

## SUBMODULLE № 2

### Medicines affecting afferent and efferent parts of the NS. Anti-allergic agents, correctors of pain and inflammation

#### List of drugs

1. Acetylsalicylic acid\*
2. Activated carbon
3. Almagel
4. Atenolol
5. Atropine sulfate
6. Bismuth subcitrate
7. Buthylscopolamine bromide
8. Calcium chloride
9. Celecoxib
10. Clonidine
11. Codeine\*
12. Diphenhydramine (Dimedrol)
13. Dobutamine
14. Doxazosin
15. Ephedrine
16. Epinephrine (Adrenaline)\*
17. Fentanyl
18. Hexametonium benzosulfonate
19. Indomethacin\*
20. Lidocaine\*
21. Loratadine\*
22. Meloxicam\*
23. Metoprolol (Corvitol)
24. Morphine\*
25. Naloxone
26. Neostigmine methylsulfate\*(Proserin)
27. Nimesulide\*
28. Paracetamol\*
29. Phenylephrine (Mesatone)
30. Pilocarpine\*
31. Pipecuronium\*
32. Pirenzepine
33. Platiphyllin
34. Procain (Novocain)
35. Propanidid
36. Propranolol
37. Reserpine
38. Salbutamol\*
39. Sodium diclofenac\*
40. Sodium methamizol\*
41. Suxamethonium iodide (Dithilin)
42. Tetrizolin\*
43. Trimeperidine

**Give the classifications, nomenclature, mechanism of action, pharmacological effects, indications, side effects, contraindications of:**

**Medicines affecting afferent innervation; local anesthetics; medicines affecting efferent innervation: cholinomimetics, anticholinesterase medicines, M-, N-cholinoblockers, adrenergic medicines, anti-adrenergic medicines, anti-allergic medicines, general anesthetics, narcotic analgesics, non-narcotic analgesics, NSAIDs**

**\* - write the prescription**

## STEP-1 – SUBMODUL 2

### 1. Lidocain

Tests
<p>1. As a result of cardiac infarction a patient had ventricle arrhythmia. A cardiac rhythm was normalized after injection of antiarrhythmic agent with local anaesthetic activity. What drug was injected?</p> <p><b>A Lidocain</b> B Novocaineamid C Verapamilum D Pananginum E Propranolol</p>
<p>2. Lidocaine was injected to a patient with disorders of cardiac rhythm. What pharmacological effect does this medicine have besides local anaesthetic activity?</p> <p><b>A Antiarrhythmic</b> B Somnolent C Febrifuge D Antidepressant E Nootropic</p>
<p>3. Tell doctor-enterner what drug from local anesthetics has antiarrhythmic actions?</p> <p><b>A Lidocaine</b> B Digoxin C Metoprolol D Propranolol E Chingamin</p>
<p>4. What medicine from local anesthetic group is used when a patient has cardiac rate abnormalities? a) lidocain b) paracetamol c) morphine hydrochloride d) sodium caffeine – benzoate e) nitrazepam</p>
<p>5. What local anesthetic is it better to buy in a pharmacy for anaesthesia during extraction of tooth?</p> <p><b>A Lidocaine</b> B Dicaine C Anaesthesin D Sovkaine E Cocaine</p>
<p>6. A patient with a heart rhythm disorder has been given lidocaine. Apart from the local anesthetic effect, this drug has the following pharmacological effect:</p> <p><b>A Antiarrhythmic</b> B Hypnotic C Antipyretic D Antidepressant E Nootropic</p>
<p>7. What local anesthetic is given to patients with cardiac rhythm disturbance?</p> <p><b>A. Lidocaine</b> B. Paracetamol C. Morphine hydrochloride D. Caffeine and sodium benzoate E. Nitrazepam</p>

### 2. Novocaine

Tests
<p>1. During local anaesthetization novocaine solution is usually compounded with solution of adrenaline hydrochloride. What is the purpose of this action?</p>

<p>a). *<b>Vasoconstriction</b></p> <p>b). Vasodilatation</p> <p>c). Decrease in smooth muscle tone</p> <p>d). Algesthesia reduction</p> <p>e). Increase in smooth muscle tone</p>
<p>2. A patient got an injection of 0.25% novocaine solution for the purpose of anaesthetization. Suddenly the patient has presented with red spots, intense sweating, tachycardia, bronchospasme, edema of nasal mucous membrane. What is the cause of this complication?</p> <p>a)* <b>Immediate allergy</b></p> <p>b) Abstinence syndrome</p> <p>c) Tachyphylaxis</p> <p>d) Delayed allergy</p> <p>e) Local irritation</p>

## Medicines affecting efferent innervations:

### *Cholinergic medicines*

#### 3. Atropine sulphate

Tests
<p>1. For research of internal bottom it is necessary to extend a pupil. What preparation is used for this purpose clinically?</p> <p><b>A Atropine sulfate</b></p> <p>B Pillokarpine hydrochloride</p> <p>C Pirensepine</p> <p>D Proserin</p> <p>E Anaprilin</p>
<p>2. At poisoning by phosphoorganic compound an atropine sulfate was used. What phenomenon is underlain in antidotal action?</p> <p><b>A Antagonism</b></p> <p>B Synergism C</p> <p>Adaptation</p> <p>D Chemical incompatibility</p> <p>E Potentiation</p>
<p>3. A patient who has renal colics was prescribed a spasmolytic from M-cholinergic antagonists. What medicine is it?</p> <p><b>a) atropine</b></p> <p>b) proserin</p> <p>c) galanthamine</p> <p>d) dithylin</p> <p>e) benzogecson</p>
<p>4. When copying of instruction to clinic use of atropine sulfate in section «Side effects» student noted: tachycardia, increase of blood ocular pressure, temperature rise, reddening. What typical side effect was missed?</p> <p><b>a) dry mouth</b></p> <p>b) drowse</p> <p>c) nausea d)</p> <p>vomiting</p> <p>e) excessive sweat</p>
<p>5. Name the most typical symptom of poisoning by atropine:</p> <p><b>A Dilation of pupils, which are irresponsible on light</b></p> <p>B Narrowing of pupils which are irresponsive on light</p> <p>C Perspiration enhances</p> <p>D Bradycardia</p> <p>E Decline of ophthalmotonus</p>
<p>6. A child has accidently drunk a solution that was used by his grandmother for glaucoma treatment. The solution turned out to be pilocarpine hydrochloride. What drug can be used as an</p>

antidote? <b>a) Atropinum</b> b) Carbacholinum c) Pentaminum d) Aceclidinum e) Benzohexonium
7. A 40-year-old patient suffers from bronchial asthma and cardiac rhythm disturbance in form of bradyarrhythmia. Drug of which pharmacological group should be administered for bronchospasm suppression? <b>a). M-cholinergic antagonists (M-anticholinergics)</b> b). M-cholinomimetics c). Beta-blockers d).Cholinesterase inhibitors e). Muscle relaxant
8. During an operation a dentist needs to reduce salivation in a patient. The dentist has to use a drug of the following pharmacological group: <b>a)Muscarinic receptors blockers</b> b) Muscarinic cholinomimetics c) Muscarinic and nicotinic cholinomimetics d) Adrenoceptor blocker e) Adrenomimetics
9. .A 40-year-old patient suffers from bronchial asthma and cardiac rhythm disturbance in form of bradyarrhythmia. Drug of which pharmacological group should be administered for bronchospasm suppression? <b>a). Muscarinic receptor blockers (M-cholinergic antagonist)</b> b). Muscarinic cholinomimetics c). Beta-adrenoceptor blockers d).Anticholinesterase drugs e). Muscle relaxants
10. A patient has been administered a spasmolytic from the group of muscarinic receptor antagonists as a part of complex treatment for renal colics. Specify this drug: <b>A. Atropine</b> B. Benzohexonium C. Neostigmine D. Galantamine E. Dithylinum
11. A 40-year-old patient has a history of bronchial asthma and bradyarrhythmia. In order to eliminate bronchospasm, the drugs of the following pharmacological group should be administered: <b>A M-anticholinergics</b> B B-adrenergic blocking agents C M-cholinergic agents D Anticholinesterase agents E Muscle relaxants
12. The patient with hepatic colic has been prescribed spasmolytic of muscarinic receptor antagonists group as a part of his complex therapy. What drug is it? <b>A. Atropine</b> B. Proserin C. Galantamine D. Dithylin E. Benzohexonium
13. A patient takes blocker of muscarinic cholinoreceptors of parasympathetic nerve organ synapses. What changes of heart activity will be observed? <b>A. Heart rate rise</b> B. Heart rate and heart force fall C. Heart rate fall

D. Heart force fall E. Prolongation of atrioventricular delay
14. A patient with renal colic has been administered a spasmolytic from the group of M-cholinergic antagonists as a part of the complex therapy. Specify this drug: <b>A. Atropine</b> B. Proserin C. Galantamine D. Dithylinum E. Benzohexonium

#### 4. Pilocarpine

Tests
1. Recommend a patient with glaucoma a preparation from a group of M-cholinomimetics. <b>A Pilocarpine hydrochloride</b> B Ephedrine hydrochloride C Sulfacilum Sodium D Atropine sulfate E Levomyctin
2. For treatment of glaucoma a doctor decided to prescribe cholinomimetic agent of direct action. What preparation is it? <b>A Pilocarpine hydrochloride</b> B Zinc sulfate C Sodium sulfacyl D Platyphyllin E Atropine sulfate
3. Patient with glaucoma was prescribed pilocarpine hydrochloride to decrease pressure. What pharmacological group does the medicine belong to? <b>A M-cholinomimetics</b> B Beta-adrenoceptor antagonists C Sympatholytics D Ganglionic blockers E Alfa- adrenoceptor antagonists
4. Pilocarpine was prescribed. What mechanism of action does this medicine have? <b>a) M – cholinergic receptor stimulation</b> b) M – cholinergic receptor blockade c) $\alpha$ – adrenoreceptors stimulation d) $\beta$ – adrenoreceptors blockade e) $H_2$ – histamine receptor blockade
5. What medicine from cholinotropic group is used for glaucoma treatment, because it reduces intraocular pressure? <b>a) pilocarpine</b> b) atropine c) platyphyllin d) scopolamine e) methacin
6. Name the drug that causes miosis and lowers intraocular pressure <b>A. *Pilocarpine hydrochloride</b> B. Fenofibrate C. Nitrazepam D. Atropine sulphate E. Suxamethonium chloride
7. Specify the drug that constricts pupils and reduces intraocular pressure: <b>A. Pilocarpine hydrochloride</b> B. Fenofibrate C. Nitrazepamum

D. Atropine sulfate E. Dithylinum
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### 5. Proserin (Neostigmine methylsulphate)

Tests
<p>1. For the patient of 53 years old glaucoma is diagnosed. For treatment a doctor prescribed anticholinesterase medicine as eye drops. Name this drug.</p> <p><b>A Proserin</b> B Carbacholin C Pilocarpine hydrochlorid D Atropine sulfate E Aceclidin</p>
<p>2. A patient who has glaucoma was prescribed proserin as eye drops. To what pharmacological group does this medicine belong?</p> <p><b>a) Anticholinesterase reversible acting agent</b> b) M – anticholinergic drug c) N – cholinomimetic d) Adrenergic blocker e) Adrenoceptor agonist</p>
<p>3. What should one prefer to suppress intestinal atony in a postoperative period?</p> <p><b>a) proserin</b> b) atropine c) platyphyllin d) pirelin e) methacin</p>
<p>4. Old patient had postoperative atony of the intestine. What anticholinesterase medicine should be prescribed?</p> <p><b>A Prozerin B</b> Dithylinum C Pilocarpin hydrochloride D Atropine sulfate E Metoprolol</p>
<p>5. A child was hospitalized with the symptoms of poisoning by the alkaloids of belladonna. What preparation should be used as an antidote?</p> <p><b>A Prozerin</b> B Magnesium sulfate C Caffeine-sodium benzoate D Paracetamol E Sodium valpro</p>
<p>6. Find in your pharmacy reversible-acting anticholinesterase drug for treatment of infestine.</p> <p><b>A Prozerin B</b> Phosphacol C Benzoheconium D Atropine sulfate E Dithylin</p>
<p>7. A hospital admitted a child with signs of poisoning with belladonna alkaloids. What drug should be applied as an antidote?</p> <p><b>a). * Proserin</b> b). Magnesium sulfate c). Sodium valproate d). Sodium caffeine benzoate e). Paracetamol</p>
<p>8. During a surgical operation the muscle relaxant tubocurarine chloride was used. What antagonist should be injected in order to allow the patient to breathe independently?</p>

<p>a). *<b>Neostigmine (Proserinum)</b>  b). Cytitonum  c). Dithylinum  d). Aethimizolum  e). Benzohexonium</p>
<p>9. A patient with dry mouth, photophobia and blurred vision has been delivered to the emergency department. Objectively: the skin is hyperemic, dry, mydriatic pupils and tachycardia are present. He has been diagnosed with belladonna alkaloids intoxication. Which of the drugs should be given as an antidote?  <b>A. Neostigmine</b>  B. Pylocarpine  C. Armin  D. Aceclidine  E. Dipiroxim</p>
<p>10. From the pharmaceutical stock select an anticholinesterase drug to be administered to the patients with atony of the intestine and urinary bladder in the postoperative period:  <b>A. Dithylinum B.</b>  Phosphacolum <b>C.</b>  Atropine sulfate <b>D.</b>  Benzohexonium  <b>E. Proserin</b></p>
<p>11. A patient has been administered a competitive inhibitor of cholinesterase. Name it:  <b>A. Proserin</b>  B. Aspirin  C. Sodium diclophenac  D. Indometacin  E. Allopurinol</p>

### 6. Dithylinum

<p>Tests</p>
<p>1. To the interhospital pharmacy an order from a surgical department on the medicine of the neuromuscular relaxant group with depolarizing type of action for the leadthrough of surgical interferences was made. What medicine was ordered?  <b>A Dithylin B</b>  Famotidine  C Atropine sulfate  D Methacine  E Hygronium.</p>
<p>2. An interhospital pharmacy got an order from a surgical department for a depolarizing muscle relaxant for surgical interventions. What drug was ordered?  <b>a). * Dithylinum</b>  b). Hydronium  c). Nicotine  d).Methacine  e). Atropine sulfate</p>
<p>3. A man got an injection of curarelike substance causing the relaxation of all skeletal muscles. What is its mechanism of action?  <b>A. Block of cholinergic receptors of postsynaptic membrane B.</b> Disturbance of acetylcholine synthesis  C. Block of Ca<sup>2+</sup>-channels of presynaptic membrane  D. Disturbance of cholinesterase synthesis  E. Disturbance of acetylcholine secretion</p>

### 7. Benzohexonium

<p>Tests</p>
<p>1. A patient with hypertensive crisis received an injection of ganglionic blocker benzohexonium.</p>

What side effect might be expected after the drug injection?

- a). \* **Orthostatic hypotension**
- b). Diarrhea
- c). Central nervous system depression effect
- d). Withdrawal (abstinence) syndrom
- e). Taste violation

### ***Adrenergic medicines***

#### **8. Adrenaline hydrochloride (Epinephrine hydrochloride)**

##### Tests

1. A patient after bee's stings has angioedema (Quincke's edema). Which drug should be immediately inject to eliminate this condition?

- A Epinephrine hydrochloride**
- B Sodium chloride
- C Platyphyllin hydrotartrat
- D Atropine sulfate
- E Anaprilin

2. For an extension and strengthening of local anesthetic activity of lidocaine also for diminishing of bleeding probability during the extraction of a tooth, a dentist used preparation from the group of adrenergic agonist. Name this preparation.

- A Adrenaline hydrochloride**
- B Salbutamolum
- C Isadrinum
- D Prozerin E
- Anaprilin

3. A patient has anaphylactic shock developed after a vaccination. Name the preparation of choice in such a case.

- A Adrenaline hydrochloride**
- B Anaprilin
- C Naphthizin
- D Salbutamol
- E Dithylin

4. Help student from medical university to choose adrenergic drug for treatment of anaphylactic shock.

- A Adrenaline hydrochloride**
- B Clofelin
- C Galasoline
- D Fenoterol E
- Isadrin

5. During the reaction of sensibilisation to benzylpenicillin anaphylactic shock appeared. What medicine should be injected in the place of the antibiotic injection?

- a) \*adrenalin hydrochloride**
- b) norepinephrine hydrotartrate
- c) atropine sulfate
- d) mesaton
- e) cephtriaxon

6. During the sensitifity test for benzylpenicillin a patient developed anaphylactic shock. The following preparation must be injected around the spot of antibiotic injection:

- a). \* Adrenaline hydrochloride**
- b). Atropine sulfase
- c). Propranolol
- d). Noradrenaline hydrotartrate e). Ceftriaxon

7. During local anaesthetization novocaine solution is usually compounded with solution of adrenaline hydrochloride. What is the purpose of this action?



<p>a). * <b>Vasoconstriction</b></p> <p>b). Vasodilatation</p> <p>c). Decrease in smooth muscle tone</p> <p>d). Algesia reduction</p> <p>e). Increase in smooth muscle tone</p>
<p>8. Epinephrine is used to prolong the effect of novocaine during infiltration anesthesia. What epinephrine action is this effect caused by?</p> <p>A. *<b>Vasoconstriction</b></p> <p>B. Potentiation of novocaine action at CNS level</p> <p>C. Suppression of nerve endings and conductors functioning</p> <p>D. Vasodilatation</p> <p>E. Suppression of tissue esterases</p>

### 9. Epinephrine hydrochloride

<p>Tests</p>
<p>1. A patient after bee's stings has angioedema (Quincke's edema). Which drug should be immediately injected to eliminate this condition?</p> <p>a). * <b>Epinephrine hydrochloride</b></p> <p>b). Atropine sulfate</p> <p>c). Sodium chloride</p> <p>d). Platyphyllini</p> <p>hydrotartras e). Anaprilinum</p>
<p>2. A patient suffering from allergic rhinitis was prescribed ephedrine in form of nasal drops. The patient has significantly benefited from nasal instillation, and this stimulated him to use the drug every 2 hours. But under these conditions the drug appeared to be ineffective. What is the most likely cause of this phenomenon?</p> <p>a). * <b>Tachyphylaxis</b></p> <p>b). Allergy</p> <p>c). Idiosyncrasy</p> <p>d). Cumulation</p> <p>e). Drug dependence</p>

### 10. Dobutamine

<p>Tests</p>
<p>1. To the patient with acute cardiac insufficiency and intolerance to cardiac glycosides. Dobutamine was injected. What is the mechanism of action for this preparation?</p> <p><b>A Stimulation of beta<sub>1</sub>-adrenoreceptors</b></p> <p>B Stimulation of alpha-adrenoreceptors</p> <p>C Blockade of K<sup>+</sup>, Na<sup>+</sup>-ATP-ase</p> <p>D Oppressing of activity of phosphodiesterase enzym</p> <p>E Stimulation of M-cholinoreceptors</p>
<p>2. A patient with acute heart insufficiency and cardiac glycosides intolerance got an injection of dobutamine. What is the mechanism of its action?</p> <p>a). *<b>Stimulation of β<sub>1</sub>-adrenoreceptors</b></p> <p>b) Stimulation of α<sub>1</sub>-adrenoreceptors</p> <p>c) Blockade of K<sup>+</sup>, Na<sup>+</sup>-adenosine triphosphatase</p> <p>d) Inhibition of phosphodiesterase activity</p> <p>e) Stimulation of muscarinic cholinoreceptors</p>
<p>3. Dobutamine has been administered to the 49-year-old-patient with acute cardiac failure and cardiac glycoside intolerance. What is this drug's mechanism of action?</p> <p><b>A. Stimulation of β<sub>1</sub>-adrenoreceptors</b></p> <p>B. Stimul'tion of α<sub>1</sub>-adrenoreceptors</p> <p>C. Blockade of K<sup>+</sup>-, Na<sup>+</sup>-adenosinetriphosphatase</p> <p>D. Suppression of phosphodiesterase activity</p> <p>E. Stimulation of M-cholinergic receptors</p>

## 11. Clonidine

### Tests

1. A patient with hypertensive crisis has been given an intravenous injection of **clonidine**. What mechanism underlies the antihypertensive effect of clonidine?

**A Stimulation of presynaptic central  $\alpha_2$ -adrenoceptors**

B Blockade of peripheral  $\alpha_1$ -adrenoceptors

C Blockade of beta-adrenoceptors

D Blockade of N-cholinergic receptors

E Direct myotropic effect on blood vessels

## 12. Salbutamol

### Tests

1. A patient with bronchial asthma takes preparation from the group of beta-adrenergic agonists. Name this preparation.

**A Salbutamol**

B Doxazozin

C Aceclidin

D Atropine sulfate

E Metoprolol

2. To the patient with bronchial asthma for the removal of attack  $\beta$ -adrenoceptor agonist was prescribed. Name this preparation.

**A Salbutamol**

B Adrenaline hydrochloride

C Droperidol

D Clofelin

E Isadrin

3. A woman of 30 years old, with the threat of abortion was injected Salbutamol which reduced contractive activity of myometrium. What is the mechanism of action of this preparation?

**A Stimulation is a beta-2-adrenoreceptors**

B Stimulation of alfa-adrenoreceptors

C Blockade is a beta-1- adrenoreceptors

D Blockade of monoaminoksidases

E Blockade of phosphodiesterases

4. A patient was prescribed a medicine from  $\beta_2$ -adrenoceptor agonist to treat bronchial asthma. Choose this medicine:

**a) Salbutamol**

b) Diazepam

c) Doxycycline hydrochloride

d) Nitroglycerin

e) Digoxin

5. A patient who has a bronchial asthma was prescribed salbutamol after which signs of spasm have disappeared. It is connected with the stimulation of:

**a)  $\beta_2$ -adrenoreceptors**

b)  $\alpha_1$  – adrenoreceptors c)

M - cholinergic receptor

d) acetylcholine synthesis

e)  $\beta_1$  – adrenoreceptors

6. A patient with bronchial asthma was prescribed salbutamol that has led to relief of bronchospasm symptoms. This is associated with stimulation of:

a).  $\beta_1$ - adrenoreceptors **b).**

**\* $\beta_2$ - adrenoreceptors c).**

$\alpha_1$ - adrenoreceptors

d). Acetylcholine synthesis

e). Muscarinic cholinoreceptors

7. When fenoterolum for inhalations is not available in a pharmacy, it can be substituted by the

<p>following drug from the group of bronchoselective beta-2-adrenomimetics:</p> <p><b>a)* Salbutamolum</b></p> <p>b) Ephedrinum</p> <p>c) Metacinum</p> <p>d) Euphyllinum</p> <p>e) Isadrinum</p>
<p>8. A patient with bronchial asthma has been administered a drug from the group of beta-adrenergic agonists. Specify this drug:</p> <p>A. Nitroglycerine</p> <p>B. Doxycycline hydrochloride</p> <p><b>C. *Salbutamol</b></p> <p>D. Digoxin</p> <p>E. Diazepam</p>
<p>9. A patient has been diagnosed with bronchial asthma. Specify a medicament that can be administered for asphyxiation:</p> <p><b>A. Salbutamol</b></p> <p>B. Diclofenac sodium</p> <p>C. Paracetamol</p> <p>D. Anapriline</p> <p>E. Acetylcysteine</p>

### 13. Propranolol (Anaprilin)

Tests
<p>1. Give an advice to patient with bronchial asthma and diagnosis as hypertensive patient. Specify hypertonic preparation, which causes side effect to that patient.</p> <p><b>A Propranolol</b></p> <p>B Drotaverin C</p> <p>Prasosin</p> <p>D Magnesium sulfas</p> <p>E Lysinopril</p>
<p>2. At the pharmacy a drugstore manager asks a pharmacist: which of the remedy are used for tachyarrhythmia treatment?</p> <p><b>a) Propranolol</b></p> <p>b) Enalapril</p> <p>c) Adrenalin</p> <p>d) Proserin</p> <p>e) Atropine</p>
<p>3. To treat extrasystolia nonselective <math>\beta_1</math>, <math>\beta_2</math>-adrenoceptor antagonist was used. What is the name of this medicine?</p> <p><b>a) propranolol</b></p> <p>b) atenolol</p> <p>c) phentolamine</p> <p>d) prososin</p> <p>e) reserpine</p>
<p>4. A patient with essential hypertension the drug from nonselective beta-adrenoceptor antagonists was prescribed. Name this preparation:</p> <p><b>A *Anaprilin</b></p> <p>B Prazozin C</p> <p>Prozerin</p> <p>D Adrenaline hydrochloride</p> <p>E Labetalol</p>
<p>5. A 60-year-old patient has essential hypertension stage II, coronary disease, bronchial asthma. After pharmacotherapy correction the patient exhibited a bronchospastic attack, intensified dyspnea. What drug provoked this complication?</p> <p><b>a)* Propranolol</b></p>

b) Salbutamol c) Nifedipine d) Euphyllinum e) Mucaltinum
6. A 52-year-old patient complains on having increased arterial pressure for a month. She has a 5-year history of bronchial asthma. What group of hypotensive drugs should NOT be recommended to the patient? <b>a). * Beta-adrenoreceptor blockade</b> b). Angiotensin receptors blockade c) Calcium channel blockers d) Diuretics e) Tranquilizers
7. It is required to diminish pump function of patient's heart. This can be done by means of blockers of the following membrane receptors: <b>A. <math>\beta</math>-adrenoreceptors</b> B. Nicotinic cholinergic receptors C. Muscarinic cholinergic receptors D. $\alpha$ -adrenoreceptors E. Dopamine receptors

#### 14. Metoprolol

Tests
1. To a patient with an angina pectoris Metoprolol was prescribed. What pharmacological effect of this preparation is used for treatment of angina pectoris? <b>A Antianginal</b> B Hypotensive C Antiarrhythmic D Antiaggregatic E Broncholytic
2. To the patient of 56 years old with ischemia of heart metoprolol was prescribed . What mechanism of beta-adrenoblockers actions used for treatment of on this disease? <b>A Decrease of oxygen consumption by myocardium (or increase of oxygen supply to myocardium)</b> B Increase the requirement of myocardium in oxygen C Extend coronal vessels D Diminish tone of peripheral vessels E Narrow coronal vessels
3. To the patient with hypertension for decrease of blood pressure metoprolol was prescribed. What is mechanism of action of this preparation: <b>A Blocking of beta-adrenoreceptors</b> B Blocking of alfa-adrenoreceptors C Indirect adrenomimetic action D Spasmolytic action E Blocking of angiotensin receptors
4. Hypertensive patient has been prescribed medicine from beta- adrenergic receptor blockers for decrease of blood pressure. Name that medicine/ <b>A Metoprolol</b> B Magnesium sulfate C Enalaprilum D Potassium losortan E Reserpine
5. A patient is prescribed metoprolol to treat his hypertension blood pressure has significantly reduced. What mechanism of antihypertensive action does this medicine have? <b>a) selective blockade of <math>\beta_1</math> – adrenoreceptors;</b> b) selective blockade of $\alpha_1$ – adrenoreceptors;

<p>c) blockade of angiotensin converting enzyme;  d) suppression of angiotension receptors;  e) suppression of calcium channel</p>
<p>6. A patient with hypertension was administered metoprolol for the arterial pressure reduction. What is its mechanism of action?  <b>a). * Beta adrenoreceptor blocade</b>  b). Angotensinic receptors blocade  c). Inderect adrenomimetic action  d).Antispasmodic  e). Alfa adrenoreceptor blocade</p>

### 15. Calcium chloride

<p>Tests</p>
<p>1. After an intravenous injection of magnesium sulfate respiratory impairment began, arterial pressure decreased. What antidote should one inject?  <b>Calcium chloride</b>  Potassium  chloride  Camphor  Caffeine  Unithiol</p>

### 16. Dimedrol

<p>Tests</p>
<p>1. Selling dimedrol to patient for him to relieve contact dermatitis about what typical drug side effect should you warn him?  <b>a) Dry mouth, sleepiness</b>  b) Short cough, closeness  c) Disposition to sweating; improvement to appetite  d) Stimylation of CNS, palpitation  e) Arterial pressure decrease</p>

### 17. Loratadine

<p>Tests</p>
<p>1. A pharmacist was asked by patient who had neurodermatitis to recommend an antihistaminic drug of 2 generation without inhibitory action on CNS. What is this drug?  <b>a) Loratadine</b>  b) Dimedrol c)  Diazolin d)  Tavegil  e) Phenkarol</p>
<p>2. A student asked a pharmacist to advise him a medication to suppress signs of allergic rhinitis which appear during time blossom. What medication could be used?  <b>a) loratadine</b>  b) adrenaline, epinephrine  c) propranolol  d) ambroxol  e) lozartan</p>
<p>3. A patient who is a driver addresses a doctor. He has rhinitis, hacking, lacrimation which has appeared during ambrosia blossom. What antiallergenic drug should be prescribed?  <b>a) loratadine</b>  b) benadryl  c) prednisolone  d) calcium chloride  e) amoxicilin</p>
<p>4. A patient with a contact allergic dermatitis after bee stings was prescribed loratadine. Itching and painfulness disappeared. What mechanism of antiallergic action has this medicine?  <b>a) suppression of H<sub>1</sub> – histamine receptors;</b></p>

<p>b) suppression of H<sub>2</sub> – histamine receptors;  c) blockade of D<sub>4</sub> – leukotriene receptors;  d) reduction of leukotriene release;  e) antiserotonin activity</p>
<p>5. Recommend for a patient a drug for allergy treatment.  <b>A Loratadin</b>  B Naphthyzin  C Levamisole  D Glybenclamide  E Ascorutin</p>
<p>6. A man came to a pharmacy and asked to recommend him a drug for treatment of allergic rhinitis that occurs in the period when lime tree is in bloom. What drug may be applied?  <b>a)* Loratadine</b>  b) Adrenaline c)  Anapriline d)  Ambroxol e)  Lozartan</p>
<p>7. Consult a patient on which antihistamine drug DOES NOT have sedative and hypnotic effect:  <b>A Loradatine</b>  B Diphenhydramine  C Promethazine  D Suprastinum  E Tavegil (Clemastine)</p>
<p>8. The student asks the pharmacist to recommend him the drug to relieve allergic rhinitis symptoms he suffers from when lime tree is in bloom. What drug can be recommended in this case?  <b>A. Loratadine</b>  B. Epinephrine  C. Propranolol  D. Ambroxol  E. Losartan</p>

### 18. Morphine

<p>Tests</p>
<p>1. A patient has cancer to lungs, which is accompany to sharp pain and cough. What analgetic remedy is reasonable to use?  <b>a) Morphine hydrochloride</b>  b) Analgine  c) Glaucine  d) Libexin  e) Paracetamol</p>
<p>2. To narcological department a patient was delivered. His diagnosis was morphine dependence. The doctor noted decreasing of morphine pharmacological activity. What is the name for the phenomenon when the effectiveness of drug reduces after repeated introduction?  <b>a) get used to drug</b> b)  material cumulation c)  functional cumulation  d) antagonism  e) summation</p>

### 19. Promedol (Trimeperidine)

<p>Tests</p>
<p>1. Pregnant woman during childbirth has weak uterine contraction and strong pain symptom. Which drug is it necessary to prescribe in this case?  <b>A Promedol</b>  B Morphine hydrochloride  C Analgin</p>

D Diclofenac Sodium E Fentanil
2. Help a doctor to choose narcotic analgesic which can be used for anaesthetizing of births? <b>A Promedol B</b> Paracetamol C Codeine phosphate D Fentanyl E Analgin
3. Emergency was called to a patient of 45 who has renal colic. Which medicine of 5 narcotic analgesics should one prefer? <b>a) promedol</b> b) morphine c) tramadol d) pentalin e) oxeladin
4. Which one of the drugs listed below is potentially addictive? <b>A. Trimeperidine</b> B. Acetylsalicylic acid C. Naloxone D. Diclofenac sodium E. Paracetamol

## 20. Naloxone

### Tests

1. To emergency department a patient in the comatose state was hospitalized, who had a considerable hypotension, bradycardia, hypothermia, anuria, Cheyne-Stokes breathing. A diagnosis is set: poisoning Morphium. Recommend to a doctor some antagonist of morphium for the leadthrough of antidote therapy <b>A Naloxone</b> B Pentazocinum C Nalorfinu hydrochlorid D Kordiamine E Lobeline
2. A patient has acute poisoning by Morphine. What preparation is it needed to use as an antidote? <b>A Naloxone</b> B Lobeline C Bemegrade D Atropine sulfate E Unithiol
3. A woman of 25 was injected naloxone to prevent an acute morphine intoxication. Naloxone fasty made her condition better. What is the mechanism of action of this medicine? <b>a) blockade of opioid receptors</b> b) blockade of GABA's receptors c) blockade of serotonin receptors d) blockade of dopamine receptors e) blockade of benzodiazepine receptors
4. What is remedy should be used in case of narcotic analgetic overdose as an antidote to stop respiratory center depression? <b>a) Naloxone</b> b) Cordiamin c) Etymisol d) Camphor e) Paracetamol
5. Explain to your pharmacist – colleague. What indications does naloxone have? <b>a) acute narcotic analgesic poisoning</b>

<p>b) heavy metal poisoning  c) cardiac glycoside poisoning  d) ergot alkaloid poisoning  e) atropine sulfate poisoning</p>
<p>6. A 25-year-old woman presenting with acute morphine intoxication was given an injection of naloxone that caused rapid improvement of her condition. The mechanism of action of this preparation is based on the block of the following receptors:  <b>a)* Opioid receptors</b>  b) Serotonin receptors  c) GABA- receptors  d) Dopamine  e) Benzodiazepine receptors</p>
<p>7. A patient presents with morphine intoxication. Which drug should be injected as an antidote?  A. Unithiol  <b>A. Naloxone</b>  B. Lobeline hydrochloride  C. Atropine sulphate  D. Ibuprofen  E. Bemegride</p>
<p>8. What naloxone indications are there?  <b>A. *Narcotic analgetics acute poisoning</b>  B. Heavy metals poisoning  C. Cardiac glycosides poisoning  D. Ergot alkaloids poisoning  E. Atropine sulphate poisoning</p>
<p>9. What are the indications for the use of naloxone?  <b>A. Acute intoxication with narcotic analgesics</b> B. Heavy metal intoxication  C. Intoxication with cardiac glycosides  D. Intoxication with ergot alkaloids E.  Atropine sulfate intoxication</p>

## 21. Paracetamol

### Tests

<p>1. You are an employee of pharmacy storage. By entry into the list of new preparations in a computer database specify to what pharmacological group paracetamol belongs to.  <b>A Nonnarcotic analgesic</b>  B Sleeping-pills  C Diuretic agents  D Hypotensors  E Antianginal drugs</p>
<p>2. The child of 10 years old with an acute respiratory viral disease was prescribed <b>paracetamol</b> for decrease of fever. What type of pharmacotherapy is it?  <b>A Symptomatic</b>  B Etiotropic  C Nosotropic  D Adaptation  E Substitutive</p>
<p>3. Patient consulted a pharmacist. He had a gastric ulcer and headache. Which of analgetics is the best for the patient?  <b>a) Paracetamol</b>  b) Acetylsalicylic acid c) Indometacin  d) Diclofenac sodium  e) Ibuprofen</p>



<p>4. Majority of non-narcotic analgesics have also anti-inflammatory and antipyretic effects. Which of the remedy does not have anti-inflammation effect?</p> <p><b>a) Paracetamol</b>  b) Diclofenac sodium  c) Acetylsalicylic acid  d) Indometacin  e) Celecoxib</p>
<p>5. A child who has a respiratory disease was prescribed paracetamol to reduce hyperthermia. What pharmacological group does this medicine belong to?</p> <p><b>a) nonnarcotic analgetic</b>  b) antihypertensive drug  c) antacid  d) diuretic agent  e) antitussive drug</p>
<p>6. You are pharmacist at a drugstore. Offer an equivalent for temporary unavailable paracetamol.</p> <p><b>a) panadol</b>  b) aspirin  c) analgin  d) pyroxicam  e) celecoxib</p>
<p>7. You are employed in a pharmaceutical storehouse. When adding newly received preparations to the computerized database, specify the pharmacological group of paracetamol:</p> <p><b>a). * Nonnarcotic analgetic</b>  b). Antianginal drug  c). Hypnotic  d).Diuretic  e). Hypotensive drug</p>
<p>8. A 26-year-old pregnant woman (III trimester of pregnancy) complains about body temperature rise up to 39 °C. What febrifuge may be recommended in this case?</p> <p><b>a)* Paracetamol</b>  b) Indometacin  c) Diclofenac  d) Aspirin  e) Analgin</p>
<p>9. Mother of a 2-month-old child came to a pharmacy and asked for a febrifuge. What drug should be recommended for the child?</p> <p><b>a)* Paracetamol</b>  b) Acetylsalicylic acid  c) Nimesulide  d) Indometacinum  e) Diclofenac sodium</p>
<p>10. A woman in the III trimester (pregnancy) has an acute respiratory viral disease accompanied with body temperature rise up to 39. Which of the drugs should be recommended?</p> <p>A. Acetylsalicylic acid  <b>B. Paracetamol</b>  C. Indomethacin  D. Diclofenac sodium  E. Celecoxib</p>
<p>11. The student with cold has been prescribed antipyretic medicine. Name this medicine.</p> <p><b>A. *Paracetamol</b>  B. Ascorbic acid  C. Oxytocin  D. Famotidine  E. Cyanocobalamin</p>

## 22. Diclofenac sodium

### Tests

1. For a patient of 55 years old on the 4th day of treatment with diclofenac sodium there was the gastric bleeding as a result of gastric ulceration. What is the ulcerogenic effect of preparation related to?

**A Diminishing of formation of prostaglandin E<sub>2</sub>**

B Diminishing of formation of leucotriens

C Blocking of of phosphodiesterase enzyme D

Diminishing of formation of red blood cells E

Diminishing of formation of leucocytes

2. Answer the patient's question, what contraindication Sodium diclofenac has?

**A gastric ulceration**

B bronchitis

C angina pectoris

D diabetes mellitus

E high blood pressure

3. What is elementin mechanism of sodium diclofenac action?

**A Blocks COX-2**

B Activation of phosphodiesterases synthesis

C Inhibition cholinesterase

D Activation adenilatcyclases

E Depression of phosphodiesterase

4. Patient's diagnosis is ankylosing spondylitis. The doctor prescribed him nonsteroid antiinflammatory medicine - diclofenac sodium. Point out the mechanism of analgesic action of th-ag-nt.

**a) blockade of COX-1and2**

b) blockade of COX - 2

c) blockade of phosfolipase A<sub>2</sub>

d) blockade of opioid receptors

e) -tim-lation of opio18asix1818ine18cy

5. A patient has been taking diclofenac sodium for a long time. The family physician withdrew this drug and administered celecoxib. What disease was the reason for the drug substitution?

**A. Peptic ulcer**

B. Bronchial asthma

C. Urolithiasis

D. Arterial hypertension

E. Chronic hepatitis

## 23.Acetylsalicylic acid

### Tests

1. Find in your pharmacy drug for treatment headache also hawing antiagregant effect.

**A Acetylsalicylic acid**

B Codeine phosphate C

Promedol

D Tramadol

E Fentanyl

2. To a patient after the acute cardiac infarction a doctor recommend used acetylsalicylic acid during 3-4 months. What effect acetylsalicylic acid is used in such f case.

**A Antiaggregant**

B Antipiretic

C Analgesic

D Antiinflammatory

E Spasmolytic

3. It was prescribe acetylsalicylic acid for 100 mg one for day to patient who has got myocardial infarction. What kind of aspirin effect did doctor expect?

<p><b>A antiaggregant</b>  B against inflammation  C antipyretic action  D analgesic  E vasodilatory action</p>
<p>4. What effect expects a doctor, when prescribing Aspekard (acetylsalicylic acid) - to a patient who  a) has CHD (coronary heart disease)  <b>b) antiaggregan-</b>  c)-analgetic  d) antipyretic  e) anti – inflammation  f) cholagogic</p>
<p>5. What a pharmacological effect of acetylsalicylic acid allows to use it for prevention of thromboses when one has coronary heart disease.  <b>a) antiaggregant</b>  b) analgesic  c) anti-fever  d) ulcerogenic action  e) antiinflammatory</p>
<p>6. To prevent thrombosis combined to angina pectoris a medicine from nonsteroid anti – inflammatory group was prescribed.  <b>a) aspirin</b> b)  ibuprofen c)  pyroxicam  d) mefenamic acid  e) indometacin</p>
<p>7. Which of the below-listed drugs is used for thrombolytic therapy in case of myocardial infarction?  <b>a). * Acetylsalicylic acid</b> b). Ticlopidine  c). Streptokinase  d).Phenylinum  e). Heparinum</p>
<p>8. A patient consults a pharmacist about taking acetylsalicylic acid as an antiaggregant. What is the daily dose that should be recommended for continuous use?  A. 1,0-2,0 g  B. 0,5-1,0 g  C. Over 4,0 g  D. 2,0-3,0  <b>E. 0,1-0,3 g .</b></p>
<p>9. A 52-years old patient had myocardial infarction and was discharged from the hospital after the stationery treatment. What daily dose of acetylsalicylic acid should be administered in order to prevent thrombosis?  <b>A. 100 mg</b>  B. 50 mg  C. 1000 mg  D. 200 mg  E. 500 mg</p>
<p>10. A patient with stenocardia has been administered acetylsalicylic acid for:  <b>A Antiplatelet effect</b>  B Inhibition of blood fibrinolytic activity  C Aggregate effect  D Anti-inflammatory effect  E Increase in blood fibrinolytic activity</p>

11. A female patient asked a pharmacist to recommend her a drug for headache with antiplatelet effect. Specify this drug:

- A. Acetylsalicylic acid
- B. Codeine phosphate
- C. Promedol
- D. Tramadol
- E. Fentanyl

#### 24. Celecoxib

##### Tests

1. A 40-year-old female patient was diagnosed with rheumatoid arthritis; She has also a history of stomach ulcer. What drug from the group of nonsteroid anti-inflammatory drug may be recommended this patient?

- a)\* **Celecoxib**
- b) Aspirin
- c) Mefenamic acid
- d) Indometacin e)
- Diclofenac

2. It is necessary to prescribe non-steroid anti-inflammatory drug for patient with rheumatoid arthritis and concomitant duodenal ulcer. Which drug is the drug of choice in this case?

- a)\* **celecoxib**
- b) acetylsalicylic acid
- c) paracetamol
- d) analgin
- e) diclofenac sodium

3. Which anti-inflammatory drug is the less harmful for the stomach and can be recommended to a patient with exacerbation of rheumatoid arthritis?

- a). \* **Celecoxib**
- b). Diclofenac sodium
- c). Ibuprofenum
- d). Indometacinum
- e). Acetylsalicylic acid

4. A 57-year-old female patient was diagnosed with rheumatoid arthritis; she has also a history of stomach ulcer. What drug from the group of nonsteroid anti-inflammatory drugs may be recommended this patient?

- A. Indometacin
- B. Diclofenac
- C. Celecoxib**
- D. Aspirin
- E. Mefenamic acid

5. The patient with rheumatoid arthritis and concomitant duodenal ulcer has to be prescribed nonsteroid antiinflammatory drug. Which one of the drugs listed below is a drug of choice in the given case?

- A. Celecoxib**
- B. Acetylsalicylic acid
- C. Paracetamol
- D. Metamizole
- E. Diclofenac sodium

#### 25. Meloxicam

##### Tests

1. A pharmacy received new generation nonsteroid anti-inflammatory drug “meloxicam” that mainly blocks cyclooxygenase-2. What advantages does this preparation have in comparison with other nonsteroid anti-inflammatory drug?

- a)\* **Minimal side effect on alimentary tract**
- b) Evident myospasmodic action

- c) Interferonogenic properties
- d) Significant inhibition of protease activity
- e) Minimal side effect on hematogenesis

### 26. Piroxicam

#### Tests

1. Which of the following non-steroid anti-inflammatory agents has the least harmful effect on the mucosa of the gastrointestinal tract?
- A. Acetylsalicylic acid
  - B. Piroxicam**
  - C. Indomethacin
  - D. Diclofenac
  - E. Nimesulide

### 27. Indometacine

#### Tests

1. On the 4th day of treatment with indometacin a 55-year-old patient developed gastrorrhagia as a result of mucosa ulcer. Ulcerogenic effect of this drug is explained by the lowered activity of the following enzyme:
- a). \*Cyclooxygenase-1 (COX-1)**
  - b). Prostacyclin synthetase
  - c). Thromboxan synthetase
  - d). Cyclooxygenase-2 (COX-2)
  - e). Lipoxygenase (LOG)

### 28. Nimesulide

#### Tests

1. Which of the following non-steroid anti-inflammatory agents has the least harmful effect on the mucosa of the gastrointestinal tract?
- A. Nimesulide**
  - B. Indomethacin
  - C. Piroxicam
  - D. Diclofenac
  - E. Acetylsalicylic acid

10. A patient with allergic rhinitis was prescribed loratadine. This drug belongs to the following group of antiallergic agents:
- A. Glucocorticoids
  - B. H1-antagonists**
  - C. Leukotriene receptor antagonists
  - D. H2-antagonists
  - E. Membrane stabilizers

