovaries.	Inhibition of gonadotropic hormones (FSH, LH) secretion from pituitary, increase of cervical mucosa viscosity, prevention of spermatozoons movement, interruption of fetal ovum implantation, suppression of ovulation.		Damage of cell membrane → fragmentation and death of spermatozoons.
Side effects	<u>Estrogen-dependent:</u> Headache (1-11,14,16,17,21,23) Nausea, vomiting (1-3,5-7,9-11,14,16,18,19,22,23) Gastrointestinal disorders (6,8,9,11,14,16,21) Pain in mammary glands (2-4,6-11,13,14,16,17,19,23) Hypertension (1,2,5,7,9,10) Thrombophlebitis (1,2,4,5,8,14,19,23) Chloasma (3,4,6-9,14,16,19) Good tolerance (sometimes burning) (25,26)		<u>Gestagen-dependent:</u> Body weight increase (1,2,4-6,8,11,14,16,17,19,21,23) Depression, mood dropping (1,2,4-7,11,14,17,20,23) Libido dropping (4-6,8,11,14-17,20-21) Acne, alopecia (24) Intermenstrual bleedings (1,4,7,14-17,19,21,22) Allergy (7,23)	
Doctor and pharmacist, remember!	Triphasic contraceptives are completely corresponding with physiological menstrual cycle; they ensure optimal doses with the minimal hormonal load on the women organism. Diane-35, Milvane, Femoden, Microgynone–28 don't influence on the puberty in period of menstrual cycle formation. Pharmatex doesn't influence on the normal vaginal microflora and hormonal cycle. Depo-Provera is used as intramuscular injections 1 time in 3-6 months. Norplant is implanted under the forearm skin for 5 years.			

VITAMIN DRUGS

CLASSIFICATION	DRUGS OF WATER-SOLUBLE VITAMINS	DRUGS OF FAT-SOLUBLE VITAMINS	MULTIVITAMIN DRUGS
Drugs and their synonyms	1. Thiamine chloride (B_1) 2. Riboflavin (B_2) 3. Calcium pantothenate (B_3) 4. Pyridoxine chloride (B_6) 5. Cyanocobalamine (B_{12}) 6. Calcium pangamate (B_{15}) (Calgam) 7. Folic acid (Bc) 8. Ascorbic acid (C) 9. Nicotinic acid (PP) 10.Rutin (P) 11.Pyridoxal phosphate 12.Lipoic acid	13.Retinol (A) 14.Ergocalciferol (D) 15.Tocoferol acetate (E) 16.Vicasol (K)	17.Vitrum 18.Hexavit 19.Gerovital 20.Decamevit 21.Calcinova 22.Lecovit C-Ca 23.Macrovit 24.Mineravit 25.Multitabs 26.Oligovit 27.Pexvital 28.Picovit 29.Pregnavit 30.Revit 31.Supradin 32.Taxofit 33.Triovit 34.Undevit 35.Centrum 36.Unicap
Pharmacological effects	Participation in the rhodopsin formation (2,13,15); regulation of trophic processes in skin (9,13,15); influence on the nerve impulse conduction (1-5); cardiotrophic effect (1,4,11,12,15); participation in protein, lipid, carbohydrate metabolism, redox processes (1-3,5-8,10,12); stimulation of haemopoiesis (4,5,7); participation in blood coagulation (16); normalization of vascular wall permeability (8,10,15); antioxidant effect (8,10,13,15); regulation of the phosphoric and calcium metabolism (13,14); participation in tissue regeneration (8,13,15).		
Indications and interchangeability	Hypovitaminosis (1-36); skin diseases (1-6,13,15); vision disorders (2,13,15); rickets (13,14); liver diseases (1,3-6,8,9,15,16); neuritis, neuralgia (1,3-5); peptic ulcer, gastritis (1,3,9,10,13); radiation sickness, leukemia (2,5,7,10); anemia (4,5,7); hemorrhagic diathesis, bleedings (8,10,16); gonad dysfunction (15); ischemic heart disease (1,4,9,12); chronic heart failure (1,4,7,11,12).		
Doctor and pharmacist, remember!	Vitamin A is incompatible with hydrochloric and acetylsalicylic acids. Vitamin B_1 is incompatible with vitamins PP, C, B_{12}, B_6; salicylates, tetracycline, sympathomimetics, hydrocortisone. Vitamin B_2 is incompatible with vitamin B_{12}. Vitamin B_6 is incompatible with vitamins B_1, B_{12}; aminophylline, caffeine. Vitamin B_{12} is incompatible with aminazine, vitamin B_1, hydrochloric and acetylsalicylic acids, vitamins PP, C, B_6, B_2; gentamycin. Vitamin C is incompatible with vitamins B_1, B_{12}; aminophylline, dimedrol, dibasol, salicylates, tetracycline, sympathomimetics, hydrocortisone, penicillin, iron-containing drugs, heparin, indirect-acting anticoagulants. Vitamin D is incompatible with hydrochloric acid, vitamin E, salicylates, tetracycline, hydrocortisone. Vitamin PP is incompatible with vitamins B_1, $B_{12,}$ B_6; aminophylline, salicylates, tetracycline, sympathomimetics, hydrocortisone. Vitamins mustn't be injected with each other in one syringe. Vitamin B_1 solution mustn't be injected with solutions containing sulfites in one syringe. Vitamins B_1, $B_{6,}$ B_{12} change the metabolism of each other, that's why they mustn't be used simultaneously. Vitamin A should be carefully used by patients with nephritis, heart diseases, pregnancy. Prolonged vitamin PP intake can cause the fatty liver degeneration. Folic acid is incompatible with sulfonamides. Before meals: 30. After meals: 8,9,11-14,18.		

ENZYMATIC DRUGS

CLASSIFICATION	PROTEOLYTIC DRUGS	FIBRINOLYTIC DRUGS	AGENTS IMPROVING DIGESTION	DIFFERENT ENZYMATIC DRUGS
Drugs and their synonyms	1. Tripsin 2. Chimotripsin 3. Ribonuclease 4. Deoxyribonuclease 5. Collagenase 6. Iruxol	7. Fibrinolysin 8. Streptokinase 9. Streptodecase	10. Pepsin 11. Gastric juice 12. Abomin 13. Pancreatin 14. Solizym 15. Pansinorm 16. Festal 17. Mezim-forte 18. Ensistal	19. Hyaluronidase (Lidase) 20. Ronidase 21. Cytochrome C (Lecosim) 22. Penicillinase (Neuropen)
Mechanism of action	Destruction of peptide bonds in the molecules of proteins and peptides.	Transformation of profibrinolysin into active fibrinolysin.	Improvement of fats, proteins and carbohydrates digestion.	Decrease of hyaluronic acid viscosity → increase of tissues permeability (19,20); improvement of tissue respiration (21); destruction of β-lactam ring of penicillin molecule (22).
Pharmacological effects	Thinning of the viscous secretions, exudates, blood clots; lysis of the necrotized tissue (1-6). Antiviral effect (4).	Dissolution of the newly-formed thrombus, blood clots.	Improvement of digestion.	Softening of scars, removal of contractures in joints, lysis of hematomas (19,20); restoration of oxidative processes in the body (21), elimination of symptoms caused by the allergic reactions and anaphylactic shock as a response to penicillin drugs (inactivation of penicillins) (22).
Indications and interchangeability	Relief of sputum expectoration (1-3); burns, intertrigoes, frostbites, bedsores, purulent wounds (1-6); chronic commissural processes (1-3,6); iridocyclites (1,2); keratites, conjunctivites (4).	Newly-formed thrombus, recent myocardial infarction, thromboembolism of the pulmonary artery, acute thrombophlebitis (7-9).	Pancreatitis (13-18), digestion dysfunctions: achylia (11, 13, 14, 17), hypo- and anacid gastritis (10-17), dyspepsia (10-12, 15-18); hepatites, cholecystites (14, 15).	Contractures of joints, burn and surgery scars, hematomas (19,20); rheumatic arthritis (19); postnatal asphyxia, chronic pneumonia, heart failure, ischemic heart disease, hypoxic states (21); acute allergic reactions and anaphylactic shock caused by penicillin drugs (22).
Doctor and pharmacist, remember!	Collagenase shouldn't be combined with tetracyclines, heparin. Anticoagulants should be taken not earlier than in 4 hours after streptokinase infusion. Chimotripsin is only for local application. After meals:11,14,16. During meals:11,12,14-16.			

DRUGS, DECREASING BLOOD COAGULATION

<table>
<tr><td rowspan="2">CLASSIFICATION</td><td colspan="3">DIRECT-ACTING ANTICOAGULANTS</td><td rowspan="2">INDIRECT-ACTING ANTICOAGULANTS</td></tr>
<tr><td colspan="2">RESORPTIVE-ACTING AGENTS</td><td>LOCAL-ACTING AGENTS</td></tr>
<tr><td>Drugs and their synonyms</td><td colspan="2">1. Heparin
2. Calcium nadroparin (Fraxiparin)
3. Sodium enoxaparin (Clexan)
4. Sodium reviparin (Clivarin)</td><td>5. Heparin ointment
6. Hirudoid
7. Venitan</td><td>8. Ethylbiscumacetate (Pelentan, Neodicoumarine)
9. Acenocumarol (Sincumar)
10. Phenindion (Pheniline)</td></tr>
<tr><td>Mechanism of action</td><td colspan="3">Interaction of negative charged drugs with positive charged proteins of blood coagulation system → formation of ionic complexes → inhibition of blood coagulation at different stages.</td><td>Inhibition of biosynthesis of blood coagulation system factors in liver.</td></tr>
<tr><td>Pharmacological effects</td><td colspan="3">Inhibition of coagulation at all stages, activation of fibrinolysis, hypolipidemic effect, improvement of the renal and coronary blood flow (1-4). Decrease of the platelets aggregation (1-7). Immunosuppressive effect (1).</td><td>Decrease of blood coagulation, increase of the vascular permeability, hypolipidemic effect.</td></tr>
<tr><td>Indications and interchangeability</td><td colspan="2">Embolism and thromboses of cerebral, pulmonary, ocular vessels; rheumatism, bronchial asthma, glomerulonephritis, hemolytic anemia, renal transplantation, atherosclerosis, coronarosclerosis, angina pectoris, hypertension, endocarditis (1-4). Cardiac infarction, direct blood transfusion, surgeries on heart and vessels (1).</td><td>Thrombophlebitis, haemorrhoids, venothrombosis, trophic ulcers of legs (5-7).</td><td>Prophylaxis and treatment of thromboses, embolism, thrombophlebitis, strokes, coronary deficiency (8-10).</td></tr>
<tr><td>Doctor and pharmacist, remember!</td><td colspan="4">Direct-acting anticoagulants are incompatible with ACTH, antihistamine drugs, penicillin, tetracycline, papaverin, haloperidol, tricyclic antidepressants, digitalis drugs, strophanthin, mercuric diuretics, purine derivatives, griseofulvin.
Indirect-acting anticoagulants are incompatible with α- and β-adrenomimetics, tricyclic antidepressants, estrogens, salicylates, diphenine, butamide, glucocorticoids, antiaggregants, barbiturates.
Heparin is incompatible with muscle relaxants.
Heparin solution is incompatible with alkaline solutions, thyroxine, ACTH, protamine sulfate, antiaggregants, NSAIDs in one syringe.
During the heparin administration there is a risk of severe hemorrhages appearance.
Heparin antagonist is protamine sulfate.
Sodium enoxaparin musn’t be mixed with other drugs in one syringe.
Indirect-acting anticoagulants can cause severe bleedings, both because of coagulation decrease and vascular dilatation.
Treatment by indirect-acting anticoagulants should be stopped gradually.</td></tr>
</table>

DRUGS DECREASING BLOOD COAGULATION (CONTINUATION)

CLASSIFICATION	FIBRINOLYSIS ACTIVATORS (FIBRINOLYTICS)	ANTIAGGREGANTS	
Drugs and their synonyms	1. Fibrinolysin (Plasmin) 2. Streptokinase (Avelysin) 3. Alteplase (Actilyse)	4. Indobuphen (Ibustrine) 5. Dipyridamol (Curantil) 6. Clopidogrel (Plavix)	7. Ticlopidine (Ticlid) 8. Acetylsalicylic acid (Aspirin) 9. Cardacet (Propranolol + acetylsalicylic acid)
Mechanism of action	Convertion of profibrinolysin into active fibrinolysin (2). Activation of fibrin lysis in clots (1-3).	Activation of the adenylate cyclase (4,5). Stimulation of the prostaglandin E_1, D_2 and prostacyclin formation (4,6).	Inhibition of the binding of fibrinogen to activated platelets by interaction with glycopeptide II_B/ III_A (7). Inhibition of cyclooxygenase inside the platelets and synthesis of thromboxane (8,9). Block of β_1- and β_2-adrenoceptors (9).
Pharmacological effects	Fibrinolytic effect (1-3).	Inhibition of the platelets and erythrocytes aggregation and adhesion, normalization of the blood rheologic properties, improvement of cerebral, myocardial, retina microcirculation (4-9). Decrease of oxygen consumption by myocardium, antiarrhythmic effect (9).	
Indications and interchangeability	Thrombosis of veins, arteries; fresh cardiac infarction, thromboemdolism of pulmonary artery (1-3).	Prophylaxis and treatment of hypercoagulation syndrome, chronic coronary deficiency (4-9). Ischemic encephalopathy, retinopathy (4-8). Stable angina treatment, cardiac infarction prophylaxis and treatment (in subacute period without blood circulation deficiency) (9).	
Doctor and pharmacist, remember!	Fibrinolytics are used in fresh (up to 5 days) thromboses with anticoagulants under the strict control of blood coagulation markers. Fibinolytics are contraindicated in case of bleedings, peptic ulcer, radiation sickness, tuberculosis. Fibrinolysin has marked antigenic properties. Dipyridamol mustn't be mixed with other drugs in one syringe. Dipyridamol's effect decreases in case of caffeine and other xanthine derivatives influence. There is tissue irritation in case of curantil subcutaneous penetration. Before meals: 5. After meals: 4,8. During meals: 7.		

DRUGS INCREASING BLOOD COAGULATION

CLASSIFICATION	FIBRINOLYSIS INHIBITORS	HEMOSTATIC DRUGS (RESORPTIVE-ACTING, LOCAL-ACTING* ONES)	COAGULANTS OF SYNTHETIC, ANIMAL* AND PLANT** ORIGIN
Drugs and their synonyms	1. Aminocapronic acid (Amicar) 2. Tranexamic acid (Transamcha) 3. Aminomethylbenzoic acid (Amben)	4. Fibrinogen 5. Calcium chloride 6. Menadion (Vicasol) 7. Etamsylate (Dicinone) 8. Thrombin* 9. Hemostatic sponge*	10. Gelatinol* 11. Carbasochrome (Adroxone) 12. Water pepper herb** 13. Nettle herb**
Mechanism of action	Block of the plasminogen activation, inhibition of plasmin functions, kinin systems and fibrinolysis (1-3).	Participation in blood coagulation as natural components of the coagulation system (4,5,6,8,9). Activation of the thromboplastin formation (7).	Decrease of the vascular wall permeability (11-13). Increase of the blood viscosity (10).
Pharmacological effect	HEMOSTATIC EFFECT (1-13).		
Indications and interchangeability	Acute fibrinolysis, local (nasal bleeding, tonsillectomy, tooth extraction, etc.) fibrinolytic bleedings (1-3); thrombocytopenia (1,3); bleedings in peptic ulcer and after labor (1,2); acute pancreatitis (1).	Massive bleedings in surgery, obstetrics, traumatology due to fibrinogen (4) and prothrombin (5-8) deficiency. All types of chronic hemorrhages: capillary and parenchymatous (7-9,11).	Hemorrhagic diathesis, nasal and uterine bleedings (7,10-13).
Doctor and pharmacist, remember!	Aminocapronic acid should be given under the coagulogramm's control. Tranexamic acid solution mustn't be mixed with solutions containing penicillin, blood products in one syringe. Dicinone shouldn't be mixed with other drugs in the syringe. Thrombin solution mustn't be injected intramuscularly and intravenously; it is used only locally to the wound. Plant origin coagulants have mild anti-inflammatory effect. Fibrinogen solution is used only for an hour after its preparation. After meals: 5.		

DRUGS AFFECTING ERYTHROPOIESIS AND LEUKOPOIESIS

CLASSIFICATION	ERYTHROPOIESIS STIMULANTS		LEUKOPOIESIS STIMULANTS AND COLONY-STIMULATING FACTORS*
	IRON-CONTAINING DRUGS	VITAMINS, ERYTHROPOIETINS*	
Drugs and their synonyms	1. Iron fumarate (Ferronat) 2. Gectofer (Ectofer) 3. Iron sulfate (Ferro-gradumet, Tardiferon) 4. Iron dextran (Ferrolec-plus) 5. Iron saccharate (Ferrum Lek)	6. Cyanocobalamin (vitamin B_{12}) 7. Folic acid (vitamin B_c) 8. Coamid 9. Human erythropoietin* (Epomax)	10. Filgrastim* (Neypogen) 11. Lenograstim* (Granocyte) 12. Sodium nucleinate (Polydan) 13. Ethyl-carboxyphenyl-thiazolidin-acetate (Leukogen) 14. Methyl-oxymethyluracyl (Pentoxyl) 15. Molgramostim* (Leukomax)
Pharmacological effects	Increase of hemoglobin content in erythrocytes (1-5).	Improvement of iron utilization and stimulation of hemoglobin synthesis (6-9).	Stimulation of hemopoietic activity of the bone marrow and leucopoiesis; increase of macrophages, thrombocytes, eosinophiles number (10,11,15); acceleration of regeneration processes (12-14).
Indications and interchangeability	Iron-deficiency anemia (1-5).	Hypochromic and hyperchromic anemia, hepatitis, hepatic cirrhosis, helminthiasis, states after stomach resection (6-8). Anemia in chronic renal failure (9).	Leukopenia, agranulocytosis (12-14); immunity decrease, radiation sickness (10-12,15); viral hepatitis (10, 12-15), bone marrow transplantation (10,15), chemotherapy of malignant tumors (10,11,15), HIV-infection (10-15).
Doctor and pharmacist, remember!	Iron-containing drugs are incompatible with salicylates, cardiac glycosides, antacids. Folic acid is incompatible with sulfonamides. Iron-containing drugs are incompatible with tetracyclines. Vitamin B_{12} (cyanocobalamin) mustn't be injected with other drugs in the one syringe. Iron-containing drugs cause constipation, staining of excrements and teeth in black color (after taking in these drugs one should rinse the mouth). Leukopoiesis inhibitors are mainly antitumoral drugs. Erythropoiesis inhibitor is solution of sodium phosphate marked with phosphorus isotope (P^{32}).		

ANTITUMOR DRUGS

CLASSIFICATION	ALKYLATING AGENTS				
Drugs and their synonyms	CHLORETHYLAMINES 1. Iphosphamide (Choloxan) 2. Dopan 3. Lophenal 4. Novembichinum 5. Melphalan (Alkeran) 6. Chlorambucil (Leukeran) 7. Cyclophosphamide (Cyclophosphan)	ETHYLENIMINES 8. Thiophosphamide (Thioteph) 9. Benzoteph 10. Imiphos (Marcophan) 11. Phosphemide (Phosphasine) 12. Fotrin	DISULFONIC ACIDS ESTERS 13. Myelobromol 14. Myelosan	NITROSOUREA DERIVATIVES 15. Lomustine 16. Carmustine 17. Nimustine (Nidran) 18. Fotemustine (Mustoforan) 19. Nitrosomethylurea	METALORGANIC AGENTS 20. Carboplatin 21. Cisplatin (Platinol, Platidiam)
Mechanism of action	Alkylation of molecules in cells, inhibition of protein synthesis, formation of transversal bonds between DNA and RNA (inhibition of cell division ability: damage of mitochondrial membrane, separation of the processes of oxydation and phosphorylation, irreversible damage of the tumor cells' structure and functions in any functional stage).				

CLASSIFICATION	ANTIMETABOLITES	ALKALOIDS		
Drugs and their synonyms	FOLIC ACID*, PURINES**, PYRIMIDINES ANALOGUES 22. Methotrexate* 23. Edatrexate* 24. Mercaptopurine** 25. Fopurine** 26. Pentostatin** (Nipent) 27. Thioguanine** (Lanvis) 28. Cytarabine (Cytosar) 29. Hemcytabine (Hemsar) 30. Fluorafur 31. Fluoruracil 32. Fludarabine phosphate** 33. UFT (uracil + fluorafur)	PERIWINCLE PLANT ONES (VINCA ALKALOIDS) 34. Vinblastine (Rosevine) 35. Vincristine (Oncovine) 36. Vinorelbine (Navelbine) 37. Vindesine (Eldisine)	MAY-APPLE ONES (PODOPHYLLOTOXINS) 38. Etoposide 39. Teniposide (Vumone) 40. Podophyllin 41. Etoposide phosphate (Etopose)	AUTUMN CROCUS*, YEW-TREE (TAXANS) ONES 42. Colchamin* 43. Paclitaxel (Taxol) 44. Docetaxel (Taxoter)
Mechanism of action	Antagonism to natural nucleotides, interruption of DNA and RNA synthesis in the tumor cells by blocking the basic enzymatic processes.	Inhibition of tumor cells division at the different stages of mitosis. (These agents are mitotic poisons).		
Pharmacological effects	Antitumor (1-75); cytostatic, cytotoxic, immunosuppressive (1-44) effects.			

ANTITUMOR DRUGS (CONTINUATION)

CLASSIFICATION	HORMONAL AND ANTIHORMONAL DRUGS						
	GESTAGENS	ESTROGENS	ANTIESTROGENS	ANDROGENS	ANTIAND-ROGENS	LUTEINIZING HORMONE AGONISTS	ADRENO-CORTICOIDS BIOSYNTHESIS INHIBITORS
Drugs and their synonyms	45. Megestrol (Megeyse) 46. Medroxipro-gesterone acetate (Depo-Provera) 47. Gestonorone caproate (Depostat)	48. Polyestradiol phosphate (Estradurine) 49. Phosphestrol (Chonvane) 50. Chlortrianizen 51. Diethylstilbestrol 52. Ethinylestradiol	53. Tamoxifen (Mammofen) 54. Toremifen (Farestone)	55.Testosterone propionate 56.Nandrolone	57. Nilutamide (Anandrone) 58. Flutamide (Flucinome) 59. Cyprotero-ne acetate (Androcur)	60. Goserelin (Zolagex) 61. Buserelin (Suprefact) 62. Leuprolid (Prostap)	63.Amino-glutethimide (Mammomit) 64.Chloditan (Mitotan)
Mechanism of action	Inhibition of gonadotropins production, resulting in inhibition of estrogens synthesis (45-47); inhibition of growth of hormone-dependent tumors in target-tissues (48-52,55-56); blocking of hormonopoietic function of the testicles and ovaries (that is pharmacological castration) (60-62); competitive binding to the estrogen (53,54), androgen (57-59) receptors; inhibition of adrenocorticoids biosynthesis (63-64).						
Pharmacological effects	Antiandrogenic (48-52,57-59); androgenic (55,56); estrogenic (48-52); antiestrogenic (45-47,53,54,63,64) effects; pharmacological castration (60-62).						
Side effects	Nausea (1-47,53,54,57-59,61-65,68-70,72,73,75); lack of appetite, diarrhea, vomiting (1-44); stomatitis (5-8,15-20,22,24,26-35,37-44); myalgia (43,44); neuropathy (20,35,36); bronchospasm (29); hyperpigmentation of skin (17,65); phlebitis (16); hemorrhagic cystitis (1,7); water retention (45-52,57-59); increase of body weight (45-47); hypercoagulation (45-52); hot flushes (16,57-63,67); virilization (hirsutism, voice changes, acne) (55,56); gynecomastia (45-52,57-59); metrorrhagia (48-56); hypercalcemia (48-54); inhibition of bone marrow function (2,5,6,8,14-16,19,21,24,27,28,31,65,66); cardiotoxicity (7,29,69,70-73); gastrointestinal tract ulceration (22,31,65,67,69,70,72); hepatotoxicity (22,24,53,58,59,65); nephropathy (1,5-7,14,22,24,27,28,34,35,72); myelosuppression (4,25,26,30,65,66,70,72,73,75); hyperglycemia (68); fever (67,70,75); alopecia (65,69,70-72,75); nephrotoxicity (1,15,16,21,68).						

ANTITUMOR DRUGS (CONTINUATION)

CLASSIFICATION	ANTITUMOR ANTIBIOTICS		TOPOISOMERASE I INHIBITORS
Drugs and their synonyms	ACTINOMYCINS 65. Dactinomycin (Cosmegen) 66. Mytomycin (Mytolem) 67. Bleomycin (Bleo) 68. Streptozocin (Zanozar)	ANTHRACYCLINES 69. Doxorubicin (Doxolem) 70. Mitoxanthrone (Trexan) 71. Epirubicin (Pharmarubicin) 72. Rubomycin 73. Carminomycin	74. Topotecan 75. Irinotecan (Campto)
Mechanism of action	Intercalation between the DNA threads, inhibition of DNA-dependent RNA synthesis (65,66,69,70,72,73); production of free radicals, which provoke DNA disruption and damage of cell membranes (67,68,71); inhibition of topoisomerase I (74,75).		
Pharmacological effects	Cytostatic, cytotoxic, immunosuppressive (65-75); antimicrobial (65-73) effects.		
Indications and interchangeability	Leukemias (1-3,6-8,11-14,19,22,24-28,32,34,35,37-39,41,66,69-71,72) Uterus carcinoma (1,7,20-22,24,31,33,35,45-47,53-55,65-67,69,71,75) Stomach carcinoma (15,16,21,30,31,38,41,65-67,69,75) Mammary gland carcinoma (1,2,5,7-9,15,21-23,30,31,34-37,43-47,50, 53-56,63,66,69,70,73) Lung carcinoma (1,4,7,8,15,17,19,20-22,23,29,31,34-38,39,41,43,44, 66,67,69,70,71,73-75) Lymphogranulomatosis (2-4,6-8,15,16,19,21,28,34,35,38,41, 65,67,69,73) Cerebral tumor (5,15-18,30,34,35,39,67,68,70,71,74,75) Melanoma (5,15-19,35,37,65) Rectum and large intestine cancer, colorectal carcinoma (22,30,31,35,66-68,75) Esophageal carcinoma (17,22,37,40,67) Penis carcinoma (67) Thyroid gland carcinoma (5,67,69)	Erythremia (10) Ovarian carcinoma (1,3,5-9,12,20-22,31,33,34,43-47,53-55,65,67,69) Prostate carcinoma (7,21,22,31,48-64,67,69) Sarcoma (1,4,5-8,16,21,22,34,35,37,38,41,65,67,69,73) Urinary bladder carcinoma (7,8,20-22,31,34,35,38,39,41,66,69) Skin cancer (42,67,68,70) Pancreas carcinoma (1,29,31,66,68,69) Liver carcinoma (16,22,31,69,70,72) Testicle carcinoma (1,5-7,20-22,34,38,41,65,67) Renal carcinoma, renal carcinosarcoma (Wilms' tumor) (7,15,22,34,35,41,65,67, 69,71,72) Head and neck carcinoma (20-22,31,34,35,37,44,66,67,69,74) Adrenal cortex carcinoma (21,63,64) Ewing's tumor (1,7,35,38,41,65,72) Multiple myeloma (5,7,15,16,22,35,69)	
Doctor and pharmacist, remember!	One should avoid to use simultaneously melphalan and nalidixic acid. Myelobromol is incompatible with other antitumor drugs and radiation therapy. Carboplatin is incompatible with drugs, causing myelosuppressive, nephro- and neurotoxic effects. Vinblastine shouldn't be mixed with drugs, having the pH beyond the bounds of 3,5-5, in one syringe. Vincristine solution is incompatible with furosemide solution in one syringe. Nimustine, etoposide, trexan solutions mustn't be mixed with other drugs' solutions in one syringe. Phosphestrol mustn't be mixed with solutions, containing calcium and magnesium salts, in one syringe. Epirubicin shouldn't be mixed with heparin solution, other antitumor drugs in one syringe. After meals: 2,3.		

ANTIULCER DRUGS

CLASSIFICATION	H_2-HISTAMINOBLOCKERS, M_1-CHOLINOBLOCKERS*, H^+/K^+-ATPase INHIBITORS**	ANTACID AND COVERING AGENTS (MONOCOMPONENT, COMBINED*)	ASTRINGENT AGENTS	REPARATIVE, COMBINED* AND OTHER** ANTIULCER DRUGS	ANTIHELICOBACTERIAL DRUGS
Drugs and their synonyms	1. Famotidine (Quamatel) 2. Cimetidine (Primamet) 3. Ranitidine (Ranital) 4. Pirenzepine* (Gastrocepine) 5. Omeprazole** (Omez)	6. Aluminium phosphate (Phosphalugel) 7. Carbaldrate (Alugastrin) 8. Maalox* 9. Alumag*	10. Bismuth subcitrate (De-nol) 11. Sucralfate (Venter)	12. Misoprostol (Saytotec) 13. Methyluracil 14. Vicair* 15. Gastropharm* 16. Liquiritone* 17. Plantaglucide**	18. Metronidazole (Trichopol) 19. Helicocin 20. Bismuth-containing drugs
Mechanism of action	Block of H_2-histamine (1-3), M_1-cholinoceptors (4) of gastric mucous membrane. Block of H^+/K^+-ATPase enzyme (5).	Neutralization of the hydrochloric acid in stomach, covering of the stomach mucous membrane (6-9).	Formation of albuminates (protection of the gastric mucous membrane); bactericidal effect on Helicobacter pylori (10-11).	Stimulation of regenerative processes in stomach (12, 13).	Bactericidal effect on Helicobacter pylori (18-20).
Pharmacological effects	Antisecretory (hydrochloric acid, pepsine) (1-5); spasmolytic (4); gastroprotective (5) effects.	Covering, antacid (6-9) effects.	Gastroprotective, antibacterial, astringent (10-11) effects.	Gastroprotective, antisecretory (12-13); astringent, antacid (14-16); spasmolytic, anti-inflammatory (14-17) effects.	Antibacterial (18-20) effect.
Indications and interchangeability	Peptic ulcer (1-20); hyperacid gastritis (1-16, 18-20); hypoacid gastritis (17); gastroesophageal reflux, Zollinger – Ellison's syndrome (1-5).				
Doctor and pharmacist, remember!	Antacids are incompatible with iron salts. Antacids should be taken 1,5-2 hours before or 1,5-2 hours after taking other drugs. Cimetidine must not be taken together with benzodiazepines, oral anticoagulants, propranolol, verapamil, cytostatics and hemopoiesis inhibitors. Sucralfate must not be taken with tetracycline. The prolonged administration of De-nol and Venter results in scarry deformations of the stomach and duodenum. H_2-histaminoceptors, M_1-cholinoceptors, H^+/K^+-ATPase are responsible for the hydrochloric acid production by gastric mucous membrane. Before meals: 1-5,7,9-11,17,20. After meals: 8,13,14,18,19. During meals: 12,13,18,19.				

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HEPATOPROTECTORS

CLASSIFICATION	PLANT ORIGIN DRUGS	ANIMAL ORIGIN DRUGS	DRUGS, CONTAINING AMINOACIDS AND ESSENTIAL PHOSPHOLIPIDS*	SYNTHETIC DRUGS	HOMEOPATHIC DRUGS
Drugs and their synonyms	1. Silibinine (Carsil, Legalon) 2. Bilignine 3. Simepar 4. Tiqueol 5. Cinarine (Angirol) 6. Apcosul 7. Hepabene 8. Liv 52 9. Hepatophalc Planta 10. Solyaren	11. Sirepar 12. Trophopar 13. Vigeratin 14. Vitohepat 15. Erbisol	16. Ademethionine (Heptral) 17. Ornitine (Hepa-Merz) 18. Hepasteril A 19. Hepasteril B 20. Hepasol 21. Glutarsine 22. Essentiale* 23. Phospholip*	24. Antral 25. Thiotriazoline 26. Betaine citrate 27. Malotilate (Maximalone) 28. Thiazolidine (Heparegen) 29. Epargrizeovit 30. Catergen 31. Zixorine 32. Ursodeoxycholic acid	33. Galstena 34. Hepar compositum 35. Hepel
Mechanism of action	Normalization of metabolic processes in hepatocytes; stabilization of hepatocytes cell membranes; decrease of free radical oxidation processes in hepatocytes.				
Pharmacological effects	Hepatoprotective (1-35) Antioxidant (1,7,9,15,24,25,30) Antitoxic (1,5,6,9-11, 15,19,21,22,31,34) Choleretic (2,4,5,7,9,10,24,25, 31,35) Membrane-stabilizing (1,4,6,7,9,22,24,25,30,32) Regenerative (7-9,11,29,35) Analgesic (9,24)	Spasmolytic (7,9,35) Antimicrobial (9) Cholelitholytic (10,32) Immunomodulating (15,24) Anti-inflammatory (1,4,10,15,24) Antidepressant (16) Diuretic, laxative (8)		Antiulcer (4, 15) Antianemic (14) Cardioprotective (22,25) Anabolic (25,29) Antipyretic (24) Antianorectic (6,8).	
Indications and interchangeability	Chronic hepatitis (1-5,8,9,11-14,17-19,22,24,25,28,30-32,34) Hepatic cirrhosis (1-3,8,11,12,16,18,20,22-24,27-29,30-32) Acute hepatitis (8,9,12,17-19,24,29,33) Cholecystitis (4,5,9,33,34) Biliary dyskinesia (4,5,7,9) Hepatic coma (18-21) Pancreatitis (13,33)	Cholestatic hepatitis (2,16,35) Hypoacid gastritis (13,14) Renal failure (5) Hypercholesterolemia (26,34) Peptic ulcer (4) Anemia (14).			
Doctor and pharmacist, remember!	In order to prepare Essentiale solution for intravenous injection, one mustn't use electrolytes solutions. Heptral isn't recommended to use before bedtime, because of its tonic effect. Before meals: 1,2,4. After meals: 4,17,24. During meals: 7,22.				

LAXATIVE DRUGS

CLASSIFICATION	DRUGS REFLEX STIMULATING INTESTINAL PERISTALSIS	DRUGS WITH OSMOTIC PROPERTIES	DRUGS SOFTENING FECES	DRUGS INCREASING VOLUME OF INTESTINAL CONTENTS	COMBINED DRUGS
Drugs and their synonyms	1. Bisacodyl (Dulcolax) 2. Sodium picosulfate (Guttalax) 3. Plantex 4. Sennosides A, B (Regulax, Sennadexin) 5. Buckthorn bark 6. Castor oil	7. Lactulose (Portalac) 8. Macrogol (Forlax) 9. Magnesium sulfate 10. Carlovar salt	11. Vaseline oil	12.Sea-kale (Laminarid)	13.Agiolax
Mechanism of action	Irritation of intestinal receptors.	Increase of osmotic pressure in intestine.	Feces softening.	Mechanical stimulation of intestinal receptors.	Depending on the drug components.
Pharmacological effect	LAXATIVE (1-13) EFFECT.				
Indications and interchangeability	Constipations as a result of intestinal hypotonia and weak intestinal peristalsis (1-13). Stool regulation in hemorrhoid, proctitis and anal fissures (1, 2, 5, 7, 13). Correction of digestion disorders in children (3). Preparation for surgeries, instrumental and X-ray examinations (1,2).				
Doctor and pharmacist, remember!	Administration of sodium picosulfate with antibiotics can cause decrease of laxative effect. Forlax doesn't contain sugar; it can be prescribed to diabetic patients. Laminarid is incompatible with iodine-containing drugs. Agiolax is not recommended to use together with other laxatives. Before meals: 4,9,10. After meals: 13.				

DIURETIC DRUGS

CLASSIFICATION	THIAZIDE DIURETICS	LOOP DIURETICS	CARBOANHYDRASE INHIBITORS
Drugs and their synonyms	1. Hydrochlorothiazide (Dichlothiazide, Hypothiazide) 2. Chlorthalidone (Hyhrotone, Oxodoline) 3. Cyclomethiazide	4. Furosemide (Lasix) 5. Bumetanide (Buphenox) 6. Clopamide (Brinaldix) 7. Ethacrynic acid (Uregit) 8. Indapamide (Ariphone) 9. Pyretanide (Arelix)	10. Acetazolamide (Diacarb, Phonurite)
Mechanism of action	Inhibition of Na^+, Cl^-, K^+ ions and water reabsorption preferably in distal part of the nephron's convoluted tubule.	Inhibition of Na^+, Cl^-, K^+ ions and water reabsorption in Henle's loop.	Inhibition of carboanhydrase enzyme in proximal part of nephron's convoluted tubule.
Pharmacological effects	Therapeutic effects: diuretic (1-10), hypotensive (1-9). Side effects: hyponatremia, hypokalemia (1-10), hypochloremic alkalosis, hyperuricemia, hyperglycemia (1-9); acidosis (10).		
Indications and interchangeability	Hypertension (1-4,6-9), heart failure, nephrotic syndrome, hepatic cirrhosis, nephropathy of pregnancy (1-9); eclampsia (1-6); non-diabetic polyuria, glaucoma (1-3,6); pulmonary, cerebral edema, acute and chronic renal failure (4,5,7); intoxication with barbiturates (4,5); forced diuresis (4).		Edemas as a result of chronic heart failure and cardio-pulmonary failure, glaucoma, mild epileptic attacks (petit mal) (10).
Doctor and pharmacist, remember!	Diuretics are incompatible with adrenomimetics and sulfonamides. Treatment with thiazide, loop diuretics and carboanhydrase inhibitors should be carried out with a diet rich in potassium. Thiazide diuretics are contraindicated in severe renal failure. While taking thiazide diuretics the retention of uric acid and gout exacerbation, increase of glucose level in blood are possible. Ethacrynic acid has a local irritating effect, that's why its solutions shouldn't be injected intramuscularly and subcutaneously. Bumetanide, furosemide are not recommended to take together with agents accelerating nephrotoxic effects. Bumetanide has diuretic effect longer than furosemide does (up to 6 hours) and it is effective in smaller doses than furosemide. Furosemide is incompatible with other drugs in one syringe. Acetazolamide must not be taken more than five days (metabolic acidosis occurs). Before meals: 2,4,5,8. After meals: 1,7. During meals: 2,3.		

DIURETIC DRUGS (CONTINUATION)

CLASSIFICATION	POTASSIUM-SPARING DIURETICS	OSMOTIC DIURETICS	PLANT ORIGIN DIURETICS	XANTHINE DERIVATIVES
Drugs and their synonyms	1. Spironolactone (Veroshpirone, Aldactone) 2. Triamterene (Pterophen) 3. Amiloride	4. Mannitol (Mannit) 5. Urea (Carbamide) 6. Potassium acetate	7. Lespenephril 8. Cowberry leaf 9. Bearberry leaf 10. Orthosiphone leaf 11. Horse-tail herb	12.Aminophylline (Euphylline) 13.Theobromine
Mechanism of action	Decrease of membranes permeability (in distal parts of nephron's convoluted tubules) for Na^+, Cl^- ions, retention of K^+ ions due to block of aldosterone receptors (1), block of membrane Na-canals (2,3).	Increase of osmotic blood pressure by decrease of water reabsorption along the whole renal canal (4-6).	Increase of glomerular filtration (preferably) and inhibition of reabsorption (7-11).	Increase of glomerular filtration (12-13); decrease of water reabsorption in convoluted tubules (13).
Pharmacological effects	Diuretic (1-13), hypoazotemic (7), anti-inflammatory, antibacterial (8-11); spasmolytic (10,12,13).			
Indications and interchangeability	Edema caused by hypertension, heart failure; ascites in hepatic cirrhosis, nephrotic syndrome, hypokalemia caused by treatment with diuretics from other groups, digitalis drugs (1-3). Hyperaldosteronism (1).	Cerebral, pulmonary edema, acute glaucoma attack (4,5); intoxications with water-soluble poisons, forced diuresis, acute renal failure (4); edema in blood circulation insufficiency (6).	Renal edema, nephritis (7-10); chronic renal failure, nonrenal azotemia (7); inflammatory diseases of urinary tract (8-10); congestive heart failure (10,11).	Hypertension, edema caused by heart and renal failure (only as a part of complex therapy), broncho-obstructive syndrome (12,13).
Doctor and pharmacist, remember!	Potassium-sparing diuretics can cause hyperkalemia and hyponatremia. Potassium-sparing diuretics potentiate effect of thiazide diuretics. Lespenephril isn't prescribed simultaneously with psychotropic drugs. Aminophylline is forbidden to use simultaneously with drugs, containing xanthines, glucose solutions. Horse-tail herb decoction is contraindicated in nephritis. Before meals: 10. After meals: 9.			

CARDIOTONIC DRUGS

CLASSIFICATION	CARDIAC GLYCOSIDES			NON-GLYCOSIDE SYNTHETIC CARDIOTONICS
	DIGITALIS DRUGS	STROPHANTHUS DRUGS	LILY OF THE VALLEY, ADONIS*, ERYSIMUM**, SCILLA MARITIMA*** DRUGS	
Drugs and their synonyms	1. Digoxin (Lanicor, Dilacor) 2. Digitoxin (Carditoxin) 3. Cordigit 4. Lanatoside (Celanide, Isolanide) 5. Lantoside 6. Acetyldigoxin β (Novodigal) 7. Methyldigoxin (Bemecor)	8. Strophanthin K 9. Strophanthidine acetate	10. Corglycon 11. Adonisid 12. Cardiovalen 13. Meproscillarin (Clift)	14. Amrinone (Inocor) 15. Milrinone (Corotrop, Primacor)
Mechanism of action	Increase of Ca^{2+} ions concentration inside the myocardial cells → binding of Ca^{2+} ions to troponine → actomyosin complex formation → myocardial contraction (1-15).			
Pharmacological effects	A. Cardiotonic effect (1-15): 1) Positive inotropic effect (strengthening and shortening of systole, increase of cardiac output). 2) Negative chronotropic effect (prolonging of diastole, decrease of cardiac rhythm). 3) Negative dromotropic effect (decrease of myocardial conductivity). 4) Positive batmotropic effect (increase of myocardial excitability). B. Improvement of energy metabolism in myocardium (increase of ATP content, increase of lactic acid utilization, decrease of oxygen consumption by myocardium (1-15). C. Diuretic effect (1-13). D. Sedative effect (10,11). E. Anticonvulsive effect (10,11).			
Pharmacokinetics	High absorption from gastro-intestinal tract, high ability to bind to plasma proteins, slow onset and long duration of action, accumulation (1-7). Very low absorption from gastro-intestinal tract, low ability to bind to plasma proteins, rapid onset and short duration of action (8-10).			
Indications and interchangeability	Chronic heart failure (1-7,11-13), angio-vegetative neurosis (11,12), acute heart failure (3,4,8,10), short-term therapy of acute heart failure after the surgeries on heart (14,15).			
Doctor and pharmacist, remember!	Cardiac glycosides are incompatible with α- and β-adrenoblockers, barbiturates, local anesthetics, aminazine, reserpine; calcium-, iron-containing drugs; sympatholytics, α- and β-adrenomimetics, antiarrhythmic agents, furosemide, spironolactone, calcium antagonists, amphotericin B. As a result of accumulation cardiac glycosides cause a severe intoxication; the treatment should be carried out only under the strict doctor's control. When combining cardiac glycosides with diuretics-saluretics, glucocorticosteroids there is a possibility of their toxic effect increase, as a result of hypokalemia, that requires the simultaneous intake of potassium-containing drugs. Digitoxin is incompatible with adrenaline h/chl, isadrin, mesatone, reserpine. In case of taking digitoxin together with butamide the risk of glycoside intoxication increases. Strophanthin is incompatible with aminazine and muscle relaxants. Amrinone and milrinone solutions mustn't be combined with the solutions containing dextrose, furosemide, bumetanide, sodium hydrocarbonate in one syringe. After meals:6.			

ANTIARRHYTHMIC DRUGS

CLASSIFICATION	DRUGS FOR TREATMENT TACHYARRHYTHMIAS				DRUGS FOR TREATMENT BRADYARRHYTHMIAS	
	MEMBRANE STABILIZERS	β-ADRENOBLOCKERS	AGENTS PROLONGING REPOLARIZATION	CALCIUM ANTAGONISTS. POTASSIUM DRUGS*	M-CHOLINO-BLOCKERS	β-ADRENOMIMETICS
Drugs and their synonyms	1. Quinidine 2. Procainamide (Novocainamide) 3. Praymaline (Neo-hyluritmal) 4. Moracisine h/chl. (Etmosine) 5. Disopyramide (Palpitine) 6. Lidocaine (Xycaine) 7. Phenitoin (Diphenin) 8. Propaphenone	9. Propranolol (Anaprilin) 10. Metoprolol (Corvitol) 11. Sotalol (Hylucor) 12. Acebutolol (Sectral) 13. Nadolol (Corgard)	14. Amiodarone (Cordarone)	15.Verapamil h/chl. (Isoptine) 16.Potassium and magnesium asparaginate* (Asparkam)	17. Atropine sulfate (Atromed)	18.Isoprenaline (Isadrin) 19.Dobutamine (Dobutrex)
Mechanism of action	Inhibition of Na^+, K^+, Ca^{2+}, Cl^- ions transport through membranes of cardiomyocytes.	Block of Na^+ ions transport during depolarization in sinoatrial node; decrease of sympathetic system influence on heart.	Decrease of membrane permeability for K^+ ions → repolarization prolonging.	Slow-down of cardiomyocytes depolarization due to inhibition of Ca^{2+} ions transport through the "slow" Ca-canals (15), increase of K^+ ions content in cardiomyocytes (16).	Decrease of parasympathetic nerves influence on heart.	Stimulation of β_1-adrenoceptors in heart, increase of cAMP and calcium content in cardiomyocytes.
Pharmacological effect	HEART RHYTHM NORMALIZATION (1-19).					
Indications and interchangeability	Atrial tachycardia (5,10,12-15), ventricular tachycardia (1-4,6,8,9,11,14), atrial extrasystole (4,5,9,10,12-15), ventricular extrasystole (1-6,8,10-14,16), supraventricular paroxysmal tachycardia (1,3-5,10,11,14-16), cardiac fibrillation (1-4,9,16), cardiac glycosides intoxication (3,4,7,16), surgeries on heart, large vessels and lungs (2), hypertension (9-15), angina pectoris (9-16); bradyarrhythmias, atrioventricular blockade (17-19).					
Doctor and pharmacist, remember!	Antiarrhythmic drugs are incompatible with β-adrenomimetics, oral hypoglycemic drugs, psychomotor stimulants, anticholinesterase agents, sedatives, cardiac glycosides, cholinomimetics, isoniaside and its derivatives, levomycetin, coumarin, acetylsalicylic acid, teturam, neuroleptics and tranquilizers. Quinidine is very toxic and can cause heart failure. Quinidine and novocainamide are not prescribed in case of cardiac glycosides intoxication. Novocainamide shouldn't be used with sulfonamides (competitive antagonism). Novocainamide intravenous injection can cause collapse. Etmosine is incompatible with MAO inhibitors. Potassium salts are incompatible with cardiac glycosides. 2% lidocaine solution is dissolved in isotonic solution of sodium chloride. Diphenin is incompatible with gentamycin, digitoxin, proserine, isadrin, sulfonamides. Dobutamine solutions mustn't be mixed with alkaline solutions in one syringe. Before meals: 1,14,16. After meals: 7,15.					

ANTIANGINAL DRUGS

CLASSIFICATION	NITROVASODILATORS	CALCIUM ANTAGONISTS	β_1-ADRENO-BLOCKERS	CORONARODILATORS, MYOCARDIAL METABOLISM ACTIVATORS*.
Drugs and their synonyms	1. Nitroglycerin (Nit-Ret) 2. Glycerol trinitrate (Sustac) 3. Isosorbide dinitrate (Isodinit) 4. Isosorbide mononitrate (Isosorb) 5. Pentaerythrityl tetranitrate (Dilkoran)	6. Nifedipine (Fenigidine) 7. Amlodipine (Norvask) 8. Dilthiazem (Diazem) 9. Verapamil h/chl. (Lekoptin) 10. Hallopamil (Procorum) 11. Nicardipine (Barisine)	12. Atenolol (Tenormin) 13.Metoprolol (Betalok) 14.Talinolol (Cordanum) 15.Acebutolol (Sectral)	16. Carbocromen h/chl. (Intencordin) 17. Trimetasidine* (Preductal)
Mechanism of action	Release of nitrogen oxide (II) → restoration of endothelial relaxing factor level.	Block of Ca^{2+} ions flow inside the cardiomyocytes and smooth muscles cells of the coronary vessels.	Selective block of β_1-adrenoceptors in myocardium.	Inhibition of phosphodiesterase → increase of cAMP conversion into 5-AMP (16). Improvement of ion transport through membranes of cardiomyocytes (17).
Pharmacological effects	Antianginal (1-17), coronarodilating (1-11,16) effects; decrease of oxygen consumption by myocardium (1-15), increase of myocardium supply with oxygen (1-11, 16), preferable decrease of venous pressure (1-5), improvement of coronary blood flow (16), normalization of metabolism in heart (17); antiarrhythmic, antihypertensive effects (6-15).			
Indications and interchangeability	All kinds of angina pectoris (treatment and prophylaxis) (1-5). Medical rehabilitation after myocardial infarction (2-4). Myocardial infarction, pulmonary edema (1,3).	Angina pectoris, resistant to nitrovasodilators (6-11).	Combined therapy of ischemic heart disease (12-15).	Prophylaxis and treatment of angina pectoris attacks (16). Prolonged treatment of coronary insufficiency (17).
Doctor and pharmacist, remember!	Nitrates are incompatible with vasodilators, calcium antagonists, tricyclic antidepressants. Verapamil, hallopamil are not recommended to combine with β-adrenoblockers, antiarrhythmic drugs, inhalation anesthetics, cardiac glycosides. Atenolol has longer effect than other β-adrenoblockers. Talinolol doesn't cause orthostatic hypotension. After meals: 10.			

DRUGS AFFECTING CEREBRAL CIRCULATION

CLASSIFICATION	CALCIUM ANTAGONISTS	DIHYDRATED DERIVATIVES OF ERGOT ALKALOIDS, α-ADRENOBLOCKERS*	DRUGS CONTAINING GINKGO BILOBA EXTRACT*, PERIWINKLE PLANT ALKALOIDS	COMBINED DRUGS	OTHER DRUGS
Drugs and their synonyms	1. Cinnarizine (Stugeron) 2. Nimodipine (Nimotop) 3. Flunarizine (Sibelium)	4. Dihydroergotamine (Ergotam) 5. Dihydroergotoxin (Redergin) 6. Nicergolin* (Sermion)	7. Ginkgo biloba extract* (Tanakan) 8. Vinpocetin (Cavintone) 9. Vincamine (Oxibral)	10.Instenone 11.Vasobral	12.Pentoxiphylline (Trental) 13.Xanthinol nicotinate (Complamine) 14.Pyracetam (Nootropil)
Mechanism of action	Block of Ca^{2+} ions flow inside the cells of smooth muscles in vessels.	Block of α_1-adrenoceptors in vessels, regulation of intracellular cAMP content.	Increase of brain supply with oxygen and glucose, activation of cellular metabolism.	Stimulation of cerebral metabolism, activation of reticular formation.	Improvement of blood rheologic properties, activation of fibrinolysis (12-13), increase of GABA level (14).
Pharmacological effects	Improvement of cerebral circulation (1-14), dilation of cerebral vessels (1-6,8,12-14), regulation of the arterial and venous tone (4-9,12-13); antihypoxic, anti-ischemic (1-3,12-14), antiaggregant (1-3,7-9,12,13) effects.				
Indications and interchangeability	Prophylaxis and treatment of acute and chronic cerebral circulation disorders, consequences of the craniocerebral trauma (1-3,5-14); migraine (4-6,9,11,13), peripheral angiopathy (1-5,9-13), angiospasm of the eye retina (7), cerebral vessels thrombosis (9,12,13), labyrinth disorders (1-3,7-11).				
Doctor and pharmacist, remember!	Nimodipine mustn't be used with aminoglycosides, cephalosporins, furosemide simultaneously. Complamine shouldn't be taken together with hypotensive drugs. Stugeron, vinpocetin, instenone, pentoxiphylline have antiaggregant effect, that's why they mustn't be combined with anticoagulants and antiaggregants. Stugeron can cause mild sedative effect. Instenone has to be injected only intravenously (slowly). Before meals: 5,6. After meals:1. During meals: 7,11.				

CLASSIFICATION OF THE ANTIHYPERTENSIVE DRUGS	I. DRUGS AFFECTING NERVOUS SYSTEM 1. α_2-adrenomimetics 2. Sympatholytics 3. Adrenoblockers 4. Ganglionic blockers 5. Imidazoline receptors agonists 6. CNS depressants	II.DRUGS NOT AFFECTING NERVOUS SYSTEM 1. Vasodilators (peripheral vasodilators, ACE inhibitors, angiotensin receptors antagonists, calcium antagonists, myotropic spasmolytics, etc.) 2. Diuretics 3. Other drugs III. COMBINED ANTIHYPERTENSIVE DRUGS

COMBINED ANTIHYPERTENSIVE DRUGS

CLASSIFICATION	DRUGS CONTAINING RESERPINE	DRUGS CONTAINING β-ADRENO-BLOCKER AND DIURETIC	DRUGS CONTAINING ACE INHIBITOR AND DIURETIC
Drugs and their synonyms	1. Adelfan-ezidrex	2. Viskaldix	3. Caposide 4. Captopres
Pharmacological effects	Antihypertensive (hypotensive) (1-4), diuretic (2-4), potassium-sparing (1) effects.		
Indications and interchangeability	Hypertension (1-4).		
Doctor and pharmacist, remember!	Adelfan-ezidrex is incompatible with MAO inhibitors, ACE inhibitors. Caposide shouldn't be used together with glucocorticosteroids, cytostatics, potassium-sparing diuretics, lithium drugs, allopurinol, heparin.		

ANTIHYPERTENSIVE DRUGS

CLASSIFICATION	CENTRAL-ACTING α_2–ADRENOMIMETICS	SYMPATHOLYTICS	β-ADRENOBLOCKERS	α_1-ADRENOBLOCKERS
Drugs and their synonyms	1. Clonidine h/chl. (Clofelin, Hemitone, Catapresan) 2. Methyldopa (Aldomet, Dopegit) 3. Guanfacine h/chl. (Estulik)	4. Reserpine (Serpasil) 5. Raunatin	6. Metipranolol (Trimepranol) 7. Sotalol (Darob, Hylucor) 8. Acebutolol (Sectral) 9. Metoprolol (Corvitol)	10. Prazosin (Minipres, Adversuten) 11. Doxazosin (Cardura) 12. Terazosin (Cornam)
Mechanism of action	Stimulation of α_2–adrenoceptors in vasomotor center, decrease of noradrenaline output in the synaptic cleft, elimination of the central sympathetic pressor influence on the arteries.	Decrease of noradrenaline, adrenaline and dopamine content in the presynaptic membrane.	Block of β_1-adrenoceptors in myocardium, decrease of cardiac output and oxygen consumption by myocardium.	Block of α_1-adrenoceptors in peripheral vessels.
Pharmacological effects	Decrease of BP, TPVR (1-3); cardiac output (1,3), intraocular pressure (1); sedative effect (1).	Decrease of TPVR, BP; sedative effect (4-5); antiarrhythmic effect (5).	Antihypertensive, antianginal, antiarrhythmic effects.	Dilatation of arteries, decrease of TPVR, BP, prostate smooth muscles tone.
Indications and interchangeability	Essential and renal hypertension (1-3), hypertensive crisis (1,2), glaucoma (1).	Hypertension at the early stages (4,5).	Monotherapy of hypertension in young patients, combined therapy (with α-adrenoblockers) of severe hypertension in elderly patients (6-9).	Hypertension, adenoma of prostate (10-12).
Doctor and pharmacist, remember!	Antihypertensive drugs are incompatible with adrenal corticoids. Clonidine h/chl., methyldopa, guanfacine h/chl. are not recommended to use together with antiarrhythmic drugs, calcium antagonists, vasodilators, antidepressants, phenothiazine derivatives, narcotic analgesics, noradrenaline, reserpine, cardiac glycosides, oral hypoglycemic drugs, antacids. Reserpine and raunatin mustn't be taken together with analeptics, adreno- and cholinomimetics. α-adrenoblockers are incompatible with tricyclic antidepressants. β-adrenoblockers are incompatible with narcotic analgesics, anticholinesterase agents, tricyclic antidepressants, ergot drugs. Before meals: 7. After meals: 4,9.			

ANTIHYPERTENSIVE DRUGS (CONTINUATION)

CLASSIFICATION	PERIPHERAL VASODILATORS	ACE INHIBITORS, ANGIOTENSIN RECEPTORS* ANTAGONISTS	CALCIUM ANTAGONISTS, IMIDAZOLIN RECEPTORS AGONISTS*, SPASMOLYTICS**
Drugs and their synonyms	1. Hydralazine h/chl. (Apressin) 2. Diazoxide (Hyperstat) 3. Minoxidil 4. Sodium nitroprusside (Nanipruss) 5. Molsidomine (Corvatone)	6. Enalapril (Ednit) 7. Quinapril (Accupro) 8. Ramipril 9. Captopril 10. Moexipril (Moex) 11. Perindopril (Prestarium) 12.Lisinopril (Lisopres) 13.Potassium losartan* (Cosaar) 14.Valsartan*	15. Hallopamil (Procorum) 16. Amlodipine (Norvask) 17. Lacidipine (Lacipil) 18. Isradipine (Lomir) 19. Mibefradil (Posikor) 20. Verapamil h/chl. 21. Dilthiazem 22. Moxonidine* (Cint) 23. Papaverin h/chl.** 24. Platiphylline hydrotartrate + papaverin h/chl.** 25. Bendasol** (Dibasol) 26. Papasol** (papaverin h/chl. + dibasol)
Mechanism of action	Selective relaxation of smooth muscles of the peripheral arteries (1-3) and veins (4,5).	Inhibition of ACE (6-12); block of angiotensin receptors (13,14).	Block of Ca^{2+} ions transport inside the smooth muscles cells of vessels (15-21). Imidazolin receptors stimulation, inhibition of vasomotor center activity, decrease of central sympathetic pressor influence on vessels (22). Smooth muscles relaxation due to phosphodiesterase inhibition and cAMP accumulation (23-26). Block of M-cholinoceptors (24).
Pharmacological effects	Decrease of BP (1-14); dilatation of arteries and veins; decrease of TPVR, cardiac post-load (1-3); decrease of venous return of blood to the heart, cardiac pre-load (4,5).		Decrease of BP (15-26), antianginal, antiarrhythmic (15-21), spasmolytic (23-26), sedative (22-24), moderate immuno-stimulative (25) effects.
Indications and interchangeability	Symptomatic hypertension, hypertension resistant to therapy with β-adrenoblockers, sympatho-lytics, diuretics (1-5).	Extremely severe hypertension, chronic renal failure (6-14); hypertensive crisis (6-12), acute heart failure (6-8,10,11).	Hypertension, hypertensive crisis, hypertension combined with angina pectoris (15-21, 23-26); hypertension combined with renal failure, ischemic stroke, prophylaxis and treatment of tachyarrhythmia (15-21); essential arterial hypertension (22).
Doctor and pharmacist, remember!	Vasodilators are incompatible with local anesthetics. Enalapril, moexipril, perindopril shouldn't be prescribed together with potassium-sparing diuretics. Quinapril mustn't be used together with hypnotics, narcotic analgesics, tetracyclines. Ramipril is incompatible with narcotic analgesics, local anesthetics. Verapamil, hallopamil are not recommended to combine with β-adrenoblockers, antiarrhythmic drugs, inhalation anesthetics, cardiac glycosides. Mibefradil mustn't be used with terfenadine, cisapride, asthemisol. Papaverin is incompatible with anticoagulants, dibasol, potassium iodide, acetylsalicylic acid, prednisolone, sodium bromide, sodium hydrocarbonate. Dibasol is incompatible with adrenaline h/chl., atropine sulfate, benzohexonium, magnesium sulfate, euphylline, papaverin, vitamin C. ACE inhibitors are contraindicated in pregnancy because of the risk of the fetus abnormalities development. After meals: 1,15,19. During meals: 15,19.		

DRUGS FOR ATHEROSCLEROSIS TREATMENT

CLASSIFICATION	DRUGS AFFECTING LIPID METABOLISM (HYPOLIPIDEMIC DRUGS)				ANTIOXIDANTS		ANGIOPROTECTORS	
Drugs and their synonyms	1.Lovastatin (Mevacor) 2.Simvastatin (Zocor) 3.Fluvastatin (Leskol) 4.Pravastatin (Lipostat)	5.Cholestyramine (Cholestan) 6.Cholestipol (Cholestid) 7.Huaric resin (Guarem)	8.Hemfibrosil 9.Cyprofibrate (Lipanor) 10. Phenofibrate (Lipantil)	11.Probucol (Lipomal)	DIRECT-ACTING 12.Tocoferol acetate (vitamin E) 13.Rutin (vitamin P) 14.Ascorbic acid (vitamin C)	INDIRECT-ACTING 15.Methionin 16.Lipoic acid 17. Glutaminic acid	18.Pyrycarbate (Parmidine)	19.Heparin 20.Ticlopidin (Ticlid)
Mechanism of action	Inhibition of cholesterol synthesis in liver.	Inhibition of the cholesterol and bile acids absorption in the intestine.	Activation of the lipoprotein lipase in liver.	Influence on the synthesis and redistribution of lipids in the body.	Inhibition of the non-enzymatic lipid peroxidation of the cell membranes.		Decrease of bradykinin activity.	Inhibition of coagulation factors activity.
Pharmacological effects	Hypolipidemic effect; decrease of the cholesterol, triglycerols, low density lipoproteins concentrations; increase of high density lipoproteins concentrations in blood.				Prevention of the elastic vascular fibers destruction, lipid infiltration processes and fibrosis.		Improvement of metabolic processes in the vascular walls.	Anticoagulant, anti-aggregant effects.
Indications and interchangeability	Atherosclerosis (1-20), hyperlipidemia (1-11), coronary insufficiency (18-20), diabetes mellitus (7,15).							
Doctor and pharmacist, remember!	Lovastatin, lipanor, pravastatin are not recommended to combine with fibrates, cyclosporin, erythromycin, niacin. Lovastatin mustn't be combined with nicotinic acid. Cholestyramine shouldn't be taken together with other drugs. The level of fat-soluble vitamins in the body can decrease in case of prolonged cholestyramine intake. Cholestipol mustn't be used together with digitalis drugs. Hemfibrosil mustn't be combined with lovastatin because of the possibility of severe myopathy appearance. Fibrates prevent thrombus formation due to the activation of fibrinolysis. Fibrates promote the development of cholelithiasis. Ticlopidin isn't recommended to use together with high doses of heparin. Before meals: 15,17. After meals: 16. During meals: 1,2,5-9,11,20.							

CLASSIFICATION OF ANTIBIOTICS

I. β-LACTAM ANTIBIOTICS ***1. Penicillins*** 1.1 Natural penicillins 1.2 Antistaphylococcal penicillins 1.3 Penicillins with the extended spectrum of action 1.4 Antipseudomonal penicillins 1.5 Penicillins combined with β-lactamase inhibitors	***2. Cephalosporins*** (I-IV generations) ***3. Carbapenems and Monobactams*** **II. GLYCOPEPTIDES** **III. POLYMYXINS** **IV. GRAMICIDIN** **V. CYCLOSERINE** **VI. ANTIFUNGAL ANTIBIOTICS (POLYENES)**	**VII. MACROLIDES AND AZALIDES** (I-III generations) **VIII. TETRACYCLINES** **IX. LINCOSAMIDES** **X. CHLORAMPHENICOLS** **XI. FUSIDINES** **XII. AMINOGLYCOSIDES** (I-III generations) **XIII. RIFAMPICINS** **XIV. PHOSPHOMYCINS**

CLASSIFICATION OF ANTIBIOTICS ACCORDING TO THE MECHANISM OF ACTION

BACTERICIDAL ANTIBIOTICS			BACTERIOSTATIC ANTIBIOTICS
Inhibitors of synthesis of microbial cell wall	Inhibitors of cytoplasmatic membrane functions	Inhibitors of protein synthesis	Inhibitors of protein and nucleic acids synthesis
β-Lactams	Polymyxins	Azalides	Macrolides*
Glycopeptides	Gramicidin Cycloserine	Aminoglycosides	Lincosamides
Phosphomycins	Antifungal antibiotics (polyenes)	Rifampicins (ansomacrolides)	Tetracyclines Fusidines Chloramphenicols**

*-Macrolides have a bactericidal effect on diphtheria bacillus, causative agent of pertussis.
**- Chloramphenicols have a bactericidal effect on influenza bacillus, meningococcus, pneumococcus.

PENICILLINS

Peculiarities of the group:

1. Potent bactericidal effect (streptococcus, meningococcus, gonococcus, diphtheria bacillus, anthrax bacillus, spirochetes, others). 2. Low toxicity. 3. Good absorption. 4. Wide interval of therapeutic action. 5. Cheapness and accessibility. 6.Polyvalent allergy between penicillins and partly cephalosporins.

CLASSIFICATION	NATURAL PENICILLINS		SEMISYNTHETIC PENICILLINS			
Drugs and their synonyms	SHORT-ACTING ONES 1. Benzylpenicillin sodium and potassium salts (Penicillin G) •2. Phenoxymethyl penicillin (Penicillin V, Ospen)	DEPO-DRUGS 3. Benzatine benzylpenicil-lin (Bicillin-1, Extencillin) 4. Bicillin-5	ANTISTAPHYLO-COCCAL ONES ◊5. Oxacillin (Prostaphlin) ◊•6. Cloxacillin (Tepogen) ◊•7. Fluocloxacillin	EXTENDED SPECTRUM ONES •8. Ampicillin trihydrate (Pentrexil) •9. Amoxicillin (Flemoxin) •10. Penamecillin (Maripen) •11. Bacampicillin (Penglobe)	ANTIPSEUDOMONAL ONES 12. Carbenicillin 13. Ticarcillin 14. Azlocillin 15. Piperacillin (Isipen) 16. Mezlocillin (Baypen)	COMBINED AGENTS ◊•17. Ampicillin + Sulbactam (Unazine) ◊•18. Amoxicillin + Clavulanic acid (Augmentine, Amoxiclav) ◊19. Ticarcillin + Clavulanic acid (Timentine) •20. Amoxicillin + Metronidazole (Helicocin) 21. Ampicillin + Oxacillin (Ampiox) •22. Amoxicillin + Cloxacillin (Vampilox)
◇ - resistance to β-lactamases			• - acid-resistance			
Mechanism of action	Inhibition of synthesis of the bacterial cell wall.					
Spectrum of action	G^+ and G^- cocci: streptococci (1-11,16,21,22), staphylococci (5-11,17-19,21,22), meningococcus (1-10,17-19,21,22), gonococcus (1-11, 17-19,21,22); listerias (1-4,8,9,16,21,22), diphtheria bacillus (1,16,21), anthrax bacillus (1,21), spirochetes (treponema pallidum, leptospira, borrelia) (1-4,21), clostridia (1,14-19,21), colon bacillus (8-11,14-19,21,22), blue pus bacillus (12-16), helicobacter pylori (8,9,20), influenza bacillus (8,9,11,16,17,19,22).					
Indications and interchangeability	Pneumonia, rheumatism, erysipelas (1-10,14-19,21,22); angina, scarlatina, endocarditis, purulent infections (1-3,5-9,17-19,21,22); syphilis (1-3,21), pseudomonal infection (12-16), enteric infections (8-19,22), gas gangrene, diphtheria, gonorrhea, anthrax, bacterial meningitis (1,21); peptic ulcer (8,9,20), wound infections (1-9,12-14,21,22), purulent skin and soft tissues infections (1-5,8,9,21,22), urologic infections (8,17-20).					
Side effects	Allergic reactions, dysbacteriosis (1-22); dyspepsia (5,8), neurotoxicity (12), bleeding sickness (12,13).					
Doctor and pharmacist, remember!	Penicillins are incompatible with macrolides, adrenaline, α-globulin, glucose, potassium iodide, vitamins C, P, K, B_1, B_{12}; anticoagulants, streptomycin, levomycetin. Solutions of benzylpenicillin sodium and potassium salts, timentine mustn't be mixed with other drugs in one syringe. Piperacilllin is incompatible with sodium hydrocarbonate and aminoglycosides. One should avoid to use simultaneously bacteriostatic and bactericidal antibiotics. Amoxiclav, timentine inactivate aminoglycosides. Carbenicillin mustn't be mixed with aminoglycosides in one syringe (inactivation). Before meals:7.					

CEPHALOSPORINS

CLASSIFICATION	Ist GENERATION	IInd GENERATION	IIIrd GENERATION	IVth GENERATION
Peculiarities of the group	Bactericidal effect mostly against G^+ cocci.	Broad spectrum of action and high resistance to β-lactamases of the G^- bacteria. Drugs are not effective against enterococci and blue pus bacillus.	Effectiveness against G^- bacilli and partly against blue pus bacillus. Drugs are much more effective against Enterobacteriaceae than Ist and IInd generations of cephalosporins.	High effectiveness against G^- bacteria, including β-lactamase-producing ones.
Drugs and their synonyms • - acid-resistance	1. Cephazolin (Cephzole, Totacef) 2. Cephapirin (Cephatrexil) •3. Cephadroxil (Duracef) •4. Cephalexin 5. Cephradine (Cephradal) 6. Cephaloridine (Cephorin)	•7. Cephuroxime (Ketocef, Zinnat) •8. Cephaclor 9. Cephotetan 10. Cephamandole (Mandole) 11. Cephoxitin (Mefoxin) 12. Cephmetazole (Cephmetazone) 13. Cephonicid	14. Cephotaxime (Claforan) 15. Cephtazidime (Fortum) 16. Cephoperazone 17. Cephtriaxone (Lendacine) 18. Cephodizime (Modivid) 19. Cephprozil (Cephzil) 20. Cephpyramide (Tamicin) •21. Cephpodoxime (Orelox) •22. Cephtibuten (Cedex) •23. Cephixime 24. Cephtizoxime (Epoceline)	25. Cephepime (Maxipime) 26. Cephpirome (Keyten)
Mechanism of action	Inhibition of synthesis of the bacterial cell wall.			
Spectrum of action	G^+ and G^- cocci, bacilli; high antistaphylococcal activity.	G^+ and G^- cocci; high effectiveness against escherichias, klebsiellas, proteus, salmonella.	Spectrum of action is broader, than the Ist and IInd generations' spectra are; effectiveness against blue pus bacillus, anaerobes.	
Indications and interchangeability	Infections of urinary and respiratory tracts, skin, bones and joints; prophylaxis of postoperative complications.	Pneumonias, pelvic and intra-abdominal infections, meningitis, sepsis, gonorrhea, postoperative septic complications.	Pelvic, septic severe infections, anaerobic infections (gas gangrene), pseudomonal infections.	
Side effects	Allergic reactions (including polyvalent ones with penicillins), dyspepsia, phlebitis, hematologic disorders (leukopenia, hypoprothrombinemia, eosinophilia), dysbacteriosis.			
Doctor and pharmacist, remember!	The Ist and IInd generations of cephalosporins are not active against blue pus bacillus. Cephazolin, cephuroxime, cephtriaxone, cephpyramide, cephepime mustn't be used simultaneously with loop diuretics, ethanol. Cephotaxime, cephtriaxone, cephalothin, cephaloridine solutions are incompatible with other antibiotics' solutions in one syringe. Cephtazidime, cephodizime, cephepime are not combined with aminoglycosides, amphotericin B, cyclosporine, cysplatin, vancomycin, polymyxin B, furosemide. Cephalosporins of the II-IV generations have postantibiotic effect. Before meals: 4. After meals: 9.			

OTHER β-LACTAM ANTIBIOTICS

CLASSIFICATION	CARBAPENEMS	MONOBACTAMS
Peculiarities of the group	Superbroad spectrum of action and absolute resistance to β-lactamases.	Reserve antibiotics for treatment severe intrahospital infections.
Drugs and their synonyms	◊1. Imipenem-cilastatin (Conet, Tienam) ◊2*. Meropenem (Meronem)	◊3. Aztreonam (Azactam)

◊- resistance to β-lactamases *-resistance to renal dehydropeptidase

Mechanism of action	Inhibition of synthesis of the microbial cell wall.	
Spectrum of action	Colon bacillus, salmonellas, shigellas, enterobacteria, clostridia, proteus, blue pus bacillus, serracia, influenza bacillus, gonococcus, meningococcus.	Streptococci (including enterococci); staphylococci (including penicillinase-forming), gonococci, meningococci, colon bacillus, salmonellas, shigellas, klebsiella, proteus, citrobacteria, blue pus bacillus, spore-forming and not spore-forming anaerobes.
Indications and interchangeability	Super severe infections, caused by polyresistant microorganisms; mixed infections (1-2).	Severe infections caused by G^- flora (including ones, resistant to III generation of cephalosporins, II-III generations of aminoglycosides, antipseudomonal penicillins) (3).
Side effects	Allergic reactions, phlebitis (in case of intravenous injection); pain, tissues edema (in case of intramuscular injection); dyspepsia, diarrhea, pseudomembranous colitis, neurotoxicity (1); hepatotoxicity (2).	
Doctor and pharmacist, remember!	Carbapenems are super reserve antibiotics. Monobactams solutions are incompatible with other antibiotics solutions and drugs, containing probenecide in one syringe. Combination of monobactams with furosemide and probenecide increases monobactams' (aztreonam) concentration in blood and risk of side effects appearance. Carbapenems and monobactams have postantibiotic effect, decrease the endotoxicosis. Imipenem and other β-lactam antibiotics are antagonists. It is undesirable to combine meropenem with nephrotoxic antibiotics.	

TETRACYCLINES AND MACROLIDES

<table>
<tr><td>CLASSIFICATION</td><td colspan="2">TETRACYCLINES</td><td colspan="3">MACROLIDES AND AZALIDES*</td></tr>
<tr><td>Peculiarities of the group</td><td colspan="2">Bacteriostatic effect. Broad spectrum of action ($G^+$and G^- microorganisms). Low toxicity. Good absorption.</td><td colspan="3">Bacteriostatic (in high concentrations – bactericidal) effect. Broad spectrum of action. Bioavailability is higher, than tetracyclines'one is (good penetration in tissues and cells). High effectiveness against intracellular microorganisms.</td></tr>
<tr><td>Drugs and their synonyms

• - acid-resistance</td><td>NATURAL ONES

•1. Tetracycline
•2. Oxytetracycline</td><td>SEMISYNTHETIC ONES

•3. Metacycline (Rondomycin)
•4. Minocycline (Minocin)
•5. Doxycycline (Unidox, Vibramycin)</td><td>Ist GENERATION

6. Erythromycin
7. Oleandomycin</td><td>IInd AND IIIrd GENERATION

•8. Jozamycin
•9. Roxythromycin (Rulid)
•10. Spyramycin (Rovamycin)
•11. Midecamycin (Macropen)
•12. Clarithromycin
•13. Azithromycin* (Sumamed)
•14. Dirithromycin</td><td>COMBINATIONS OF TETRACYCLINES AND MACROLIDES

15. Oletetrin
16. Erycycline</td></tr>
<tr><td>Mechanism of action</td><td colspan="5">Inhibition of protein synthesis in the microbial cell at the level of ribosomes.</td></tr>
<tr><td>Spectrum of action</td><td colspan="5">Streptococci, staphylococci, gonococci, meningococci, campilobacteria, clostridia, spirochetes, chlamydia, mycoplasma (1-16); listerias, diphtheria bacillus (1-15); comma bacillus, tularemia causative agent (1-14); legionella (6-14); pertussis causative agent (6-10); brucella (1-6,14); actinomycete, salmonellas, shigellas (1-5); ureaplasma (8-15); malarial plasmodium (1,5).</td></tr>
<tr><td>Indications and interchangeability</td><td colspan="5">Angina, sinusitis, bronchitis, pneumonias (mycoplasmic, chlamydial) (1-16); staphylococcal infections, diphtheria, pertussis, scarlatina (6-12); intestinal infections, plague, tularemia, syphilis, malaria (1,5); campilobacteriosis (1,5,12), urethritis, gonorrhea (15); ricketsiosis, toxoplasmosis (11); acne (1-6).</td></tr>
<tr><td>Side effects</td><td colspan="5">Allergic reactions, dyspepsia, multidrug resistance (1-16); protein metabolism disorders, teeth and bones formation disorders, nephrotoxicity, syndrome of brain pseudotumor (increase of intracranial pressure) (1-5); esophagus erosions (1-3); dysbacteriosis, superinfection, photodermatosis, hepatoxicity (1-5,15,16).</td></tr>
<tr><td>Doctor and pharmacist, remember!</td><td colspan="5">Tetracyclines aren't used simultaneously with antacids, iron-containing drugs, cyclosporine, vitamin C, anticoagulants, calcium-containing drugs, streptomycin, penicillin; drugs, containing dihydrated ergot alkaloids. Barbiturates, diphenin, carbamazepine increase tetracyclines' metabolism.
There is a synergism in case of combination of tetracyclines with aminoglycosides, lincosamides, macrolides. There is antagonism in case of combination of macrolides and azalides with penicillins, cephalosporins, lincosamides; synergism – with tetracyclines, streptomycin, sulfonamides.
Macrolides of the IInd and IIIrd generations accumulate in neutrophils and macrophages and are transported with them to inflammatory focus.
Erythromycin is incompatible with penicillin, tetracycline, lovastatin, aminophylline, astemizole.
Roxythromycin mustn't be used simultaneously with ergot drugs, bromocriptine.
Clarithromycin increases astemizole's cardiotoxic effect.
Before meals: 6,9,11. After meals: 1,3,5,7.</td></tr>
</table>

AMINOGLYCOSIDES AND GLYCOPEPTIDES

<table>
<tr><td>CLASSIFICATION</td><td colspan="3">AMINOGLYCOSIDES</td><td>GLYCOPEPTIDES</td></tr>
<tr><td>Peculiarities of the group</td><td colspan="3">Bactericidal antibiotics. Effectiveness against many G^- and several G^+ aerobic bacteria. Postantibiotic effect.</td><td>Effectiveness in case of severe generalized infections. Bactericidal antibiotics.</td></tr>
<tr><td>Drugs and their synonyms

• - acid-resistance</td><td>IST GENERATION
1. Streptomycin
•2. Neomycin
3. Canamycin
4. Monomycin</td><td>IIND GENERATION
5. Gentamycin (Garamycin)</td><td>IIIRD GENERATION
6. Amikacin 10.Izepamycin
7. Tobramycin 11.Paromycin
8. Netilmycin 12.Phramicetin
9. Sizomycin</td><td>13. Vancomycin (Edicine)
14. Teucoplanin (Targocide)</td></tr>
<tr><td>Mechanism of action</td><td colspan="3">Inhibition (irreversible) of protein synthesis in the microbial cell at the level of ribosomes. Binding to cytoplasmic microbial membranes → disruption of their permeability → loss of potassium ions, aminoacids, nucleotides by microbial cell.</td><td>Inhibition of synthesis of bacterial cell wall.</td></tr>
<tr><td>Spectrum of action</td><td colspan="3">Escherichia, klebsiella (1-11); proteus, shigella, salmonella (3-11); blue pus bacillus (5-9), brucella (1,5), mycobacterium tuberculosis (1,2,10), mycobacterium leprae (1), staphylococcus (1-10,12), plague causative agent (1,2).</td><td>Staphylococci (including penicillin- and methycillinresistant ones), streptococci, enterococci, corynebacteria, clostridia, listeria (13,14); micrococci (14), actinomycete (13).</td></tr>
<tr><td>Side effects</td><td colspan="3">Neurotoxicity, ototoxicity, nephrotoxicity; muscle relaxant effect, erythematous rash, fever, dyspepsia.</td><td>Phlebitis (13,14), “red man” syndrome (in case of rapid injection), rash, skin itch, nausea (13,14); hypotension, fever (13); diarrhea, bronchospasm, dizziness, headache (14).</td></tr>
<tr><td>Indications and interchangeability</td><td colspan="3">Tuberculosis (1), intestinal infections, pneumonia, sepsis (2-11); preoperative intestinal sterilization (2,3), pseudomonal infections (5-11), urinary tract infections (4-11); plague, leprosy, leishmaniasis (1-2); infected burns (1-6), infectious-inflammatory diseases in rhinopharyngeal region (12).</td><td>Severe generalized infections, caused by multidrug resistant staphylococci, streptococci; pseudomembranous colitis, prophylaxis and treatment of wound infections (13-14).</td></tr>
<tr><td>Doctor and pharmacist, remember!</td><td colspan="4">Aminoglycosides are incompatible with each other and other oto- and nephrotoxic drugs.
Streptomycin is incompatible with glucose, vitamin B_1, sodium thiosulfate, carbenicillin, erythromycin, muscle relaxants.
Neomycin is incompatible with penicillin.
Canamycin is incompatible with loop diuretics, ethacrynic acid, muscle relaxants, anesthetics; it potentiates antibacterial effect of penicillins, cephalosporins, fluoroquinolones.
Gentamycin is incompatible with vitamin B_2, phenobarbital, prednisolone, diphenine, dimedrol.
Amikacin mustn’t be used simultaneously with loop diuretics, carbenicillin, cephalosporins.
Tobramycin is incompatible with furosemide, ethacrynic acid.
Netilmycin is incompatible with muscle relaxants and polymyxines.
Glycopeptides mustn’t be combined with aminoglycosides, polymyxines, ethacrynic acid, avoiding increase of neuro- and nephrotoxicity.
It is impossible to mix streptomycin with penicillins and cephalosporins in one syringe. In case of long-term contact with streptomycin, one should put on gloves (dermatosis may occur). Streptomycin perverts the effects of reflex-acting analeptics.
Tobramycin shouldn’t be mixed with other drugs in one syringe or medicine dropper.</td></tr>
</table>

FLUOROQUINOLONES

Peculiarities of the group: Effectiveness against the majority of G^- and several G^+ bacteria (including penicillinase-producing aerobes). Good tolerance. Bactericidal drugs. Decrease of aggressive properties of bacteria, their virulent properties; inhibition of exotoxins, exoenzymes production; increase of microorganisms'sensitivity to phagocytosis.

CLASSIFICATION	Ist GENERATION	IInd GENERATION	IIIrd GENERATION
Drugs and their synonyms • - acid-resistance	•1. Ciprofloxacin (Cifran) •2. Ofloxacin (Tarivid) •3. Pefloxacin (Abactal) •4. Norfloxacin (Nomycin) •4a. NFlox-T (norfloxacin+thinidazole) •5. Enoxacin (Enoxor) •6. Rufloxacin	•7. Lomefloxacin (Maxaquin) •8. Sparfloxacin	•9. Fleroxacin (Quinodis) •10. Trovafloxacin •11. Grepafloxacin (Raxar)
Mechanism of action	Inhibition of bacterial DNA-gyrase (topoisomerase) → dysruption of DNA, RNA, protein biosynthesis in bacterial cell.		
Spectrum of action	Staphylococci, gonococci, legionella, campilobacteria, comma bacillus, brucellas, meningococci, shigella, salmonella, klebsiella, colon bacillus, mycobacteria of tuberculosis and leprosy, listeria, blue pus bacillus, intracellular microorganisms (chlamydia, mycoplasmas, ureaplasmas).		
Indications	Infections of respiratory, urinary tracts, soft tissues, bones, joints; prostatitis, intestinal infections, gonorrhea, intra-abdominal infections, chlamydiosis, ureaplasmosis, meningitis, sepsis, treatment of infections in oncologic patients.		
Side effects	Dysbacteriosis, allergic reactions, dysplasia of cartilagic tissue in children.		
Doctor and pharmacist, remember!	Ofloxacin shouldn't be used together with antacids, iron-containing drugs. Norfloxacin is incompatible with cyclosporine. Enoxacin mustn't be used together with oral indirect-acting anticoagulants. Lomefloxacin is used, when mycobacteria of tuberculosis are resistant to antituberculous drugs. Fluoroquinolones can increase photosensitivity of the tissues. Ciprofloxacin solution for intravenous injections mustn't be mixed with solutions with pH more than 7. Sparfloxacin shouldn't be used with cysaprid. After meals: 9.		

ANTIBIOTICS FROM DIFFERENT GROUPS

CLASSIFICATION	LINCOSAMIDES	FUSIDINES	CHLORAM-PHENICOLS	RIFAMPICINS	PHOSPHO-MYCINS	POLYMYXINS	OTHERS
Drugs and their synonyms	1. Lincomycin h/chl. (Neloren) 2. Clindamycin (Climycin)	3. Fusidic acid (Fusidine)	4. Chloramphenicol (Levomycetin, Ambophen) 5. Iruxol (comb.) 6. Syntomycin	7. Rifampicin	8. Phosphomycin (Phosphocin)	9. Polymyxin M sulfate	10.Spectino-mycin* (Cyrin)
* - antibiotic with aminocyclic structure, but it doesn't cause toxic effects, that are characteristic for aminoglycosides.							
Mechanism of action	Binding to bacterial ribosomes → inhibition of protein synthesis.			Inhibition of RNA synthesis by formation of complex compound with DNA-dependent RNA-polymerase.	Inhibition of synthesis of the bacterial cell wall.	Disruption of function of the microbial cell membranes by change of superficial cation effect.	Inhibition of protein synthesis in the microbial cell; disturbance of cell membrane integrity.
Spectrum of action	Staphylococci (1-3,7,8), streptococci (1,2,4-8), gonococcus (3,10), blue pus bacillus (7,9), clostridia (1,2,4), causative agent of gas gangrene, tetanus (1,2,5); bacteria of typhoid fever (4), diphtheria bacillus (1,2); colon bacillus, proteus, salmonellas (4,8,9); shigellas (4,9), legionella, tuberculosis mycobacteria (7); meningococcus (3,4,7), influenza bacillus (4,5,7,9), brucella (4,7,8), chlamydia, mycoplasma (4,5,7).						
Pharmacological effects	Therapeutic effect: antibacterial (1-10). Side effects: dysbacteriosis (1-4,7-9), pseudomembranous colitis (1,2), hematotoxicity (4,5), hepatotoxicity (4), neurotoxicity (7,9), nephrotoxicity (9), allergic reactions (1-10).						
Indications and interchangeability	Gas gangrene, tetanus (1,2,5); anaerobic infections of abdominal cavity and pelvis minor (1,2,8), infections of skin, soft tissues, bones (1-3,5-6); meningitis (3,4,9), intestinal infections (1,4,9), meningococcus carriers sanation, tuberculosis (7); staphylococcal infections (1-3,6-8), pseudomembranous colitis, osteomyelitis (3); infected wounds (3,5,6), gonorrhea (3,10), gonorrheal urethritis, cervicitis and proctitis (10), septicemia (1-3).						
Doctor and pharmacist, remember!	Lincomycin is incompatible with ampicillin, carbenicillin, cephalothin, cephaloridin, canamycin. Clindamycin shouldn't be used simultaneously with drugs, inhibiting intestinal peristalsis, neuromuscular transmission. Levomycetin is incompatible with glucose, hemopoiesis inhibitors, barbiturates, butamide, diphenine, neodicoumarine. Rifampicin is incompatible with oral anticoagulants, hypoglycemic drugs. Rifampicin is inductor of liver microsomal enzymes, that's why it stimulates metabolism of many drugs (cardiac glycosides, theophylline, glucocorticosteroids, contraceptives and others). Phosphomycin potentiates antibacterial effect of β-lactams and aminoglycosides. Lincomycin h/chl. mustn't be injected with canamycin in one syringe. Clindamycin is incompatible with vitamins B, ampicillin, aminophylline, barbiturates, calcium gluconate, magnesium sulfate in one syringe. Rifampicin colors urine and saliva in red, phosphomycin – in orange. Before meals: 4,7.						

SULFONAMIDES (SULFANILAMIDES)

<table>
<tr><td>CLASSIFICATION</td><td colspan="3">MONOCOMPONENT SULFONAMIDES</td></tr>
<tr><td rowspan="3">Drugs and their synonyms</td><td colspan="3">AGENTS, THAT ARE ABSORBED FROM INTESTINE</td></tr>
<tr><td>SHORT-ACTING ONES
1. Sulfanilamide (Streptocide)
2. Sulfathiazole (Norsulfazole)
3. Sulfadimidine (Sulfadimesine)
4. Sulfaethidole (Ethazole)
5. Sulfacarbamide (Urosulfan)
6. Sulfadiazine (Sulfazine)</td><td>LONG-ACTING ONES
7. Sulfamethoxipyridazine (Sulfapyridazine)
8. Sulfamonomethoxine
9. Sulfadimethoxine (Madribon)</td><td>SUPERLONG-ACTING ONES
10.Sulfamethoxipyrazine (Sulfalen, Kelphisine)</td></tr>
<tr><td colspan="2">AGENTS, THAT ARE NOT ABSORBED FROM INTESTINE
11. Phthalylsulfathiazole (Phthalazole)
12. Sulfaguanidine (Sulgine)
13. Phthalylsulfapyridazine (Phthazine)</td><td>AGENTS FOR LOCAL USE
14. Sulfacetamide (Sodium sulfacyl, Albucide)</td></tr>
<tr><td>Mechanism of action</td><td colspan="3">Competitive antagonism with PABA (inhibition of PABA inclusion into folic acid synthesis): block of conversion of folic acid into dehydrofolic acid (1-29).</td></tr>
<tr><td>Spectrum and type of action</td><td colspan="3">Streptococci, staphylococci, pneumococci, meningococci, gonococci, colon bacillus; dysentery and typhoid fever causative agents; proteus, chlamydia, toxoplasma, etc.
Type of action: bacteriostatic (1-17,25,26,28,29), bactericidal (18-24,27).</td></tr>
<tr><td>Indications and interchangeability</td><td colspan="3">Angina (1-4,7,9); bronchitis, pneumonia and others (2,4,7,9,10); pyelitis, cystitis, urethritis (4,5,7-10); cholecystitis (7-10); prostatitis, gonococcal urethritis (9); sepsis (2,3); meningitis (2,3,7,9); dysentery, enterocolitis (3,4,6,7,9,11-13); conjunctivitis, blepharitis (14); erysipelas (1,4,9); purulent infection: wounds, burns, bedsores, trophic ulcers (10); malaria (6,7,9).</td></tr>
<tr><td>Doctor and pharmacist, remember!</td><td colspan="3">Sulfonamides are incompatible with hemopoiesis inhibitors (analgin, butadion, levomycetin, etc.), oral hypoglycemic drugs (sulfonylurea derivatives), PABA derivatives (novocaine), α-, β-adrenomimetics, salicylates, diphenine, PASA, folic acid, diuretics, methotrexate.
Streptocide is incompatible with digitoxin, isadrin, hydrochloric acid, caffeine, mesatone, phenobarbital, adrenaline h/chl.
Norsulfazole is incompatible with novocaine, novocainamide, dicaine.
Sulfonamides often cause allergic reactions, dyspepsia, leukopenia, agranulocytosis.
Sulfonamides in acidic medium of urine precipitate as crystals in urinary tract, that’s why voluminous alkaline drinking is prescribed during treatment with sulfonamides.</td></tr>
</table>

SULFONAMIDES (CONTINUATION)

CLASSIFICATION	DERIVATIVES OF SULFONAMIDES AND SALICYLIC ACID	SULFONAMIDES COMBINED WITH TRIMETHOPRIM	AGENTS FOR EXTERNAL USE ONLY
Drugs and their synonyms	15. Salazodine (Salazopyridazine) 16. Salazodimethoxine 17. Salazosulfapyridine (Salazopyrine, Sulfasalazine)	18. Co-trimoxazole (Biseptol, Bactrim) 19. Lidaprim 20. Sulfatone 21. Ditrim 22. Poteseptil 23. Potesetta	24. Silver sulfadiazine (Dermazine) 25. Mafenide 26. Algimaf 27. Silver sulfathiazole (Argosulfan) 28. Streptonitole 29. Nitacide
Mechanism of action	Inhibition of cyclooxygenases → inhibition of prostaglandins synthesis (salicylates).	Block of conversion of dehydrofolic acid into tetrahydrofolic acid (trimethoprim).	Stability and effectiveness in medium, rich in PABA (25,26). Binding of Ag^+ ions to DNA of microbial cell → inhibition of growth and replication of microorganisms (24,27).
Spectrum of action	Very broad spectrum (including majority of G^+ and G^- bacteria; Pneumocystis carini, Staph. aureus, Str. pyogenes, Diploc. pneum., Pr. vulgaris, E. coli, H. influenzae, etc.) (18-23).		Broad spectrum (G^+ and G^- bacteria; blue pus bacillus, gas gangrene causative agent, etc.).
Pharmacological effects	Antibacterial (1-29), anti-inflammatory (15-17,28), immunomodulative (15-17), wound-purifying (24-27) effects.		
Indications and interchangeability	Non-specific ulcerative colitis (15-17); angina, cholecystitis, meningitis, erysipelas (20); bronchitis, pneumonia (18-23); chronic non-specific pulmonary diseases (22,23); pyelitis, cystitis, urethritis, sepsis (18-21); gynecologic infections, dysentery, enterocolitis (19,20); prostatitis, gonococcal urethritis (18-20); pyo-inflammatory processes in soft tissues: wound infection, burns, bedsores, trophic ulcers, fistulas, abscesses, phlegmons; atopic dermatitis, complicated by infection; pyodermatitis (20,24-29).		
Doctor and pharmacist, remember!	One should avoid to prescribe poteseptil simultaneously with diphenine, salicylates, phenylbutazone, naproxen. Before meals: 7. After meals: 15-18,22.		

ANTITUBERCULOUS DRUGS

CLASSIFICATION	IST LINE THERAPY (MAIN DRUGS)				IIND LINE THERAPY (RESERVE DRUGS)	
Drugs and their synonyms	ISONICOTINIC ACID HYDRAZIDE DERIVATIVES 1. Isoniazide 2. Phthivazide 3. Opiniazide (Saluzide) 4. Soluble saluzide	PARA-AMINO-SALICYLIC ACID (PASA) DERIVATIVES 5. PASA (Aminacyl) 6. Calcium benzamidosalicylate (Bepasc)	ANTIBIOTICS 7. Streptomycin sulfate 8. Streptosaluzide 9. Pasomycin 10. Rifampicin (Rifampin)	ISONICOTINIC ACID THIOAMIDE DERIVATIVES 11. Ethionamide 12. Prothionamide	ANTIBIOTICS AND FLUOROQUINOLONES* 13. Cycloserine 14. Florimycin sulfate (Viomycin) 15. Capreomycin sulfate (Capastat) 16. Lomefloxacin* (Maxaquin)	DRUGS FROM DIFFERENT GROUPS 17. Ethambutol (Combutol) 18. Pyrazinamide (Pyzina) 19. Thioaceta-zone (Thibon)
Mechanism of action	Formation of complex compounds with heavy metals ions, which are components of respiratory enzymes → inhibition of mycobacteria breathing.	Competitive antagonism with PASA → inhibition of mycobacteria growth and reproduction.	Inhibition of protein synthesis at the ribosome level (7-9); inhibition of mycobacterial RNA synthesis (10).	Binding to ions of divalent metals, which are coenzymes → inhibition of mycobacteria growth.	Inhibition of synthesis of mycobacterial cell wall (13), proteins (14,15). Inhibition of the DNA-gyraze enzyme (16).	Inhibition of mycobacterial RNA synthesis.
Pharmacological effect	Antituberculous (1-19) effect: tuberculostatic (1-9,11-15,17-19), tuberculocidal (7,10,16).					
Indications and interchangeability	Different forms and locations of tuberculosis (1-19); leprosy (10,11,19); pulmonary forms of tuberculosis in case of inefficiency of the 1st line drugs (14-16); tuberculosis of mucous membranes, tuberculous lymphadenitis (19).					
Side effects	Dyspepsia, allergic reactions (1-19); CNS disorders (1-4,7,8,13,14,16-18), hematologic disorders (5,10,18,19), gastrointestinal disorders (5,7,8,11,12), hepatotoxicity (10,18,19), ototoxicity (7-9,14).					
Doctor and pharmacist, remember!	Steptomycin is incompatible with muscle relaxants, glucose, vitamin B_1, sodium thiosulfate, carbenicillin, erythromycin and other drugs with ototoxic effect. Rifampicin is incompatible with oral anticoagulants, oral hypoglycemic drugs, hormonal contraceptives, digitalis drugs, quinidine, glucocorticoids. Ethionamide is incompatible with cycloserine. Viomycin cannot be used together with ototoxic antibiotics. Capreomycin cannot be used together with parenteral antituberculous drugs. PASA is incompatible with sulfonamides. Rifampicin colors sputum, lacrimal liquid, urine in red; it is inductor of liver microsomal enzymes. Ethambutol, PASA can be used by pregnants. Effectiveness of antituberculous drugs: Rifampicin> Streptomycin sulfate>Pyrazinamide> Ethionamide=Prothionamide> Ethambutol> Cycloserine> >Viomycin> PASA> Thioacetazone. Before meals: 10,13. After meals: 1,5,18,19.					

ANTIHELMINTHIC DRUGS

CLASSIFICATION	DRUGS FOR TREATMENT INTESTINAL NEMATODOSES	DRUGS FOR TREATMENT INTESTINAL CESTODOSES	DRUGS FOR TREATMENT EXTRAINTESTINAL HELMINTHIASES
Drugs and their synonyms	1. Piperazine adipinate 2. Bephynite hydroxynaphthaate (Naphthamon) 3. Thiabendazole (Menodel) 4. Mebendazole (Vermox) 5. Pyrantel (Combantrin) 6. Pyrvinium pamoate (Vanquin) 7. Levamizole (Decaris) 8. Tansy flowers 9. Levant wormwood flowers	10. Niclosamide (Fenasal) 11. Aminoacrichine 12. Pumpkin seeds	13. Ditrazine citrate (Loxuran) 14. Praziquantel (Biltricide)
Mechanism of action	Disruption of neuromuscular system functions in nematodes (1-3,5,7,13); irreversible disturbance of glucose utilization by helminths (4); paralysis of neuromuscular system in cestodes, destruction of their covering tissues (10,12,14); influence on the helminths' energy processes (6-9,11).		
Pharmacological effects	Antihelminthic (1-14), immunostimulative (7) effects.		
Indications and interchangeability	Ascariasis (1,2,5,7-9,13); enterobiasis (1-6,8); trichocephaliasis (2-5); ancylostomiasis (2,4,7); teniasis (4,10-12,14); diphyllobothriasis, hymenolepiasis (10-12,14); filariasis (13); schistosomiasis, trematodoses (14).		
Doctor and pharmacist, remember!	Ditrazine citrate shouldn't be used simultaneously with steroid agents. Mebendazole is incompatible with levamizole. Pyrantel is incompatible with piperazine. Before meals: 2,9-12. After meals: 3,5,6.		

ANTIFUNGAL DRUGS

CLASSIFICATION	ANTIFUNGAL ANTIBIOTICS	SYNTHETIC ANTIFUNGAL DRUGS			
Drugs and their synonyms	POLYENE ONES* AND OTHERS 1. Amphotericin B* (Fungisone) 2. Amphoglucamine 3. Nystatin* 4. Levorin* 5. Natamycin (Pimafucin) 6. Griseofulvin 7. Mycoheptin*	AZOLES 8. Clotrimazole (Canesten) 9. Ketoconazole (Nisoral) 10. Myconazole (Dactarine) 11. Econazole (Pevaril) 12. Isoconazole (Travogen) 13. Bifonazole (Mycospor) 14. Fluconazole (Diflucan) 15. Itraconazole (Orungal) 16. Tenonitrazole (Atrican) 17. Thioconazole (Vagistat) 18. Flutrimazole (Mycetal)	ALLYLAMINES, PYRIMIDINES*, NITROPHENOLS** 19. Terbinafin (Lamisil) 20. Naftifin (Exoderil) 21. Flucytosin*(Ancotyl) 22. Chlornitrophenol** (Nitrofungin)	DERIVATIVES OF UNDECYLENIC ACID 23. Undecin 24. Zincundan 25. Mycoseptin COMBINED DRUGS 31. Clion D 32.Mycozolone 33.Canderm-BG	AGENTS FROM OTHER CHEMICAL GROUPS 26. Cyclopyroxolamine (Batrafen) 27. Amorolfin (Loceril) 28. Tolcyclate (Tolmycen) 29. Tolnaphthate (Chinofungin) 30. Dequalinyl (Decamine)
Mechanism of action	Inhibition of basic enzymes of ergosterol (the main structural component of fungal cell wall) synthesis: squalylepoxidase (19,20,28,29), 14-reductase and 7-8-isomerase (27), cytochrome P-450-dependent enzymes (only of the fungi) (8-18, 31-33). Binding to sterols of cell membranes → increase of their permeability → destruction of fungal cells (1-5,7,23-25,30). Inhibition of nucleic acids synthesis and fungal cells reproduction (6,21). Block of aminoacids, phosphates, calcium ions transport through the fungal cell membranes (26).				
Pharmacological effects	Antifungal (1-33): fungicidal (1-5,7-21,23-28,30-33), fungistatic (6,8-33); antibacterial (4,8-18,20,22,26,30-33) effects.				
Indications and interchangeability	Systemic mycoses: candidosis (1-5,7,8-18), favus (5,6,9,19,20), cryptococcosis (1,2,7,14,15,21), histoplasmosis (1,2,7,9,14,15,19,26), blastomycosis (1,2,9,14, 15,19,26), aspergillosis (1,2,7,14,15,26), paracoccidioidomycosis (7,9,15,20,26,27), trichomoniasis (4,31). Local mycoses: candidosis (1-7,8-18,31-33); trichophytosis, microsporosis, epidermophytosis (6,8-20,22,23-25,26-33); onychomycosis (5,6,9,13-20,26,27), trichomycosis (6,9,19,31), eye mycosis (9,15), mouth mycosis (9,14,30), otomycosis (5,11).				
Doctor and pharmacist, remember!	Clotrimazole is used only for local applications. It is effective against streptococci, staphylococci, bacteroides and trichomonades. Ketoconazole is incompatible with antiulcer drugs (antacids, cholinolytics, H_2-histaminoblockers) because they decrease the acidity and its absorption. It is also incompatible with terfenadine, astemisole, prednisolone, lovastatin. Batrafen penetrates through the cornea. Nystatin is incompatible with glucose. Fluconazole, itraconazole, ketoconazole should be carefully prescribed for patients with liver dysfunction. Itraconazole mustn't be used together with indirect-acting anticoagulants, calcium antagonists, quinidine, vincristin, rifampicin, phenitoin, midazolam, triazolam, astemisole, terfenadine, cisaprid. After meals: 2,15. During meals: 6,9.				

ANTIVIRAL DRUGS

CLASSIFICATION	ABNORMAL NUCLEOSIDES	ADAMANTAN DERIVATIVES AND OTHERS*	PYROPHOSPHATE ANALOGUES	INTERFERONS	INTERFERONS' INDUCTORS	HIV-PROTEINASE AND REVERSE TRANSCRIPTASE* INHIBITORS
Drugs and their synonyms	1. Acyclovir (Zovirax, Herpevir) 2. Ribavirin (Virasol) 3. Ganciclovir (Cimeven) 4. Famciclovir (Famvir)	5. Rimantadine 6. Amantadine 7. Oxolin*	8. Sodium foscarnet (Triapten)	9. Interferon-α (Egyferon) 10. Interferon 2β (Reaferon) 11. Interferon- α-2β (Intron A)	12. Cycloferon (Neovir, Camedone) 13. Amixin	14. Saquinavir (Invirase) 15. Didanosine* (Videx) 16. Zidovudine* (Retrovir, Azydotimidine)
Mechanism of action	Inhibition of viral DNA and RNA synthesis.	Suppression of viral RNA transcription.	Inhibition of viral DNA-polymerase.	Block of synthesis of specific viral proteins.	Stimulation of synthesis of endogenous interferon in human organism.	Block of HIV-proteinase (14), reverse transcriptase (15,16).
Pharmacological effects	Antiviral (1-8), immunostimulative (1-2) effects.			Antiviral, immunostimulative, antitumor (9-13) effects.		Specific antiviral effect against HIV-infection (14-16).
Indications and interchangeability	Herpes (simplex, zoster), cytomegalovirus infections (1-4); influenza A, B, chickenpox, respiratory syncytial infections (2).	Prophylaxis and treatment of influenza A (5-7), herpes, adenovirus keratoconjunctivi-tis, papillomatosis, molluscum contagiosum (7); tick-borne encephalitis (5).	Herpes (8).	Prophylaxis and treatment of influenza (9,11); hepatitis, cytomegalovirus, herpes infection; viral pneumonia, HIV-infection, Kaposi's sarcoma (9-11); myeloleukemia (11).	Viral hepatitis (A, B), herpes, acute viral respiratory diseases, encephalomyelitis, chlamydiosis (12, 13).	HIV-infection (14-16).
Doctor and pharmacist, remember!	Ganciclovir is incompatible with imipenem-cilastatin. Interferon-2β is not recommended to use together with NSAIDs and glucocorticosteroids. Rimantadine is used for prophylaxis and early treatment of influenza in epidemic period. Only 0,25% and 0,5% oxolin ointment is used in ophthalmology. It is recommended to begin treatment in early stages of disease, while using sodium foscarnet. Interferon- α-2β shouldn't be prescribed to patients with mental disorders in anamnesis. Interferons mustn't be prescribed in case of kidneys functions disorders. After meals: 13, 14.					

ANTIMALARIAL DRUGS

<table>
<tr><td rowspan="3">CLASSIFICATION</td><td colspan="2">DRUGS, AFFECTING THE SCHIZOGONY (AGAMIC CYCLE OF DEVELOPMENT IN THE HUMAN ORGANISM)</td><td rowspan="2">DRUGS, AFFECTING THE SPOROGONY (GENITAL CYCLE OF DEVELOPMENT IN THE MOSQUITO ORGANISM)</td><td rowspan="3">COMBINED DRUGS</td></tr>
<tr><td>TISSUE CYCLE (LIVER)</td><td>BLOOD CYCLE (ERYTHROCYTE)</td></tr>
<tr><td colspan="2">SCHIZOTROPIC ONES</td><td>GAMONTOTROPIC ONES</td></tr>
<tr><td>Drugs and their synonyms</td><td><u>HISTOSCHIZOTROPIC:</u>
1. Pyrimethamine (Chloridine)
2. Proquanyl h/chl. (Bigumal)
3. Quinocide
4. Primaquine (Primachine)</td><td><u>HEMATOSCHIZOTROPIC</u>
1. Pyrimethamine
2. Proquanyl h/chl.
5. Chloroquine (Delagyl)
6. Quinine
7. Hydroxychloroquine (Plaquenyl)
8. Mefloquine (Lariam)</td><td>1. Pyrimethamine
2. Proquanyl h/chl.
3. Quinocide
4. Primaquine</td><td>9. Pyrimethamine + sulfamethapyrazine (Methakelfine)
10. Pyrimethamine + sulfadoxin (Fansidar)</td></tr>
<tr><td>Pharmacological effect</td><td colspan="4">Antiprotozoal (1-10): parasitocidal (3-7,9-10), parasitostatic (1-2) effect.</td></tr>
<tr><td>Indications and interchangeability</td><td colspan="4">Treatment of acute manifestations of malaria (1,2,5,7-9), treatment of malaria, resistant to chloroquine and other antimalarial drugs (6,10); prophylaxis of early malarial recidivations (1,2), prophylaxis of late malarial recidivations (3,4), public antimalarial prophylaxis (1,2,4,5,7,8), individual chemoprophylaxis in combination with chloroquine (4), leishmaniasis and toxoplasmosis treatment (1). Treatment of collagenoses (systemic lupus erythematosus, rheumatoid arthritis) (5,7), arrhythmias (extrasystole, fibrillation, etc.) (5,6).</td></tr>
<tr><td>Doctor and pharmacist, remember!</td><td colspan="4">All antimalarial drugs are very toxic.
Quinocide mustn’t be prescribed with other antimalarial drugs simultaneously.
Primaquine shouldn’t be used with acrichine and sulfonamides.
Chloroquine mustn’t be combined with sulfonamides, salicylates, glucocorticosteroids.
Pyrimethamine is antagonist of folic acid, disturbs its metabolism in the human organism, causes megaloblastic anemia.
Pyremethamine is excreted with mother’s milk and prevents malaria in newborns.
Quinocide, primaquine, quinine cause acute intravascular hemolysis with hemoglobinureal fever among patients with congenital insufficiency of glucose-6-phosphate dehydrogenase in erythrocytes.
Mefloquine has teratogenic effect: during all period of treatment and two months after it women in reproductive age should use contraceptives.
After meals: 2,3,5.</td></tr>
</table>

ANTISYPHILITIC DRUGS

CLASSIFICATION	ANTIBIOTICS			BISMUTH DRUGS	ARSENIC DRUGS	IODINE DRUGS
	PENICILLINS	CEPHALOSPORINS	MACROLIDES AND AZALIDES*			
Drugs and their synonyms	1. Benzylpenicillins 2. Benzatine benzylpenicillin (Extencillin, Bicillin-1) 3. Phenoxymethylpenicillin 4. Oxacillin (Prostaphlin)	5. Cephaloridine (Ceporine)	6. Erythromycin 7. Azithromycin* (Sumamed)	8. Biyoquinol 9. Bismoverol	10. Miarsenol 11. Osarsol (Acetarsol)	12. Potassium iodide 13. Sodium iodide
Mechanism of action	Inhibition of synthesis of the bacterial cell wall (1-5); disruption of protein synthesis in the bacterial cell (6-7).			Block of sulfhydryl (thiol) groups in the enzymatic systems of spirochetes.		
Pharmacological effects	Antispirochetal (1-11), antiprotozoal (11), anti-inflammatory (8-9), decompositing (8,12-13) effects.					
Indications and interchangeability	All stages of syphilis (1-4).	Syphilis, resistant to penicillins (5-7).		The 3rd stage of syphilis (10,11), treatment of different forms of syphilis in combination with penicillins (8,9); penicillin-resistant forms of syphilis, syphilis in patients with intolerance of the penicillins (8-11).	The 3rd stage of syphilis: gummas decomposition (12,13); optic nerve affection (13).	
Doctor and pharmacist, remember!	Penicillins are incompatible with macrolides, adrenaline, α-globulin, glucose, potassium iodide, vitamins C, P, K, B_1, B_{12}; streptomycin, anticoagulants, levomycetin. Oxacillin is incompatible with the bacteriostatic antibiotics. Solutions of benzylpenicillin sodium and potassium salts and timentine are incompatible with other drugs in one syringe. Erythromycin is not recommended to prescribe with acetylcystein, lincomycin, methylxanthines simultaneously. Potassium iodide is incompatible with papaverin h/chl. Drugs of bismuth and arsenic are toxic; they cause gingivitis, stomatitis, grey line at the gum border. Miarsenol causes jaundice, hepatitis and polyneuritis. Osarsol has also trichomonadocidal and amebocidal effects. Extencillin is only for intramuscular injection. Before meals: 7,11. After meals: 6,12.					

ANTISEPTICS AND DISINFECTANTS

CLASSIFICATION	HALOIDS	OXIDANTS	ACIDS AND ALKALIES	HEAVY METALS SALTS
Drugs and their synonyms	1. Chloramine B 2. Disodium monolasone (Pantocide) 3. Chlorhexidine 4. Triiodomethan (Iodoform) 5. Povidon-iodine (Betadine) 6. Iodine (lodinol, lodonat) 7. Iodopyrone	8. Hydrogen peroxide concentrated solution (Perhydrol) 9. Potassium permanganate 10. Benzoyl peroxide (Oxy 5, 10)	11. Salicylic acid 12. Benzoic acid 13. Boric acid 14. Azelaic acid (Skinoren) 15. Sodium tetraborate (Borax)	16. Mercury dichloride (Sulema) 17. Silver nitrate 18. Silver protein (Protargol) 19. Zinc sulfate
Mechanism of action	Halogenative and oxidative effect on microbial cell (protein denaturation and oxidation of enzymes).	Disruption of oxidation-reduction processes of protoplasmic proteins and enzymatic systems in microbial cell.	Denaturation of the protoplasmic proteins in microbial cell.	Protein denaturation, block of sulfhydryl groups of protoplasmic enzymatic systems in the microbial cell; formation of albuminates.
Pharmacological effects	Antiseptic, antibacterial (1-58); keratolytic (10,11,14); astringent, anti-inflammatory (17-19); antipedicular (13); adsorbing (58) effects.			
Indications and interchangeability	Water disinfection (2); hands disinfection (1-3,5,7); disinfection of instruments (1,3,5,16); disinfection of goods for medical care, apartments (1,16); disinfection of operative site (3,5-7); gastric lavage after intoxication (9), various skin diseases (externally: treatment of infected wounds, burns, ulcers, bedsores, erysipelas, eczema, etc.) (1-5,7-13,15,17); prophylaxis and treatment of oral cavity and nasopharynx infections (8,9,17-19), chronic otitis (13), conjunctivitis (13,17-19); syringing, rinsing, lavage in surgery, gynecology, urology, dentistry (8,9,15,18,19); acne (10,14).			
Doctor and pharmacist, remember!	Chlorhexidine is incompatible with iodine-containing drugs. Povidon-iodine mustn't be used in complex with enzymatic ointments. Silver nitrate solution must be prepared only before use. 0,1-0,2% potassium permanganate solution is used for gastric lavages in case of morphine, phosphorus intoxications. It isn't effective in case of atropine, cocaine, barbiturate intoxications. While working with mercury dichloride solution, one has to be careful. Mercury drugs are very toxic. 1% methylene blue solution is antidote to cyanide, carbon oxide, hydrogen sulfide. In small doses (1% solution – 0,1 ml per 1 kg of body weight) it's used for treatment intoxications by methemoglobin-forming poisons (nitrates, aniline and others).			

ANTISEPTICS AND DISINFECTANTS (CONTINUATION)

CLASSIFICATION	PHENOLS	DYES	NITRO-FURANS	DERIVA-TIVES OF 8-OXY-QUINOLINE	ALDEHYDES AND ALCOHOLS	DETERGENTS	TARS AND RESINS	ANTIBAC-TERIAL NATURAL DRUGS
Drugs and their synonyms	20. Phenol (carbolic acid) 21. Tricresol 22. Resorcin 23. Phenylsalicylate (Salol) 24. Polycresulen (Vagotyl) 25. Benzonaphthol 26. Feresol	27. Methylene blue 28. Brilliant green 29. Aethacri-dine lactate (Rivanol)	30. Nitrofural (Furacilin) 31. Furaplast 32. Lifusol 33. Furazolidone 34. Furasidin (Furagin) 35. Nifuratel (Macmiror)	36. Quinozole 37. Quiniophone 38. Nitroxoline (5-NOC)	39. Formaldehyde solution (Formalin) 40. Lysoform 41. Hexamethylen tetramine (Urotropine) 42. Ethanol	43. Cerigel 44. Ethonium 45. Roccal 46. Green soap 47. Decame-thoxin (Septephril) 48. Miramistin	49. Ichthammol (Ichthyol) 50. Vinisol 51. Cigerol	52. Sodium usninate 53. Novoimanin 54. Chloro-phyllipt 55. Ectericide 56. Baliz - 2 57. Eucalimin 58. Polyphepan
Mechanism of action	Block of enzymatic activity of dehydrogenases, protein denaturation.	Inhibition of enzymatic processes, formation of insoluble complex substances.	Reduction of nitro-group into amino-group, disruption of DNA function, inhibition of bacterial cell respiration.	Inhibition of protein synthesis, formation of metal chelates → increase of oxidative processes in protoplasm.	Block of enzymatic activity of dehydrogenases, protein denaturation.	Decrease of surface tension, disruption of the microbial cell wall permeability.	Bacteriostatic and bactericidal activity as a result of complex influence of bioactive substances.	
Indications and interchangeability	Disinfection of hands (36,39,40,42,43,45,46); disinfection of instruments (20,21,39,42,45); disinfection of goods for medical care (20,21,45); disinfection of apartments (20,21,40,45); disinfection of operative site (45); infectious intestinal diseases (23,25,30,33,37,54,58); various skin diseases (externally: treatment of infected wounds, burns, ulcers, bedsores, erysipelas, eczema, etc.) (22,24,27,28,32,34,36,37,44,48,49,57); prophylaxis and treatment of oral cavity and nasopharynx infections (29,47,53,54,57); inhalations in case of infectious-inflammatory diseases of respiratory tract (34,53,54,57); urinary tract infections (23,34,35); syringing, rinsing, lavage in surgery, gynecology, urology, dentistry (24,27,29,30,34-36,37,40,53,57); as preservatives in pharmaceutical industry (20,21,42); cervical erosions (54), eye diseases (30,41), conjunctivitis (29,30,34), disinsection (20), removal of papillomas, warts, corns (26); amebic dysentery, ulcerative colitis (37).							
Doctor and pharmacist, remember!	Before meals: 58. After meals: 33,34.							

ANTIALLERGIC DRUGS

CLASSIFICATION	HISTAMINE AND SEROTONIN* RECEPTORS BLOCKERS	MEMBRANE STABILIZERS AND ANTITRANSMITTER* AGENTS	GLUCOCORTICO-STEROIDS	SELECTIVE ANTAGONISTS OF LEUKOTRIENE D_4-RECEPTORS, COMBINED* DRUGS
Drugs and their synonyms	1. Oxatomide (Tinset) 2. Azelastine (Allergodil) 3. Loratadine (Claritin) 4. Terfenadine (Trexil) 5. Promethazine (Pipolphen) 6. Diphenhydramine (Dimedrol) 7. Chloropyramine (Suprastin) 8. Mebhydroline (Diazoline) 9. Clemastine (Tavegil) 10.Quifenadine (Fencarol) 11.Ciproheptadine* (Peritol) 12.Dimenhydrinate (Dedalone)	13.Sodium cromolyn (Intal) 14.Ketotifen (Zaditen) 15.Fenspirid* (Erespal)	16.Prednisolone (Depersolone) 17.Budesonid (Pulmicort) 18.Hydrocortisone butyrate (Laticort) 19.Triamcinolone acetonide (Fluorocort) 20.Momethasone furoate (Nasonex) 21.Dexamethasone (Fortecortin)	22.Zafirlukast (Acolat) 23.Montelukast (Singular) 24.Clarinase* 25.Coldrex night*
Mechanism of action	Block of histamine receptors: H_1 (1-4,8,14,24), H_1 and H_2 (5-7,9-12,25); block of serotonin receptors (11), stabilization of mast cells' membranes (1,13,14), block of histamine and serotonin receptors, inhibition of cytokines production (11,15); inhibition of immune reactions, decrease of histamine release and antibodies production (16-21); selective block of leukotriene D_4-receptors (22,23).			
Pharmacological effects	Antiallergic effect (1-25); decrease of bronchial smooth muscles spasm and capillaries' permeability (1-11,13-21,23); sedative (1,5-7,9,11,14,15,25), antiemetic (12), anti-inflammatory (5,6,13,14,16-22,25), immunosuppressive (16-21), potentiative (5-7,11) effects.			
Indications and interchangeability	Anaphylactic shock, angioneurotic edema (3,4,7,10,11,16-19,21); bronchial asthma (1,3,4,7,13-19,21-23); urticaria, allergic dermatitis, rhinitis, pollinosis (1-14,16-21,24); rheumatism, systemic lupus erythematosus (15-20); motion sickness (5,12), acute viral respiratory infections (25).			
Doctor and pharmacist, remember!	Antihistaminic drugs are incompatible with anticoagulants, promedol, emetics, M-cholinomimetics, tricyclic antidepressants, streptomycin, neomycin, canamycin. Oxatomide, diphenhydramine, chloropyramine, ciproheptadine, fenspirid are not recommended to use simultaneously with barbiturates, hypnotics, sedatives, opioid analgesics, tranquilizers. Terfenadine, loratadine mustn't be simultaneously used with ketoconazole, itraconazole, erythromycin, cimetidine. Diphenhydramine is incompatible with vitamin C, sodium bromide, gentamycin. Chloropyramine, coldrex night mustn't be combined with tricyclic antidepressants. Intal solution shouldn't be inhalated in mixture with bromhexine h/chl. and ambroxol h/chl. solutions. Treatment of patients with bronchial asthma and obstructive bronchitis with ketotifen should be stopped gradually. Before meals: 12,15,22. After meals: 8,10,11. During meals: 7,14.			

DRUGS FOR TRANSFUSIONAL THERAPY

CLASSIFICATION	PLASMA SUBSTITUTES	DRUGS FOR REHYDRATION AND DETOXICATION	DRUGS FOR ACIDOSIS CORRECTION	DRUGS FOR PARENTERAL FEEDING
Drugs and their synonyms	1. Albumin 2. Dextran (Polyglucin, Reopolyglucin) 3. Hydroxyethylated starch (Refortan) 4. Gelatin	5. Dextrose (Glucose) 6. Fructose (Levulose) 7. Polyvidone (Neohemodes) 8. Sodium chloride 9. Disalt 10. Ionosteril	11. Trometamol 12. Sodium hydrocarbonate	13. Aminosteril 14. Aminosol 15. Aminoped 16. Lipofundin MCT/LCT
Pharmacological effects	Restoration of volume of circulating blood; support of the colloid-osmotic blood pressure, increase of blood pressure, improvement of the rheologic properties of blood.	Decrease of intoxication effects, normalization of hemodynamics.	Decrease of acidosis effects, stabilization of acid-base balance.	The sources of aminoacids (13-15), fatty acids (16).
Indications and interchangeability	Collapse, shock (1-7); metabolic acidosis (11,12); detoxicative infusion therapy, acute loss of blood (1-8); toxicosis of pregnancy (7); parenteral feeding of children (15) and adults (13,14,16); protein loss after surgeries, burns (1,13,14); dissolution of drugs (5,6,8); dehydration of various genesis (diarrhea, vomiting, food infection) (9,10).			
Doctor and pharmacist, remember!	Glucose is incompatible with levomycetin, streptomycin. Dextran should not be infused in case of cerebral hemorrhage, skull injuries, increase of intracranial pressure. Albumin should not be infused in case of dehydration, thrombosis, arterial hypertension. Lipofundin must not be used by patients with ketoacidosis, adipose nephrosis, shock. When intravenous infusion of polyvidone is impossible, its subcutaneous infusion is permitted.			