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MEDICINE

PHARMACOLOGY

USQE, Stage 1

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Методична розробка для студентів складена у відповідності з вимогами освітньо-професійної програми підготовки магістра.

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PREFACE

In order to improve the preparation of students of higher medical education institutions for practical classes in pharmacology and a better understanding of theoretical material arranged a bank of questions in the discipline, which are in the bank of standardized test items of the State Organization “Testing Board for Professional Competence Assessment of Higher Education Trainees in Medicine and Pharmacy at the Ministry of Health of Ukraine”. In addition, this manual presents MCQs of pharmacology from USMLE Step 1 Qbook Fourth Edition by Kaplan Medical.

Each test task has only one correct or best answer to choose from. Checking the correctness of the answers to the test tasks is an important element of the learning process. This increases the motivation of the student to acquire knowledge and allows them to better understand which topics need additional attention.

GENERAL PHARMACOLOGY

1. A 37-year-old patient suffering from obliterating vascular endarteritis of lower limbs takes daily 60 microgram/kilogram of phenylin. Because of presentations of convulsive disorder (craniocerebral trauma in anamnesis) he was prescribed phenobarbital. Withholding this drug caused nasal hemorhage. What is this complication connected with?

A. Inhibition of microsomal oxidation in liver caused by phenobarbital

B. Aliphatic hydroxylation of phenobarbital

C. Conjugation of phenylin with glucuronic acid

D. Oxidative deamination of phenylin

E. Induction of enzymes of microsomal oxidation in liver caused by phenobarbital*

2. A child suffers from drug idiosyncrasy. What is the cause of such reaction?

A. Hereditary enzymopathy*

B. Associated disease of target organ

C. Accumulation of pharmaceutical substance

D. Inhibition of microsomal liver enzymes

E. Exhaustion of substrate interacting with pharmaceutical substance

3. A man who has been taking a drug for a long time cannot withhold it because this causes impairment of psychic, somatic and vegetative functions. Name the syndrome of different disturbances caused by drug discontinuation:

A. Idiosyncrasy

B. Sensibilization

C. Abstinence*

D. Cumulation

E. Tachyphylaxis

4. A patient ill with chronic cardiac insufficiency was prescribed an average therapeutic dose of digoxin. Two weeks after begin of its taking there appeared symptoms of drug intoxication (bradycardia, extrasystole, nausea). Name the phenomenon that

caused accumulation of the drug in the organism?

A. Functional cumulation

B. Tachyphylaxis

C. Tolerance

D. Material cumulation*

E. Idiosyncrasy

5. A patient suffering from initial hypertension has been taking an antihypertensive preparation for a long time. Suddenly he stopped taking this preparation. After this his condition grew worse, this led to development of hypertensive crisis. This by-effect can be classified as:

A. Abstinence syndrome*

B. Dependence

C. Tolerance

D. Sensibilization

E. Cumulation

6. A patient taking clonidine for essential hypertension treatment was using alcohol that caused intense inhibition of central nervous system. What may it be connected with?

A. Intoxication

B. Effect summation

C. Cumulation

D. Effect potentiating*

E. Idiosyncrasy

7. A patient who has been suffering from cardiac insufficiency for several months has been taking digoxin on an outpatient basis. At a certain stage of treatment there appeared symptoms of drug overdose. What phenomenon underlies the development of this complication?

A. Functional cumulation

B. Habituation

C. Sensibilization

D. Material cumulation*

E. Tachyphylaxis

8. A patient with chronic cardiac insufficiency has been taking foxglove (Digitalis) preparations for a long time. Due to the violation of intake schedule the woman got symptoms of intoxication. These symptoms result from:

A. Idiosyncrasy

B. Tachyphylaxis

C. Material cumulation*

D. Antagonism

E. Sensibilization

9. A patient with frequent attacks of stenocardia was prescribed sustak -forte to be taken one tablet twice a day. At first the effect was positive but on the second day stenocardia attacks resumed. What can explain inefficiency of the prescribed drug?

A. Tachyphylaxis*

B. Cumulation

C. Dependence

D. Idiosyncrasy

E. Sensibilization

10. Continuous taking of some drugs foregoing the pregnancy increase the risk of giving birth to a child with genetic defects. What is this effect called?

A. Teratogenic effect

B. Embryotoxic effect

C. Mutagenic effect*

D. Fetotoxical effect

E. Blastomogenic effect

11. A lab rat has subcutaneously received mercury(II) chloride in the amount of 5 mg/kg. 24 hours later the plasma creatinine concentration increased several times. What mechanism of retention azotemia is observed in this case?

A. Decreased glomerular filtration*

B. Increased creatinine production in the muscles

C. Increased creatinine reabsorption

D. Increased glomerular filtration

E. Increased creatinine production in the renal tubules

12. A patient has been taking bisacodyl for a long time to treat chronic constipation. However, several weeks later the aperient effect of the drug diminished. What is the possible cause of this?

A. Acquired tolerance*

B. Drug dependence

C. Material cumulation

D. Functional cumulation

E. Sensitization

13. During pregnancy a woman has been taking an antiepileptic drug - sodium valproate. It resulted in her child developing a vertebral column malformation - spina bifida. Name the described effect of the drug:

A. Teratogenic effect*

B. Immunosuppressive effect

C. Acquired tolerance

D. Dependence

E. Sensitizing effect

14. A patient used an indirect-acting adrenergic agonist to treat rhinitis. After the patient has been putting in the nose drops for several days, the casoconstrictive effect of the drug gradually diminished. Name this phenomenon:

A. Allergy

B. Cumulation

C. Teratogenicity

D. Tachyphylaxis*

E. Idiosyncrasy

DRUGS ACTING ON AUTONOMIC NERVOUS SYSTEM (ANS)

1. A 63 y.o. man with collapse symptoms was delivered to the emergency hospital. A doctor chose noradrenaline in order to prevent hypotension. What is the action mechanism of this medication?

A. Activation of serotonin receptors

B. Activation of dopamine receptors

C. Activation of β-adrenoreceptors

D. Activation of α1 -adrenoreceptors*

E. Block of M-cholinoreceptors

2. A patient had to go through an operation. Doctors introduced him dithylinum (listenone) and performed intubation. After the end of operation and cessation of anesthesia the independent respiration wasn't restored. Which enzyme deficit prolongs the action of muscle relaxant?

A. N-acetyltransferase

B. Succinate dehydrogenase

C. Carbanhydrase

D. Pseudocholinesterase*

E. K-Na-adenosine triphosphatase

3. A patient in postoperative period was prescribed an anticholinesterase drug for stimulation of intestinal peristalsis and tonus of urinary bladder. What drug is it?

A. Propanolol

B. Proserin*

C. Reserpine

D. Mannitol

E. Dichlothiazide

4. A patient suffering from myasthenia has been administered proserin. After its administration the patient has got nausea, diarrhea, twitch of tongue and skeletal muscles. What drug would help to eliminate the intoxication?

A. Isadrine

B. Physostigmine

C. Pyridostigmine bromide

D. Atropine sulfate*

E. Mesatonum

5. A patient with a limb fracture must be administered a depolarizing drug from the myorelaxant group for the purpose of a short-time surgery. What drug is it?

A. Tubocurarine chloride

B. Cytitonum

C. Dithylinum*

D. Atropine sulfate

E. Pentaminum

6. A patient with drug intoxication presented with the dryness of oral mucous membrane and mydriatic pupils. Such action of this drug is associated with the following effect:

A. Adrenoreceptor stimulation

B. Muscarinic cholinoreceptor stumulation

C. Nicotinic cholinoreceptor stumulation

D. Muscarinic cholinoreceptor block*

E. Adrenoreceptor block

7. A patient with fracture of his lower jaw was admitted to the maxillofacial department. It was decided to fix his bones surgically under anaesthetic. After intravenous introduction of muscle relaxant there arose short fibrillar contractions of the patient's facial muscles. What muscle relaxant was applied?

A. Melictine

B. Tubocurarin chloride

C. Pipecuronium bromide

D. Diazepam

E. Dithylinum*

8. A patient with II stage hypertension has been taking one of hypotensive medications for the purpose of treatment. After a time arterial pressure decreased, but the

patient started complaining of flaccidity, sleepiness, indifference. A bit later he felt stomach pain. He was diagnosed with ulcer. What hypotensive medication has the patient been taking?

A. Verapamil

B. Dibazole

C. Furosemide

D. Reserpine*

E. Captopril

9. A stomatologist injected a patient with a certain drug in order to reduce salivation during tooth filling. What drug is it?

A. Mesaton

B. Atropine sulfate*

C. Proserin

D. Pilocarpine hydrochloride

E. Adrenaline hydrochloride

10. A woman was delivered to a hospital for trachea intubation. What of the following drugs should be applied in this case?

A. Atropine sulfate

B. Nitroglycerine

C. Metronidazole

D. Dithylinum*

E. Gentamycin sulfate

11. An ophthalmologist used a 1% mesaton solution for the diagnostic purpose (pupil dilation for eye-ground examination). What is the cause of mydriasis induced by the drug?

A. Activation of β1 adrenoreceptors

B. Activation of α2 adrenoreceptors

C. Block of α1 adrenoreceptors

D. Activation of α1 adrenoreceptors*

E. Activation of M-cholinoreceptors

12. Analeptical remedy of reflective type from the H-cholinomimetics group was given to the patient for restoration of breathing after poisoning with carbon monoxide. What medicine was prescribed to the patient?

A. Pentamin

B. Atropine sulphate

C. Adrenaline hydrochloride

D. Lobeline hydrochloride*

E. Mesaton

13. During an operation a patient got injection of muscle relaxant dithylinum. Relaxation of skeletal muscles and inhibition of respiration lasted two hours. This condition was caused by absence of the following enzyme in blood serum:

A. Catalase

B. Butyrylcholin esterase*

C. Acetylcholinesterase

D. Glucose 6-phosphatase

E. Glutathione peroxidase

14. Introduction of a pharmaceutical substance to an experimental animal resulted in reduction of salivation, pupil mydriasis. Next intravenous introduction of acetylcholine didn't lead to any significant changes of heart rate. Name this substance:

A. Salbutamol

B. Proserin

C. Propranolol

D. Adrenaline

E. Atropine*

15. On the 2-3rd day after stomach resection intestinal peristalsis wasn't restored. What is to be administered for stimulation of gastrointestinal tract?

A. Proserin*

B. Acetylcholine

C. Cyclodole

D. Atropine sulfate

E. Prasosin

16. Patient with bronchial asthma was taking tablets which caused insomnia, headache, increased blood pressure. What medecine can cause such complications?

A. Izadrine

B. Ephedrine*

C. Chromolin sodium

D. Euphyline

E. Adrenaline

17. Patient with complaints of dryness in the mouth, photophobia and vision violation was admitted to the reception-room. Skin is hyperemic, dry, pupils are dilated, tachycardia. Poisoning with belladonna alkaloids was diagnosed on further examination. What medicine should be prescribed?

A. Pilocarpine

B. Diazepam

C. Prozerin*

D. Armine

E. Dipyroxim

18. Proserin increases skeletal muscle tone when given systematically. Halothane induces relaxation of skeletal muscles and reduces proserin effects. What is the nature of proserin and halothane interaction?

A. Independent antagonism

B. Direct functional antagonism

C. Competitive antagonism

D. Indirect functional antagonism*

E. Noncompetitive antagonism

19. 36-year-old patient has been administered a depolarizing muscle relaxant during a surgery. Name this drug:

A. Dithylinum*

B. Proserin

C. Pipecuronium bromide (Arduan)

D. Diazepam

E. Aminazine

20. A patient after disrupted cerebral circulation has developed paralysis. Choose the anticholinesterase drug to be prescribed in this case:

A. Proserin*

B. Cordiamin

C. Aceclidine

D. Methacin

E. Hexamethonium (Benzohexonium)

21. A patient complaining of dizziness, thirst, difficult swallowing, and impaired vision of close objects has addressed a doctor. Objectively: respiratory rate is increased, pupils are dilated, general agitation, talkativeness, though the speech is indistinct. BP is 110/70 mm Hg, heart rate is 110/min. Given symptoms can indicate overdosage of the following drug:

A. Atropine*

B. Morphine

C. Ephedrine

D. Aminazine

E. Caffeine

22. At the 2-3 day after the gastric resection the patient's intestinal peristalsis failed to restore. What should the patient be prescribed to stimulate the function of his gastrointestinal tract?

A. Proserin*

B. Platyphyllin

C. Cyclodol (Trihexyphenidyl)

D. Atropine

E. Dithyline (Suxamethonium chloride)

23. A patient was prescribed atropine sulfate to treat intestinal colic. What concomitant disease can be a contraindication for this drug?

A. Glaucoma*

B. Bronchial asthma

C. Sinus bradycardia

D. Hypotension

E. Vertigo

24. After a nephrectomy the patient developed enteroparesis. What cholinergic agent with anticholinesterase action should be prescribed in this case?

A. Proserin*

B. Carbacholine

C. Aceclidine

D. Pilocarpine

E. Acetylcholine

25. The first-aid center has received a victim of a traffic accident diagnosed with closed displaced fracture of the middle third of the thigh. For repositioning of bone fragments the patient received 10 ml of 2% dithylinum solution intravenously, which resulted in prolonged period of apnoea and muscle relaxation. What enzyme is deficient, resulting in such pharmacogenetic enzymopathy?

A. Pseudocholinesterase*

B. Uridine diphosphate glucuronyltransferase

C. Glucose 6-phosphate dehydrogenase

D. Methemoglobin reductase

E. N-acetyltransferase

26. During gastric resection the patient received mixed anesthesia with tubocurarin chloride muscle relaxant; to restore spontaneous respiration the patient received proserin. What pharmacological group does this drug belong to

A. Cholinesterase inhibitors*

B. Angiotensin-converting-enzyme inhibitors

C. Calcium channel blockers

D. Muscarinic antagonists

E. Muscarinic agonists

27. A 50-year-old man experienced a severe stress. His blood levels of

adrenaline and noradrenaline sharply increased. What enzyme catalyze the process of noradrenaline inactivation?

A. Peptidases

B. Monoamine oxidases*

C. Carboxylases

D. Tyrosinase

E. Glycosidases

28. During gastric resection the patient received mixed anesthesia with tubocurarine chloride muscle relaxant. To restore unassisted respiration in the patient, the patient was given proserin. What pharmacological group does this drug belong to?

A. Muscarinic antagonists

B. Calcium channel blockers

C. Angiotensin-converting-enzyme inhibitors

D. Muscarinic agonists

E. Cholinesterase inhibitors*

29. For the relief of intestinal colic a patient was prescribed atropine sulfate. What disease can be contraindication for administration of this medicine?

A. Bronchial asthma

B. Vertigo

C. Headache

D. Glaucoma*

E. Hypotension

30. In an experiment, a frog neuromuscular preparation had been processed with a curare-like substance, which led to the disappearance of muscle contractions in response to electrical stimulation. What function of the muscle cell membrane is disrupted by curare-like substance?

A. Change in permeability for different substances

B. Maintenance of the internal cell structure, its cytoskeleton

C. Reception of the mediators in the neuromuscular synapse*

D. Creation of the electric potentials on the both sides of the membrane.

E. Creation of a barrier between the intracellular environment and surrounding intercellular fluid

DRUGS ACTING ON CENTRAL NERVOUS SYSTEM (CNS)

1. A 36 y.o. man has a craniocerebral trauma. Objectively: diminished breath sounds, thready pulse, no reflexes. What way of pyracetam introduction will be the most apropriate in this case?

A. Inhalation

B. Intravenous*

C. Subcutaneous

D. Peroral

E. Rectal

2. A 4-year-old child was admitted to the orthopaedic department with shin fracture together with displacement. Bone fragments reposition requires preliminary analgesia. What preparation should be chosen?

A. Promedol*

B. Atropine

C. Morphine hydrochloride

D. Panadol

E. Analgin

3. A 45-year-old patient suffers from neurosis characterized by irritability, sleeplessness, motiveless anxiety. What drug would eliminate all the symptoms?

A. Caffeine sodium benzoate

B. Valeriana extract

C. Pyracetam

D. Diazepam*

E. Levodopa

4. A patient consulted a physician about muscle rigidity, constrained movements, permanent arm tremor. The patient was diagnosed with Parkinson's disease. What preparation should be administered?

A. Diazepam

B. Phenytoin

C. Phenobarbital

D. Levodopa*

E. Ethosuximide

5. A patient who has been treated in a neural clinic and has been taking a sedative for a long time got the following complication: cough, rhinitis, epiphora. What drug caused these disturbances?

A. Reserpine

B. Diazepam

C. Valerian

D. Sodium bromide*

E. Phenazepam

6. A patient who suffers from insomnia caused by emotional disorder was prescribed a hypnotic drug with tranquillizing effect. What hypnotic was prescribed?

A. Nitrazepam*

B. Phenobarbital

C. Chloral hydrate

D. Sodium ethaminal

E. Bromisoval

7. A patient with acute morphine poisoning was delivered to a hospital. What specific narcotic antagonist should be chosen in this case?

A. Digoxin

B. Paracetamol

C. Methacin

D. Naloxone*

E. Unithiol

8. A patient with hip fracture was prescribed a narcotic analgetic. Its anesthetic action is determined by interaction with the following receptors:

A. Benzodiazepine receptors

B. Adrenoreceptors

C. Cholinoreceptors

D. Opiate receptors*

E. GABA-ergic receptors

9. A patient with myocardial infarction was admitted to the cardiological department. For pain relief it was decided to potentiate fentanyl action with a neuroleptic. Which of the following neuroleptics is the most suitable for neuroleptanalgesia?

A. Haloperidol

B. Aminazine

C. Triftazine

D. Droperidol*

E. Sulpiride

10. An aged patient complains of headache, dizziness, quick tiredness, worsening of memory. Anamnesis: craniocerebral injury. Medicine of what group should be prescribed?

A. Analgetics

B. Somnific

C. Neuroleptics

D. Nootropics*

E. Sedatives

11. The patient has taken the mixture prescribed by neuropathologist for neurasthenia for 2 weeks. Patient felt better but developed coryza, conjunctivitis, rash, inertia, decrease of memory. Bromizm was diagnosed. What should be prescribed to decrease symptoms?

A. Asparcam

B. Glucose solution 5%

C. Polyglucin

D. Natrium chloride*

E. Atropine

12. The patient was treated medically for psychosis for 2 weeks. Patient's condition improved but rigidity, tremor, hypokinesia developed. Which of the drugs can cause such complications?

A. Chlordiazepoxide

B. Diphenine

C. Sydnocarb

D. Imipramine

E. Aminazine*

13. A 4-year-old child has been admitted to an orthopaedic department with displaced shin fracture. Bone fragments reposition requires analgesia. What drug should be chosen?

A. Promedol*

B. Analgin

C. Morphine hydrochloride

D. Panadol

E. -

14. A patient with urolithiasis has developed severe pain attacks. For pain shock prevention he was administered an antispasmodic narcotic analgesic along with atropine. Name this drug:

A. Promedol*

B. Nalorphine

C. Tramadol

D. Ethylmorphine hydrochloride

E. Morphine hydrochloride

15. An alcoholic suffers from alcoholic psychosis with evident psychomotor agitation. What neuroleptic drug should be administered for emergency aid?

A. Aminazine*

B. Diazepam

C. Sodium bromide

D. Reserpine

E. Halothane

16. Due to severe pain syndrome a patient was prescribed a narcotic analgesic. Name this drug:

A. Morphine*

B. Metamizole (Analgin)

C. Nimesulide

D. Dimethyl sulfoxide

E. Indometacin

17. Monoamine oxidase inhibitors are widely used as psychopharmacological drugs. They change the level of nearly all neurotransmitters in synapses, with the following neurotransmitter being the exception:

A. Acetylcholine*

B. Noradrenaline

C. Adrenaline

D. Dopamine

E. Serotonin

18. A patient with signs of emotional lability that result in troubled sleep has been prescribed nitrazepam. Specify the sleep-inducing mechanism of this drug:

A. GABA-ergic system activation*

B. Blockade of opiate receptors

C. Inhibition of stimulating amino acids

D. H1-histamine receptors stimulation

E. Supression of serotonergic neurotransmission

19. After emotional upset a woman has been suffering from disturbed sleep for several days. What soporific drug would be preferable for this type of insomnia?

A. Nitrazepam*

B. Phenobarbital

C. Ethaminal sodium (Pentobarbital)

D. Barbamylum (Amobarbital)

E. Chloral hydrate

20. Depression and emotional disturbances result from the lack of noradrenaline, serotonin, and other biogenic amines in the brain. Their content in the synapses can be increased through administration of antidepressants that inhibit the following enzyme:

A. Monoamine oxidase*

B. Diamine oxidase

C. L-amino acids oxidase

D. D -amino acid oxidase

E. Phenylalanine 4-monooxygenase

21. The patients with organic brain disorder can take the following drug to improve their memory:

A. Piracetam*

B. Nitrazepam

C. Medazepam

D. Diazepam

E. Caffeine

22. A patient has developed status epilepticus. What medicine should be used in this case to stop the seizures?

A. Diazepam*

B. Cyclodol (Trihexyphenidyl)

C. Diprazine (Promethazine)

D. Sodium bromide

E. Valerian extract

23. A patient with parkinsonism was prescribed levodopa, which led to rapid improvement of the patient's condition. What is the mechanism of action of this drug?

A. Stimulation of dopamine synthesis*

B. Muscarinic acetylcholine receptor blockade

C. Stimulation of dopamine receptors

D. Anticholinesterase action

E. Muscarinic acetylcholine receptor stimulation

24. A schizophrenia patient was prescribed aminazine. What pharmacodynamic action of this drug is the grounds for its prescription in this case?

A. Antipsychotic*

B. Antiemetic

C. Hypothermic

D. Muscle relaxant

E. Hypotensive

25. A patient with inoperable lung cancer accompanied by unbearable pain was prescribed an analgesic. Against the background of analgesic therapy the patient developed signs of intestinal obstruction. What analgesic could have caused this complication

A. Morphine*

B. Promedol (Trimeperidine)

C. Omnopon (Papaveretum)

D. Fentanyl

E. Analgin (Metamizole)

26. The neurological department received a patient complaining of memory deterioration and loss of mental work capacity that developed after a head trauma. Recommend him a medicine for improvement in cerebral metabolism:

A. Piracetam (Nootropil)*

B. Meridil (Methylphenidate)

C. Sydnocarb (Mesocarb)

D. Caffeine

E. Analgin (Metamizole)

27. A patient with Parkinson’s disease made an appointment with the doctor. The doctor prescribed him a medicine that is a dopamine precursor in the central nervous system. What medicine of those listed below has such mechanism of action?

A. Levodopa*

B. Methacin

C. Ipratropium Bromide

D. Platyphyllin hydrotartrate

E. Lorazepam

NSAIDs

1. A female patient consulted a doctor about pain and limited movements in the knee joints. Which of the following nonsteroid anti-inflammatory drugs should be administered taking into consideration that the patient has a history of chronic gastroduodenitis?

A. Butadiounum

B. Diclofenac sodium

C. Promedol

D. Acetylsalicilic acid

E. Celecoxib*

2. Signs of gastropathy develop in the patient with rheumatoid arthritis who was treated with indometacin. With what activity of the drug can this complication be connected?

A. Antikinine

B. Anticyclooxygenase*

C. Antihistamine

D. Antiserotonin

E. Local irritating

3. A patient with arthritis has been prescribed an anti-inflammatory selective COX-2 inhibitor. Select this drug among those given below:

A. Celecoxib*

B. Phenylbutazone (Butadion)

C. Dimethylsulfoxide (Dimexid)

D. Indometacin

E. Metamizole (Analgin)

4. A 46-year-old patient suffering from ulcer disease of the stomach is diagnosed with rheumatoid arthritis. What antiinflammatory drug would be the most advisable in this case?

A. Celecoxib*

B. Prednisolone

C. Analgin (Metamizole)

D. Promedol (Trimeperidine)

E. Paracetamol

5. A 3-year-old child with elevated body temperature has taken aspirin and developed increased hemolysis of erythrocytes. In this case hemolytic anemia can be caused by congenital deficiency of the following enzyme:

A. Glucose 6-phosphate dehydrogenase*

B. Glucose 6-phosphatase

C. Glycogen phosphorylase

D. Glycerol-phosphate dehydrogenase

E. Gamma-glutamyl transferase

6. A woman with polyarticular rheumatoid arthritis was prescribed a non-steroidal antiinflammatory drug - diclofenac sodium. After the patient has been taking it for some time, her concomitant disease exacerbated, which forced the doctor to cancel the prescription of this drug. What concomitant disease could necessitate cancellation of this drug prescription

A. Ulcer disease*

B. Ischemic heart disease

C. Diabetes mellitus

D. Essential hypertension

E. Bronchial asthma

7. Patients with ischemic heart disease are usually prescribed small doses of aspirin. This drug inhibits synthesis of platelet aggregation activator, thromboxane A2. What substance is this activator synthesized from

A. Arachidonic acid*

B. Malonic acid

C. Acetic acid

D. Homogentisic acid

E. Glutamic acid

8. 28-year-old woman came to a polyclinic with complaints of a headache. The doctor offered her paracetamol, taking into consideration that the woman has a somatic disease. What concomitant disease made it necessary to prescribe her specifically paracetamol?

A. Peptic ulcer disease of the stomach*

B. Rheumatoid arthritis

C. Cholecystitis

D. Atherosclerosis

E. Nephritis

DRUGS ACTING ON RENAL AND CARDIOVASCULAR SYSTEMS

1. A 50 y.o. patient with chronic cardiac insufficiency and tachyarrythmia was prescribed a cardiotonic drug. What drug was prescribed?

A. Amiodarone

B. Dopamine

C. Dobutamine

D. Digoxin*

E. Mildronate

2. A 65-year-old female patient suffers from chronic renal insufficiency accompanied by evident edemata caused by chronic glomerulonephritis. What diuretic should be administered for forced diuresis?

A. Acetazolamide

B. Hydrochlorothiazide

C. Chlorthalidone

D. Cyclometazide

E. Furosemide*

3. A 66-year-old female patient got intravenous injection of magnesium sulfate solution for the purpose of elimination of hypertensive crisis. But arterial pressure didn't go down and after repeated introduction of the same preparation there appered sluggishness, slow response, inhibition of consciousness and respiration. What preparation is antagonist of magnesium sulfate and can eliminate symptoms of its overdose?

A. Activated carbon

B. Potassium chloride

C. Sodium chloride

D. Calcium chloride*

E. Potassium permanganate

4. A patient ill with bronchial asthma didn't inform his doctor that he had attacks of stenocardia. Doctor administered him a medication, which taking resulted in

less frequent attacks of bronchial asthma, but stenocardia attacks became more frequent. What medication was administered?

A. Cromolyn sodium

B. Salbutamol

C. Aminophylline

D. Isadrin*

E. Phenotherol

5. A patient suffering from chronic cardiac insufficiency was recommended to undergo a prophylactic course of treatment with a cardiological drug from the group of cardiac glycosides that is to be taken enterally. What drug was recommended?

A. Corglycon

B. Cordarone

C. Digoxin*

D. Cordiamin

E. Strophanthine

6. A patient suffering from coronary artery disease had taken a certain drug many times a day in order to arrest stenocardia attacks. Overdose of this drug finally caused intoxication. Objectively: cyanotic skin and mucous membranes, dramatic fall in the arterial pressure, tachycardia, respiration inhibition. Blood has increased concentration of methemoglobin. The drug the patient had taken relates to the following group:

A. Adenosine drugs

B. Alpha-adrenoceptor blockers

C. Calcium channel blockers

D. Organic nitrates*

E. Myotropic spamolytics

7. A patient suffers from chronic left-ventricular insufficiency. What medication should be administered?

A. Etimizole

B. Bemegride

C. Pyracetam

D. Digoxin*

E. Vinpocetine

8. A patient takes digoxin for treatment of cardiac insufficiency. What diuretic may increase digoxin toxicity due to the intensified excretion of K+ ions?

A. Lisinopril

B. Hydrochlorothiazide*

C. Panangine

D. Siliborum

E. Spironolactone

9. A patient that entered the admission office had the following signs of acute cardiac insufficiency: paleness, acrocyanosis, frequent shallow respiration. What drug is indicated in this case?

A. Nitroglycerine

B. Adrenaline hydrochloride

C. Cordiamin

D. Digitoxin

E. Corglycon*

10. A patient with chronic cardiac insufficiency has been treated with cardiotonic drugs and a thiazide diuretic, but in spite of it there are still edemata and risk of ascites. What medication should be prescribed to amplify diuretic effect of the applied drugs?

A. Spironolactone*

B. Manitole

C. Amyloride

D. Clopamide

E. Furosemide

11. A patient with coronary artery disease was admitted to the cardiological department. For stenocardia prevention a drug from the group of \beta- adrenoceptor blockers was administered. What drug is it?

A. Furosemide

B. Atropine sulfate

C. Metoprolol*

D. Oxytocin

E. Morphine hydrochloride

12. A patient with hypertensic crisis was admitted to the cardiological department, he was injected intravenously with an antihypertensive drug - salt of an alkaline-earth metal. What drug was injected?

A. Sodium hydrocarbonate

B. Potassium chloride

C. Calcium lactate

D. Magnesium sulfate*

E. Benzohexamethonium

13. A patient with II stage hypertension has been taking one of hypotensive medications for the purpose of treatment. After a time arterial pressure decreased, but the patient started complaining of flaccidity, sleepiness, indifference. A bit later he felt stomach pain. He was diagnosed with ulcer. What hypotensive medication has the patient been taking?

A. Verapamil

B. Dibazole

C. Furosemide

D. Reserpine*

E. Captopril

14. After a tooth extraction a patient felt persistent pain behind his breast bone. After sublingual intake of an antianginal drug the pain behind the breast bone disappeared, but the patient complained of headache and dizziness. What drug are these properties typical for?

A. Metoprolol

B. Propranolol

C. Nitroglycerin*

D. Validol

E. Verapamil

15. Anapriline therapy caused positive effect in the dynamic of the disease of a 44-year-old woman suffering from stenocardia. What is the main mechanism of the effect of this medicine?

A. Increased oxygen supply to the myocardium

B. Decrease of oxidative exchange in myocardium due to enzyme blockade of Krebs' cycle

C. Decreased power inputs of myocardium due to reduced loading

D. Blockade of β-adrenoreceptors and decrease myocardial requirements to the oxygen*

E. Decreased need in increasing of oxygen supply to the myocardium

16. Diuretic drug was prescribed to the patient with hypertension in the course of complex treatment. In a few days BP decreased but signs of hypokaliemia developed. What drug could cause such complications?

A. Clopheline

B. Spironolactone

C. Lasix*

D. Triamterene

E. Enalapril

17. Patient complaines of weakness, dyspnea, low extremities oedema. Diagnosis: chronic cardiac insufficiency. What medicine should be prescribed first of all?

A. Propranolol

B. Caffeine

C. Papaverine

D. Digitoxin*

E. Raunatin

18. The alternate usage of dichlotiazide, etacrin acid and lasex didn't cause marked diuretic effect in patient with marked peripheral edema. Increased amount of aldosterone is in the blood. Indicate the medicine to be prescribed.

A. Mannitol

B. Spironolacton*

C. Clopamid

D. Urea

E. Amilorid

19. A 45-year-old woman suffers from arterial hypertension with high blood concentration of angiotensin II. What antihypertensive drug is the most recommended in the given case?

A. Lisinopril*

B. Prazosin

C. Metoprolol

D. Reserpine

E. Verapamil

20. A patient has arterial hypertension. What long-acting calcium channel blocker should be prescribed?

A. Amlodipine*

B. Octadine

C. Pyrroxanum

D. Atenolol

E. Reserpine

21. A patient suffers from acute cardiopulmonary failure with pulmonary edema. What diuretic should be prescribed in the given case?

A. Furosemide*

B. Triamterene

C. Spironolactone

D. Hydrochlorothiazide (Dichlothiazidum)

E. Acetazolamide (Diacarb)

22. A 50-year-old man is diagnosed with ischemic heart disease and cardiosclerosis with hypertensive syndrome. What drug should be prescribed in this case?

A. Metoprolol*

B. Acetylsalicylic acid

C. Corglycon

D. Strophanthine

E. Potassium chloride

23. A man came into the admission room with complaints of edemas, rapid heart rate, dyspnea,and cyanotic mucosal tunics. He was diagnosed with chronic heart failure. What drug should be prescribed to improve the patient's general state?

A. Digoxin*

B. Papaverine hydrochloride

C. Mesaton (Phenylephrine)

D. Cordiamin

E. Nitroglycerine

24. A patient suffering from gout was prescribed allopurinol. What pharmacological property of allopurinol provides therapeutic effect in this case?

A. Competitive inhibition of xanthine oxidase*

B. Acceleration of nitrogen-containing substances excretion

C. Acceleration of pyrimidine nucleotides catabolism

D. Deceleration of pyrimidine nucleotides salvage

E. Acceleration of nucleic acids synthesis

25. During narcosis the patient developed a risk of cerebral edema. What drug should be administered in this case?

A. Furosemide*

B. Dopamine

C. Phenazepam

D. Triamterene

E. Sodium bromide

26. A 60-year-old man diagnosed with chronic heart failure was brought to the hospital. After a long course of treatment, the patient developed signs of intoxication: dyspnea, extrasystole, nausea, and disturbed perception of colors. What medicine has caused such side-effects?

A. Digoxin*

B. Anaprilin (Propranolol)

C. Nitroglycerine

D. Drotaverine

E. Furosemide

27. A man with ischemic heart disease has been taking his medicine too often throughout a day, which resulted in poisoning. Examination detects cyanosis of skin and mucosa, sharp drop of blood pressure, tachycardia, and respiratory depression. Blood methemoglobin is high. What type of medicine did the patient overdose on?

A. Organic nitrates*

B. a-adrenergic blockers

C. Calcium channel blockers

D. Adenosine-based drugs

E. Myotropic antispasmodics

28. A patient with myocardial infarction has acute heart failure. Among the drugs that increase he force of heart contractions the least dangerous in this case will be:

A. Dobutamine*

B. Adrenaline

C. Isadrinum (Isoprenaline)

D. Euphyllin (Aminophylline)

E. Caffeine

29. In human organism significant blood loss leads to decreased blood pressure, tachycardia, and weakness. Eventually the sensation of thirst appears. What hormone participates in the development of this sensation?

A. Angiotensin 2

B. Cortisol

C. Serotonin

D. Dopamine

E. Adrenalin

30. Vascular endothelium is characterized by high metabolic activity and

synthesizes vasoactive substances. Among these substances there is a potent vasodilator synthesized from L-arginine. Name this vasodilator:

A. Nitrogen oxide*

B. Histamine

C. Bradykinin

D. Acetylcholine

E. Adrenaline

31. A 45-year-old woman has an attack of cardiac fibrillation. She suffers from stage II essential hypertension. What is the drug of choice for stopping this attack

A. Anaprilin (Propranolol)*

B. Sustac forte (Nitroglycerin)

C. Potassium chloride

D. Strophanthin

E. Lidocaine

32. A patient was administered a certain drug for relief of cardiac rhythm disturbance. This drug can be used as a local anesthetic as well. Name this drug:

A. Lidocaine hydrochloride*

B. Dicain (Tetracaine)

C. Diphenine (Phenytoin)

D. Cocaine hydrochloride

E. Anaesthesin (Benzocaine)

33. A patient with arrhythmia was hospitalized into the cardiology unit. What antiarrhythmic drug should be prescribed

A. Amiodarone*

B. Acetylsalicylic acid

C. Drotaverine hydrochloride

D. Furacilin (Nitrofural)

E. Diclofenac sodium

34. A patient with essential hypertension was prescribed a drug that inhibits angiotensin converting enzyme (ACE). What drug is it?

A. Lisinopril*

B. Losartan

C. Nifedipine

D. Colestyramine

E. Carvedilol

35. A 65-year-old woman against the background of chronic heart failure developed secondary hyperaldosteronism. What medicine should be prescribed to increase the patient's diuresis?

A. Spironolactone*

B. Orthosiphon grass

C. Clopamide

D. Furosemide

E. Dichlothiazide (Hydrochlorothiazide)

36. A patient has heart rhythm disturbances. To restore the rhythm, the doctors prescribed the patient calcium antagonists. What effect do calcium ions have on the myocardium?

A. Activate parasympathetic autonomic nervous system

B. Decrease force and frequency of cardiac contractions

C. Activate sympathetic autonomic nervous system

D. Suppress sympathetic autonomic nervous system

E. Increase force and frequency of cardiac contractions*

37. A patient with essential hypertension developed a cough during the systematic treatment with a hypotensive drug. What drug of those listed below can cause such a side effect?

A. Apressin (Hydralazine)

B. Verapamil

C. Dibazol (Bendazol)

D. Lisinopril*

E. Prazosin

38. A patient with essential hypertension, who is taking hypothiazide

(hydrochlorothiazide) treatment, complains of general weakness, loss of appetite and palpitations. He has muscle hypotonia, flaccid paralyses and decreased intestinal peristalsis. What can be the cause of this condition?

A. Hypokalemia*
B. Hyperuricemia
C. Hypercalcemia
D. Hyperkalemia
E. Hyponatremia

DRUGS ACTING ON RESPIRATORY AND GASTROINTESTINAL SYSTEMS

1. A 37-year-old man was admitted to the surgical department with symptoms of acute pancreatitis: vomiting, diarrhea, bradycardia, hypotention, weakness, dehydration of the organism. What medicine should be used first of all?

A. No-spa

B. Etaperazine

C. Platyphylline

D. Contrycal*

E. Ephedrine

2. A 70-year-old man, who suffered from chronic bronchitis, was prescribed medicine for the cough - codeine. What is the mechanism of anticoughing effect?

A. Peripheral effect

B. Reflexive effect

C. Competitive effect

D. Local effect

E. Central effect*

3. A liquidator of a breakdown at a nuclear power plant who was irradiated complained about vomiting that occurs all of a sudden. What medication should be prescribed?

A. De-Nol

B. Aeron

C. Atropine

D. Metoclopramide*

E. Reserpine

4. A patient suffering from chronic bronchitis takes a synthetic mucolytic drug that facilitates the sputum thinning. What drug is it?

A. Furosemide

B. Diazepam

C. Heparin

D. Acetylcysteine*

E. Enalapril

5. A patient suffering from chronic hyperacidic gastritis takes an antacid drug for heartburn elimination. After its ingestion the patient feels better but at the same time he has a sensation of stomach swelling. Which of the following drugs might be the cause of such side effect?

A. Magnesium trisilicate

B. Magnesium oxide

C. Sodium hydrocarbonate*

D. Aluminium hydrooxide

E. Pepsin

6. A patient suffering from syphilis has been treated with bismuth preparations. As a result of it some grey spots turned up on the mucous membrane of the oral cavity; nephropathy symptoms were also present. What drug should be used for treatment of bismuth intoxication?

A. Nalorphine

B. Methylene blue

C. Naloxone

D. Bemegride

E. Unithiol*

7. A 40-year-old patient suffers from bronchial asthma and prolonged tachycardia. Choose the optimal drug for rapid relief of bronchial spasm in the given case:

A. Salbutamol*

B. Adrenalin hydrochloride

C. Ephedrine hydrochloride

D. Orciprenaline

E. Isoprenaline (Isadrinum)

8. What drug will be the most appropriate for a patient suffering from chronic gastritis with increased secretion?

A. Pirenzepine*

B. Pancreatine

C. Pepsin

D. Aprotinin

E. Chlorphentermine

9. A 38-year-old woman developed a bronchial asthma attack. Which of the listed bronchial spasmolytics is effective for emergency aid and belongs to beta-2-adrenergic agonists?

A. Salbutamol

B. Adrenaline

C. Ipratropium bromide

D. Platyphyllin

E. Atropine

10. A patient with chronic bronchitis was prescribed a drug with mucolytic action. Name this drug:

A. Ambroxol*

B. Anaprilin (Propranolol)

C. Atropine sulfate

D. Magnesium sulfate

E. Paracetamol

11. Therapeutics unit of a hospital received a man suffering from ulcer disease of the stomach with hyperacidity. Which of the listed group of drugs must be used as a part of the complex therapy of this patient?

A. Histamine H2-receptor antagonists*

B. Calcium channel blockers

C. Nonsteroidal antiinflammatory drugs

D. Steroidal antiinflammatory drugs

E. Histamine Hi-receptor antagonists

12. A patient with exacerbated peptic ulcer disease of the stomach has made an appointment with the doctor. What type of drugs should be included in the complex

therapy of this patient?

A. H_2 antagonists*

B. H_1 antagonists

C. a-adrenergic antagonists

D. b-adrenergic antagonists

E. a-adrenergic agonists

13. A patient, who has been taking ft-adrenergic blockers, developed a bronchial spasm. What group of bronchodilators should be chosen to stop the bronchial spasm?

A. Myotropic antispasmodics*

B. в-adrenergic blockers

C. Indirect adrenergic agonists

D. Muscarinic cholinomimetic agents

E. Cholinesterase inhibitors

14. A patient has been taking bisacodyl for a long time to treat chronic constipation. However, several weeks later the aperient effect of the drug diminished. What is the possible cause of this

A. Acquired tolerance*

B. Drug dependence

C. Material cumulation

D. Functional cumulation

E. Sensitization

15. A patient with peptic ulcer disease was prescribed famotidine. As a result his gastric juice acidity significantly decreased. What is the mechanism of action of this drug

A. Histamine H2 receptor blockade*

B. Histamine H1 receptor blockade

C. Muscarinic M1 receptor blockade

D. Inhibition of H+, K+-ATPase activity

E. Blockade of histamine receptors in the sympathetic ganglia

16. patient has peptic ulcer of the stomach. What medicine can decrease the secretion of hydrochloric acid and pepsin by blocking the H2 receptors?

A. Physostigmine

B. Famotidine*

C. Phthalazol (Phthalylsulfathizole)

D. Fluvoxamine

E. Phenobarbital

17. A patient with suppurative bronchitis was hospitalized into the pulmonology department. As a part of complex therapy, he was prescribed a medicine that liquefies sputum and facilitates expectoration. Name this medicine:

A. Prednisolone

B. Morphine hydrochloride

C. Valerian tincture

D. Cholosas

E. Acetylcysteine*

DRUGS ACTING ON ENDOCRINE AND IMMUNE SYSTEMS AND HEMOSTASIS. VITAMINS

1. A 12-year-old child has intolerance to some foodstuffs. Their consumption causes an allergic reaction in form of itching skin eruptions. What antihistaminic drug should be admistered so that the child could attend school?

A. Ephedrine

B. Dimedrol

C. Diclofenac

D. Aminophylline

E. Loratadine*

2. A 45-year-old woman suffers from allergic seasonal coryza caused by the ambrosia blossoming. What medicine from the stabilizer of the adipose cells group can be used for prevention of this disease?

A. Diazoline

B. Ketotifen*

C. Phencarol

D. Tavegyl

E. Dimedrol

3. A 56-year-old patient with complains of thirst and frequent urination was diagnosed to have diabete mellitus and butamin was prescribed. What is the mechanism of action of this medicine?

A. It relieves transport of glucose through the cells' membranes

B. It helps to absorb the glucose by the cells of the organism tissues

C. It stimulates beta-cells of Langergans' islets*

D. It inhibits alpha cells of Langergans' islets

E. It inhibits absorption of glucose in the intestines

4. A 64-year-old woman has impairment of twilight vision (hemeralopy). What vitamin should be recommended in the first place?

A. Vitamin C

B. Vitamin B2

C. Vitamin E

D. Vitamin A*

E. Vitamin B6

5. A doctor administered a patient with allergic dermatitis a H1 - histamine blocker as a part of complex treatment. Name this medication:

A. Loratadine*

B. Hydrocortisone

C. Prednisolone

D. Adrenaline

E. Cromolyn sodium

6. A patient ill with collagenesis has been taking prednisolone for a long time. Hypokaliemia development caused spastic pain of skeletal muscles. What medication should be used in order to correct potassium exchange?

A. No - spa

B. Dithylinum

C. Thyrocalcitonin

D. Panangin*

E. Diazepam

7. A patient ill with essential hypertension was recommended a drug that prevents thrombosis. It is to be taken parenterally. What drug is it?

A. Neodicumarin

B. Amben

C. Protamine sulfate

D. Heparin*

E. Syncumar

8. A patient ill with neurodermatitis has been taking prednisolone for a long time. Examination revealed high rate of sugar in his blood. This complication is caused by the drug influence upon the following link of carbohydrate metabolism:

A. Glycogenogenesis activation

B. Inhibition of glycogen synthesis

C. Intensification of glucose absorption in the bowels

D. Gluconeogenesis activation*

E. Activation of insulin decomposition

9. A patient presents with twilight vision impairment. Which of the following vitamins should be administered?

A. Ascorbic acid

B. Retinol acetate*

C. Pyridoxine hydrochloride

D. Cyanocobalamin

E. Nicotinic acid

10. A patient suffers from diabetes melitus. After the regular insulin injection his condition grew worse: there appeared anxiety, cold sweat, tremor of limbs, general weakness, dizziness. What preparation can eliminate these symptoms?

A. Noradrenaline*

B. Caffeine

C. Butamide

D. Adrenaline hydrochloride

E. Glibutide

11. A patient suffers from stenocardia and takes isosorbide mononitrate. He was prescribed a complementary drug with disaggregating effect. What drug is it?

A. Nifedipine

B. Nitroglycerine

C. Acetylsalicilic acid*

D. Propranolol

E. Validol

12. A patient suffers from vision impairment - hemeralopy (night blindness). What vitamin preparation should be administered the patient in order to restore his vision?

A. Vicasol

B. Thiamine chloride

C. Pyridoxine

D. Retinol acetate*

E. Tocopherol acetate

13. A patient who had myocardial infarction was administered 75 mg of acetylsalicilic acid a day. What is the purpose of this administration?

A. Inflammation reduction

B. Temperature reduction

C. Pain relief

D. Reduction of thrombocyte aggregation*

E. Coronary vessel dilatation

14. A student came to see a doctor and asked to administer him a drug for treatment of allergic rhinitis that occurs in the period of linden flowering. What drug may be used?

A. Losartan

B. Loratadine*

C. Propanolol

D. Ambroxol

E. Noradrenaline hydrotartrate

15. A woman works as railway traffic controller. She suffers from seasonal vasomotor rhinitis and gets treatment in the outpatient setting. She was prescribed an antihistamine that has no effect upon central nervous system. What drug is it?

A. Tavegil

B. Dimedrol

C. Promethazine

D. Suprastin

E. Loratadine*

16. An elderly female patient suffers from the type 2 diabetes mellitus accompanied by obesity, atherosclerosis, coronary artery disease. Basal hyperinsulinemia is also present. What treatment would be the most appropriate?

A. Retabolil

B. Insulin

C. Lovastatin

D. Amlodipine

E. Glibenclamid*

17. Before tooth extraction a patient was advised to take a certain drug for haemorrhage prevention. What drug was advised?

A. Magnesium sulfate

B. Heparin

C. Asparcam

D. Vicasolum*

E. Dimedrol

18. Continious taking of a drug can result in osteoporosis, erosion of stomach mucous membrane, hypokaliemia, retention of sodium and water, reduced content of corticotropin in blood. Name this drug:

A. Reserpine

B. Prednisolone*

C. Digoxin

D. Indometacin

E. Hydrochlorothiazide

19. Examination of a 60 y.o. patient revealed hyperglycemia and glucosuria. A doctor administered him a medication for internal use. What medication is it?

A. Corglycon

B. Furosemide

C. Pancreatine

D. Glibenclamid*

E. Oxytocin

20. Examination of a 70-year-old patient rrevealed insulin-dependent diabetes. What drug should be administered?

A. Cortisone

B. Glibenclamid*

C. Mercazolilum

D. Parathyroidin

E. Insulin

21. In order to accelerate healing of a radiation ulcer a vitamin drug was administered. What drug is it?

A. Prednisolone

B. Retabolil

C. Methyluracil

D. Levamisole

E. Retinol acetate*

22. Patient was on glucocorticoids for a long time, discontinuation of usage caused exacerbation of the illness, decreased BP, weakness. How can you explain it?

A. Cumulation

B. Adaptation to the medicine

C. Sensitization

D. Hyperproduction of ACTH

E. Insufficiency of adrenal glands*

23. Testosterone and it's analogs increase the mass of skeletalmuscles that allows to use them for treatment of dystrophy. Due to interaction of the hormon with what cell substance is this action caused?

A. Nuclear receptors*

B. Membrane receptors

C. Proteins- activators of transcription

D. Chromatin

E. Ribosomes

24. A 16-year-old young man suffering from seasonal allergic rhinitis has been prescribed a highly active second-generation H1 blocker, which can be characterized by absence of marked sedative action. Name this drug:

A. Loratadine*

B. Pipolphen

C. Chloropyramine (Suprastin)

D. Indometacin

E. Erythromycin

25. A 30-year-old woman exhibits signs of virilism (growth of body hair, balding temples, menstrual disorders). This condition can be caused by overproduction of the following hormone:

A. Testosterone*

B. Oestriol

C. Relaxin

D. Oxytocin

E. Prolactin

26. A comatose patient was taken to the hospital. He has a history of diabetes mellitus. Objectively: Kussmaul breathing, low blood pressure, acetone odor of breath. After the emergency treatment the patient's condition improved. What drug had been administered?

A. Insulin*

B. Adrenaline

C. Isadrinum

D. Glibenclamide

E. Furosemide

27. A patient presents with dry peeling skin, frequent cases of acute respiratory diseases, xerophthalmia. What vitamin preparation should be prescribed in this case?

A. Retinol acetate*

B. Thiamine

C. Cyanocobalamin

D. Menadione (Vikasolum)

E. Ergocalciferol

28. A patient with acute myocardial infarction has been administered heparin as a part of complex therapy. Sometime after heparin injection the patient developed hematuria. What heparin antagonist should be injected to remove the complication?

A. Protamine sulfate*

B. Vicasol

C. Aminocaproic acid

D. Neodicumarin

E. Fibrinogen

29. A patient with insulin-dependent diabetes mellitus has been administered insulin. After a certain period of time the patient developed fatigue, irritability, excessive sweating. What is the main mechanism of such presentations developing?

A. Carbohydrate starvation of the brain*

B. Increased glycogenolysis

C. Increased ketogenesis

D. Increased lipogenesis

E. Decreased glyconeogenesis

30. A patient, who has been subsisting exclusively on polished rice, has developed polyneuritis due to thiamine deficiency. What substance is an indicator of such avitaminosis, when it is excreted with urine?

A. Pyruvic acid*

B. Malate

C. Methylmalonic acid

D. Uric acid

E. Phenyl pyruvate

31. A woman resting in the countryside has been stung by a bee. Immediately after she developed pain in the stung area. In a few minutes there developed a vesicle, erythema and intense itch; later - urticaria and expiratory dyspnea. What factors resulted in the patient developing expiratory dyspnea?

A. Histamine*

B. Hageman’s factor

C. Lysosomal enzymes

D. Noradrenaline

E. Adrenaline

32. oenzym A participates in numerous important metabolic reactions. It is a derivative of the following vitamin:

A. Pantothenic acid*

B. Thiamine

C. Niacin

D. Calciferol

E. Ubiquinone

33. For people adapted to high external temperatures profuse sweating is not accompanied by loss of large volumes of sodium chloride. This is caused by the effect the following hormone has on perspiratory glands:

A. Aldosterone*

B. Vasopressin

C. Cortisol

D. Thyroxin

E. Natriuretic

34. A patient is diagnosed with diabetic coma. Blood sugar is 18,44 mmol/l. What glucoseregulating drug should be prescribed in the given case?

A. Rapid-acting insulin*

B. Intermediate-acting insulin

C. Long-acting insulin

D. Biguanide

E. Sulfonylurea derivative

35. A pregnant woman with several miscarriages in anamnesis is prescribed a therapy that includes vitamin preparations. What vitamin facilitates carrying of a pregnancy?

A. Alpha-tocopherol*

B. Folic acid

C. Cyanocobalamin

D. Pyridoxal phosphate

E. Rutin

36. A woman with seasonal vasomotor rhinitis, who works as a train dispatcher and is an outpatient, should be prescribed an antihi-staminic drug that does not suppress central nervous system. Name this drug:

A. Loratadine*

B. Dimedrol (Diphenhydramine)

C. Diprazine (Promethazine)

D. Suprastin (Chloropyramine)

E. Tavegyl (Clemastine)

37. After a severe stress the patient presents with eosinopenia in the blood test. In this case theBdecreased number of eosinophils can explain changes in the level of the following hormones:

A. Glucocorticoids*

B. Adrenaline

C. Insulin

D. Mineralocorticoids

E. Vasopressin

38. Blood of the patients with diabetes mellitus shows increased content of free fatty acids. Name the most likely cause of this:

A. Increased activity of adipose triglyceride lipase*

B. Accumulation of palmitoyl-CoA in cytosol

C. Activation of ketone bodies utilization

D. Activation of apoA1, apoA2, and apoA4 apolipoprotein synthesis

E. Decreased activity of plasma phosphatidylcholine-cholesterol-acyltransferase

39. Due to prolonged taking of a drug the patient can develop osteoporosis, gastric mucosal erosions, hypokalemia, sodium and water retention, and decreased blood content of corticotropine. Specify this drug:

A. Prednisolone*

B. Hydrochlorothiazide

C. Digoxin

D. Indometacin

E. Reserpine

40. During acute hemorrhage the body loses not only fluid but also electrolytes. What substance solution can be used as a simple blood substitute?

A. Sodium chloride*

B. Sodium bromide

C. Albumin

D. Sodium nucleotide

E. Calcium chloride

41. During regular check-up a child is determined to have interrupted mineralization of the bones. What vitamin deficiency can be the cause?

A. Calciferol*

B. Riboflavin

C. Tocopherol

D. Folic acid

E. Cobalamin

42. Ionizing radiation or vitamin E deficiency affect the cell by increasing lysosome membrane permeability. What are the possible consequences of this pathology?

A. Partial or complete cell destruction*

B. Intensive protein synthesis

C. Intensive energy production

D. Restoration of cytoplasmic membrane

E. Formation of maturation spindle

43. Preoperative examination revealed prothrombin deficiency in the blood of the patient. What drug should be preliminarily prescribed to mitigate blood loss in the patient during the surgery?

A. Vicasol (Menadione)*

B. Thrombin

C. Aminocapronic acid

D. Phenylin (Phenindione)

E. Contrykal (Aprotinin)

44. To stop the bleeding the patient was prescribed a direct coagulant. During introduction of the solution the patient was complaining of pain along the vein, hot sensation, and palpitations. Name the drug that causes such symptoms:

A. Calcium chloride*

B. Hirudine

C. Ergocalciferol

D. Pentoxyl

E. Streptokinase

45. A 25-year-old young man came to the doctor complaining of general weakness, rapid fatigability, irritability, reduced working ability, and bleeding gums. What vitamin is likely to be deficient in this case?

A. Ascorbic acid*

B. Riboflavin

C. Thiamine

D. Retinol

E. Folic acid

46. A 56-year-old man complains of thirst and frequent urination. The endocrinologist diagnosed this patient with diabetes mellitus and prescribed him glibenclamide. What mechanism of action does this drug have?

A. Stimulation of в-cells of islets of Langerhans*

B. Facilitates glucose uptake by the tissues

C. Facilitates glucose transport through cell membranes

D. Suppression of a-cells of islets of Langerhans

E. Inhibits glucose absorption in the intestine

47. A hereditary disease - homocystinuria - is caused by disturbed transformation of homocysteine into methionine. Accumulated homocysteine forms its dimer (homocystine) that can be found in urine. What vitamin preparation can decrease homocysteine production?

A. Vitamin Bi2*

B. Vitamin C

C. Vitamin Bx

D. Vitamin B2

E. Vitamin PP

48. A patient with contact dermatitis needs to be prescribed an antihistamine drug without somnolescent effect. Select this drug from the list:

A. Loratadine*

B. Dimedrol (Benadryl)

C. Suprastin (Chloropyramine)

D. Diprazine (Promethazine)

E. Ranitidine

49. An 8-year-old girl presents with signs of disturbed twilight vision. This condition is caused by the deficiency of vitamin:

A. A*

B. E

C. D

D. K

E. F

50. Condition of a patient with diabetes mellitus sharply deteriorated after a regular injection of insulin. The patient became anxious and broke out in cold sweat; tremor of the extremities, general weakness, and dizziness appeared. What medicine can remove these symptoms?

A. Adrenaline*

B. Tolbutamide

C. Caffeine

D. Noradrenaline

E. Glibutid (Buformin)

51. Due to prolonged stay in the mountains at the altitude of 3000 m above the sea level, a person developed increased oxygen capacity of blood, which was directly caused by intensified production of:

A. Erythropoietins*

B. Leukopoietins

C. Carbaminohemoglobin

D. Catecholamines

E. 2,3-bisphosphoglycerate

52. Patients with bile duct obstruction typically present with inhibited blood clotting and develop hemorrhages due to insufficient assimilation of vitamin:

A. K*

B. A

C. D

D. E

E. C

53. A 33-year-old woman, who for a long time has been treated for chronic polyarthritis, complains of elevated blood pressure, changes in adipose tissue distribution, and disturbed menstrual cycle. What drug does this patient take?

A. Prednisolone*

B. Indometacin

C. Butadion (Phenylbutazone)

D. Synaflan (Fluocinolone acetonide)

E. Beclometasone

54. A 39-year-old man presents with hyperkeratosis, disturbed twilight vision, and high risk of infectious processes. What vitamin preparation should he be prescribed

A. Retinol acetate*

B. Pyridoxine hydrochloride

C. Riboflavin

D. Ergocalciferol

E. Tocopherol acetate

55. A 40-year-old man with pulmonary tuberculosis was prescribed isoniazid. Prolonged taking of this drug can result in development of the following vitamin deficiency:

A. Pyridoxine*

B. Thiamine

C. Cobalamin

D. Biotin

E. Folic acid

56. A patient with diabetes mellitus and allergic dermatitis was prescribed a certain fluorinated hormone drug in the ointment dosage form. When the patient asked, how this drug was better than the hydrocortisone ointment, the doctor explained that the prescribed medicine:

A. Had practically no resorptive effect*

B. Increased insulin synthesis

C. Had short-term action

D. Was less potent

E. Was cheaper

57. A patient with myocardial infarction in the acute phase has been hospitalized into the cardiology unit. To induce platelet lysis in the patient's coronary vessels during the early hours of infarction, the following enzyme should be used:

A. Streptokinase*

B. Hyaluronidase

C. Trypsin

D. Chymotrypsin

E. Lysozyme

58. A woman with allergic neurodermatitis was prescribed a second-generation antihistamine without depressing effect on the CNS. Name this drug:

A. Loratadine*

B. Diazolin (Mebhydrolin)

C. Tavegyl (Clemastine)

D. Dimedrol (Diphenhydramine)

E. Ketotifen

59. Domestic accident has resulted in a significant blood loss in the patient,

which was accompanied by a drop-in blood pressure. What hormones ensure quick restoration of the blood pressure caused by a blood loss

A. Adrenaline, vasopressin*

B. Cortisol

C. Reproductive hormones

D. Oxytocin

E. Aldosterone

60. Examination of a patient shows decreased leukocyte and erythrocyte count and low hemoglobin levels in peripheric blood, as well appearance of large cells (megaloblasts). What vitamin deficiency can cause these clinical presentations

A. Folic acid*

B. Niacin

C. Ascorbic acid

D. Riboflavin

E. Biotin

61. The Gerontology Institute recommends older people to take vitamin complexes that contain vitamin E. What is the main function of this vitamin

A. Antioxidant*

B. Antihemorrhagic

C. Antiscorbutic

D. Antineuritic

E. Antidermatitic

62. Wernicke-Korsakoff syndrome often develops in chronic alcoholics, who have a low-vitamin diet. Decreased transketolase activity can be observed in the course of this disease. What vitamin deficiency causes this development

A. Thiamine*

B. Retinol

C. Niacin

D. Cobalamin

E. Riboflavin

63. A certain vitamin is a component of glutamic acid decarboxylase as a coenzyme, takes part in the formation of gamma-aminobutyric acid and its deficiency manifests as convulsions. Name this vitamin:

A. Cobalamin

B. Tocopherol

C. Pyridoxine*

D. Ascorbic acid

E. Folic acid

64. A laboratory rat with chronic kidney failure has osteoporosis, pathologic calcification of the internal organs and arterial hypertension. These disturbances are associated with increased activity of the following hormone:

A. Adrenaline

B. Triiodothyronine

C. Thyroxin

D. Parathyroid hormone*

E. Calcitonin

65. A nurse mistakenly gave nearly a double dose of insulin to a patient with diabetes mellitus, which caused hypoglycemic coma in the patient. What medicine should be administered to bring the patient out of the coma?

A. Somatotropin

B. Insulin

C. Noradrenaline

D. Glucose*

E. Lidase

66. A patient has an allergic response with itching, edemas and skin redness. In the tissues there is an increased concentration of a certain biogenic amine. Name this biogenic amine:

A. Histamine*

B. Tryptamine

C. Serotonin

D. Dopamine

E. Gamma-aminobutyric acid

67. A patient used an indirect-acting adrenergic agonist to treat rhinitis. After the patient has been putting in the nose drops for several days, the casoconstrictive effect of the drug gradually diminished. Name this phenomenon:

F. Allergy

G. Cumulation

H. Teratogenicity

I. Tachyphylaxis*

J. Idiosyncrasy

68. A patient with ischemic heart disease has increased levels of triglycerides and low density lipoproteins in this blood plasma. What medicine should he be prescribed?

A. Fenofibrate*

B. Doubutamine

C. Famotidine

D. Lisinopril

E. Amiodarone

69. Due to a case of diphtheria, preventive immunization of the whole contact group of students is necessary. What preparation should be used to produce artificial active immunity?

A. Inactivated vaccine

B. DTP vaccine

C. Specific immunoglobulin

D. Diphtheria anatoxin*

E. Anti-diphtheria serum

ANTIMICROBIAL DRUGS. ANTITUMOR AGENTS

1. A 19-year-old woman suffers from primary syphilis. Doctor administered her complex therapy that includes benzylpenicillin sodium salt. What is the mechanism of action of this drug?

A. It blocks RNA synthesis

B. It blocks synthesis of cytoplasm proteins

C. It blocks thiol enzymes

D. It blocks synthesis of peptidoglycan of microbal membrane*

E. It blocks DNA synthesis

2. A 30-year-old patient complains about having abdominal pain and diarrhea for five days; body temperature rise up to 37,5C along with chills. The day before a patient had been in a forest and drunk from an open water reservoir. Laboratory analyses enabled to make the following diagnosis: amebic dysentery. What is the drug of choice for its treatment?

A. Phthalazol

B. Furazolidonum

C. Levomycetin

D. Metronidazole*

E. Emetine hydrochloride

3. A 5-year-old child has been diagnosed with acute right distal pneumonia. Sputum inoculation revealed that the causative agent is resistant to penicillin, but it is senstive to macrolides. What drug should be prescribed?

A. Ampicillin

B. Tetracycline

C. Gentamycin

D. Streptomycin

E. Azithromycin*

4. A 60-year-old patient was admitted to the surgical department because of infection caused by blue pus bacillus (Pseudomonas aeruginosa) which is sensative to

penicillin antibiotics. Indicate which of the given penicillins has marked activity to the Pseudomonas aeruginosa?

A. Phenoxymethylpenicillin

B. Benzylpenicillin

C. Carbenicillin disodium*

D. Oxacillin

E. Methicillin

5. A 7-year-old child is ill with bronchitis. It is necessary to administer him an antibacterial drug. What drug of fluoroquinolone group is contraindicated at this age?

A. Amoxicillin

B. Sulfadimethoxine

C. Ampicillin

D. Ciprofloxacin*

E. Ampiox

6. A patient consulted a doctor about bowels disfunction. The doctor established symptoms of duodenitis and enteritis. Laboratory examination helped to make the following diagnosis: lambliosis. What medication should be administered?

A. Tetracycline

B. Metronidazole*

C. Monomycin

D. Chingamin

E. Erythromycin

7. A patient consulted a stomatologist about purulent inflammation of his gums. What drug will be the most effective if it is suspected that a causative agent is an anaerobe?

A. Nitroxoline

B. Metronidazole*

C. Oxacillin sodium

D. Co-trimoxazole

E. Gentamicin

8. A patient has herpetic rash. What medication should be administered?

A. Biseptol

B. Acyclovir*

C. Clotrimazole

D. Benzylpenicillin sodium salt

E. Gentamycin

9. A patient ill with amebiasis was prescribed a certain drug. The use of alcohol together with this drug is contra-indicated because the drug inhibits metabolism of ethyl alcohol. What drug is it?

A. Aminazine

B. Clonidine

C. Reserpine

D. Diazepam

E. Metronidazole*

10. A patient suffers from pulmonary tuberculosis. During treatment neuritis of visual nerve arose. What drug has caused this by-effect?

A. Rifampicin

B. Ethambutol

C. Kanamycin

D. Isoniazid*

E. Streptomycin

11. A patient suffers from severe postoperative pseudomonadous infection. What of the following antibiotics should be administered in this case?

A. Cephazolin

B. Benzylpenicillin

C. Amicacin sulfate*

D. Erythromycin

E. Doxycycline

12. A patient underwent appendectomy. In the postoperative period he has been taking an antibiotic. The patient complains about hearing impairment and vestibular

disorders. What group of antibiotics has such by-effects?

A. Aminoglycosides*

B. Cephalosporins

C. Tetracyclines

D. Macrolides

E. Penicillins

13. A patient was diagnosed with active focal pulmonary tuberculosis. What drug should be prescribed in the first place?

A. Ethoxide

B. Sulfalen

C. Isoniazid*

D. Ethionamide

E. Cyclocerine

14. A patient with bacterial pneumonia was prescribed benzylpenicillin. What is the mechanism of its antibacterial effect?

A. Abnormal permeability of cytoplasmic membrane

B. Inhibition of intracellular protein synthesis

C. Inhibition of SH-groups of microorganism enzymes

D. Inhibition of synthesis of microorganism wall*

E. Antagonism with p-amino-benzoic acid

15. Gonorrhoea was revealed in the patient on bacterioscopy of the smear from urethra. Taking into account that medecines for gonorrhoea are fluorquinolones, patient should be prescribed:

A. Urosulfan

B. Furazolidone

C. Fluorouracil

D. Ciprofloxacin*

E. Cefazoline

16. Mother of a 2-year-old child consulted a stomatologist. In the period of pregnancy she was irregularly taking antibiotics for an infectious disease. Examination

of the child revealed incisor destruction, yellow enamel, brown rim around the dental cervix. What drug has apparent teratogenic effect?

A. Octadine

B. Furosemide

C. Ampiox

D. Xantinol nicotinate

E. Doxacycline*

17. Patient was admitted to the infection unit with diagnosis of bacterial dysentery. On laboratory studies it was revealed that causative element is sensative to the many antimicrobial medicines, but patient has anemia. What medicine is contra-indicated to the patient?

A. Levomycetin*

B. Enteroseptol

C. Phthalazol

D. Furazolidone

E. Ampicillin

18. Patient with pneumonia has intolerance to antibiotics. Which of the conbined sulfanilamide medicines should be prescribed to the patient?

A. Natrium sulfacyl

B. Aethazol

C. Biseptol*

D. Streptocid

E. Sulfadimethoxine

19. Systemic amebiasis with involvment of intestines, liver, lungs was diagnosed in a 52-year-old patient. What drug should be prescribed?

A. Enteroseptol

B. Quiniofone

C. Tetracycline

D. Quingamine

E. Metronidasol*

20. A 26-year-old woman with bronchitis has been administered a broad spectrum antibiotic as a causal treatment drug. Specify this drug:

A. Doxycycline*

B. Interferon

C. BCG vaccine

D. Ambroxol

E. Dexamethasone

21. A patient has been diagnosed with gonorrhea. As fluoroquinolones are the drugs of choce for treatment of gonorrhea the patient should be prescribed:

A. Ciprofloxacin*

B. Furazolidone

C. Fluorouracil

D. Sulfacarbamide (Urosulfanum)

E. Cefazolin

22. After an extended treatment with sulfanamides a patient has developed macrocytic anemia. Production of active forms of the following vitamin is disrupted in such a condition:

A. Folic acid*

B. Thiamine

C. Riboflavin

D. Pyridoxine

E. Cyanocobalamin

23. Name the halogen-containing antiseptic with fungicidal properties, which is used to treat dermatomycosis:

A. Iodine solution*

B. Formalin solution

C. Methylene blue

D. Brilliant green

E. Boric acid solution

24. Prescription of penicillin G sodium salt has caused development of

neurotoxic effects (hallucinations, convulsions). Such reaction is the result of antagonism with the following neurotransmitter:

A. GABA*

B. Dopamine

C. Serotonin

D. Adenosine

E. Acetylcholine

25. Volunteers have arrived in Nigeria to assist the locals in aftermath of earthquakes. What drug should they prescribe for individual chemoprophylaxis of malaria?

A. Chingamin*

B. Pyrantel

C. Pyrimethamine (Chloridinum)

D. Primaquine

E. Interferon (Laferon)

26. A patient with pulmonary tuberculosis is prescribed the most effective antituberculous antibiotic. Name this drug:

A. Rifampicin*

B. Tetracycline

C. Streptocide

D. Furasolidone

E. Bactrim (Co-trimoxazole)

27. In preparation for business trip abroad the doctor was prescribed a histoschizontocidal antimalarial drug as a personal means of disease prevention. What drug was given to the doctor?

A. Chingamin*

B. Biseptol (Co-trimoxazole)

C. Doxycycline

D. Mefloquine

E. Quinine

28. To treat bronchitis the patient was prescribed a beta-lactam antibiotic. Its mechanism of action is based on inhibition of murein production, which results in death of the causative agent. Name this drug:

A. Penicillin G Sodium Salt*

B. Bijochinol (Quinine bismuth iodide)

C. Ciprofloxacin

D. Azithromycin

E. Streptomycin

29. A 4-year-old child presents with numerous carious cavities and yellow-colored teeth. The mother has a history of antibiotic treatment during her pregnancy. What antibiotic was the most likely taken by the child's mother?

A. Doxycycline*

B. Streptomycin sulfate

C. Ampicillin

D. Erythromycin

E. Cefazolin

30. A patient with streptococcal infection of the gingiva was prescribed a drug with в-lactam ring in its structure. What drug of those listed below belongs to this pharmacological group?

A. Benzylpenicillin*

B. Rifampicin

C. Erythromycin

D. Streptomycin sulfate

E. Levomycetin (Chloramphenicol)

31. An 18-year-old patient has developed candidiasis after the case of pneumonia treated with b- lactam antibiotic. What antimycotic agent should be prescribed?

A. Fluconazole*

B. Streptomycin

C. Ampicillin

D. Phthalylsulfathiazole

E. Trimethoprim/sulfamethoxazole (Bi-septol)

32. Before a surgery the patient was prescribed a synthetic antiprotozoal drug for prevention of wound infection. The prescribed drug is highly effective against Helicobacter pylori. Name this drug:

A. Metronidazole*

B. Doxycycline hydrochloride

C. Chingamin (Chloroquine)

D. Aciclovir

E. Isoniazid

33. In the hematology unit a patient with leukemia was prescribed 5-Fluorouracil. This drug:

A. Inhibits DNA synthesis*

B. Stimulates DNase

C. Inhibits translation

D. Inhibits transcription

E. Catalyzes replication

34. A 40-year-old man with pulmonary tuberculosis was prescribed isoniazid. Prolonged taking of this drug can result in the development of the following vitamin deficiency:

A. Biotin

B. Cobalamin

C. Pyridoxine*

D. Folic acid

E. Thiamine

35. Mother of a 2-year-old child made an appointment with the dentist. She complains of teeth destruction in her child. Examination shows that the milk teeth of the child are deformed, carious and have a brown border at their cervices. Medical history of the mother revealed that during her pregnancy she had been taking antibiotics without the doctor’s prescription. What group of antibiotics with the most marked teratogenic effect

was likely taken by the mother?

A. Aminoglycosides

B. Macrolides

C. Tetracyclines*

D. Cephalosporins

E. Penicillins

36. Pterin derivatives – aminopterin and methotrexate – are competitive inhibitors of dihydrofolate reductase. As a result, they suppress the regeneration of tetrahydrofolic acid from dihydrofolate. These medicines lead to the inhibition of intermolecular transport of one-carbon groups. In the process, the biosynthesis of the following polymer is suppressed:

A. Gangliosides

B. Glycosaminoglycans

C. Homopolysaccharides

D. Protein

E. DNA*

ACUTE POISONINGS

1. A 38-year-old man who poisoned himself with mercury dichloride was taken to the admission room in grave condition. What antidote should be immediately introduced?

A. Nalorphine

B. Dipiroxim

C. Atropine

D. Unithiol*

E. Isonitrosine

2. A patient with acute morphine poisoning was delivered to a hospital. What specific narcotic antagonist should be chosen in this case?

A. Digoxin

B. Paracetamol

C. Methacin

D. Naloxone*

E. Unithiol

3. Examination of a patient revealed extremely myotic pupils, sleepiness, infrequent Chain-Stoke's respiration, urinary retention, slowing-down of heart rate, enhancement of spinal reflexes. What substance caused the poisoning?

A. Caffeine

B. Atropine

C. Phosphacole

D. Morphine*

E. Barbital

4. Patient in the unconscious state was admitted to the emergency room. Skin is cold, pupils are delayed, breathing is heavy, with cycles of the Cheyne - Stokes type, blood pressure is decreased, urinary bladder is overloaded. Poisoning with what substance is the most likely?

A. Non-narcotic analgesics

B. Sedatives

C. M- cholinergic antagonists

D. Narcotic analgesics*

E. Diuretics

5. Patient with mercury poisoning was admitted to the toxicological department from the chemical industry. What medicine should be used?

A. Naloxone

B. Isonitrozin

C. Unithiol*

D. Activated carbon

E. Enterosorbent

6. During treatment with bismuth preparations a patient with syphilis developed gray spots on his oral mucosa and nephropathy symptoms. What drug is used as an antidote to bismuth preparations poisoning?

A. Unithiol*

B. Nalorphine

C. Bemegride

D. Naloxone

E. Methylene blue

7. An unconscious patient was brough into the admission room. He presents with cold skin, constricted pupils, difficult respiration with Cheyne-Stokes pattern, low blood pressure, overfilled urinary bladder. He was diagnosed with morphine poisoning. What drug should the patient be given as an antagonist in this case?

A. Cytitone

B. Unithiol

C. Sodium thiosulfate

D. Naloxone*

E. Bemegride

USMLE MCQs

1. A 10-year-old asthmatic is prescribed a cromolyn sodium inhaler to be administered prior to vigorous activity to prevent an attack. Which of the following is the mechanism of action of this drug?

A. It blocks muscarinic receptors

B. It selectively stimulates beta2 receptors

C. It reduces bronchial inflammation and edema

D. It inhibits the degranulation of mast cells*

E. It stimulates all beta receptors

2. A 19-year-old girl accompanies her 21-year-old boyfriend into the emergency department after a party. He is agitated and diaphoretic, and has dilated pupils. He resists efforts to subdue him, stating, “there are ants crawling up my arm.” The girl recalls seeing her boyfriend and others at the party heating “something on aluminum foil” with a cigarette lighter and inhaling the fumes. Which of the following substances did he most likely inhale?

A. Methamphetamine*

B. Jimson weed

C. Lysergic acid diethylamide (LSD)

D. Model airplane glue

E. Heroin

3. A 20-year-old female college athlete develops irregular menstrual cycles, acne, a deepening voice, and recent growth of facial hair. Lab values are significant for elevated liver transaminases. She is not on oral contraceptives. Which of the following drugs could be responsible for her presentation?

A. Ethinyl estradiol

B. Nandrolone*

C. Medroxyprogesterone

D. Megestrol acetate

E. Flutamide

4. A 21-year-old college senior comes to the university health clinic to discuss contraception options. She is in a monogamous relationship with her boyfriend of 2 years and would like a prescription for oral contraceptive pills. She does not smoke and has no medical conditions. Her blood pressure is 110/70 mm Hg. Physical examination is unremarkable. After the patient is counseled about safe-sex practices, she says that she does not want to get pregnant and is curious about the availability of medications to induce abortion. She should be told that which of the following eicosanoids is available as a vaginal suppository to induce abortion?

A. LTA4

B. PGD2

C. PGH2

D. PGF2

E. PGG2

F. PGE2*

G. PGI2

5. A 22-year-old woman develops secondary amenorrhea and galactorrhea, and MRI of the head reveals a small intrasellar tumor. Which of the following is the most appropriate pharmacologic treatment for this patient's condition?

A. Cholinesterase inhibitors

B. Serotonin reuptake inhibitors

C. Dopamine antagonists

D. Drugs enhancing GABAergic transmission

E. Dopamine agonists*

6. A 24-year-old man presents to the emergency department with hypertension, tachycardia, an elevated body temperature, diaphoresis, mydriasis, and severe agitation. His mother reports that he uses illicit drugs, although she is not sure which kind. Which of the following agents is the most appropriate therapy for this patient?

A. Atropine

B. Labetalol*

C. Fluoxetine

D. Flumazenil

E. Naloxone

F. Physostigmine

7. A 24-year-old man underwent treatment for Hodgkin lymphoma 1 year ago. He presents with increasing dyspnea and cough. Physical exam is remarkable for rales bilaterally. Arterial blood gases show hypoxia, and bilateral pulmonary infiltrates are seen on chest X-ray. Which of the following chemotherapeutic agents most likely produced these side effects?

A. Streptozocin

B. Cyclophosphamide

C. Doxorubicin

D. Etoposide

E. 5-Fluorouracil

F. Bleomycin*

G. Vincristine

8. A 24-year-old migrant farm worker is rushed to a nearby emergency department after an accidental exposure to parathion. He is in respiratory distress and is bradycardic. Which of the following drugs can be given to increase the activity of his acetylcholinesterase?

A. Atropine

B. Deferoxamine

C. Pralidoxime*

D. N-acetylcysteine

E. Physostigmine

F. Dimercaprol

9. A 24-year-old woman attempts suicide by ingesting 50 acetaminophen tablets. She is rushed to the emergency department. Which of the following treatments would the attending physician most likely order?

A. Alkalinization of urine

B. N-acetylcysteine*

C. Deferoxamine

D. Ca2+/EDTA chelation

E. Protamine sulfate

10. A 24-year-old woman is diagnosed with cancer. Her oncologist wants to use a chemotherapy agent specific for the M phase of the cell cycle in her regimen. Which of the following drugs meets the criteria?

A. Cytarabine

B. Vincristine*

C. Hydroxyurea

D. Mechlorethamine

E. Daunorubicin

11. A 24-year-old woman on her honeymoon presents to the cruise ship physician with a dilated right eye and complains that she could not read the lunch menu with the same eye. Which of the following drugs is most likely responsible for her symptoms?

A. Tetrahydrozoline

B. Physostigmine

C. Pilocarpine

D. Phenylephrine

E. Scopolamine*

F. Timolol

12. A 24-year-old woman presents to her physician with a rasping cough. The physician gives her a sample of an antitussive drug that is neither addicting nor constipating. Which of the following drugs was she mostly likely given?

A. Codeine

B. Levorphanol

C. Diphenoxylate

D. Dextromethorphan*

E. Oxycodone

13. A 26-year-old woman undergoing surgery is given an inhalant anesthetic. She is also given an IV dose of succinylcholine. Within minutes, she develops a heart rate of 124/min and increasing core body temperature. Which of the following is the mechanism of action of the drug of choice for this patient's condition?

A. It is a GABA receptor agonist that enhances inhibition of nerve impulses

B. It is a competitive antagonist of ACh at the motor end plate

C. It interferes with the release of Ca2+ from the sarcoplasmic reticulum*

D. It uncouples oxidative phosphorylation, thereby preventing heat formation

14. A 27-year-old drug abuser ingested 15 10-mg dextroamphetamine tablets 5 hours ago, and is brought to the emergency department in an agitated state. Which of the following agents can hasten the elimination of the drug from this patient?

A. Acetazolamide

B. Probenecid

C. Penicillamine

D. Ammonium chloride*

E. Sodium bicarbonate

15. A 30-year-old pregnant woman has a history of rheumatoid arthritis, which has been managed successfully with NSAIDs. However, she has recently visited her general practitioner complaining of burning epigastric pain worsened by food intake. Which of the following ulcer medication is most likely contraindicated in this patient?

A. Cimetidine

B. Famotidine

C. Omeprazole

D. Misoprostol*

E. Ranitidine

16. A 30-year-old woman with a history of tonic-clonic seizures complains of double vision, thickened gums, and growth of facial hair since starting a new medication. Which of the following anticonvulsant medications is most likely responsible for her symptoms?

A. Carbamazepine

B. Phenytoin*

C. Phenobarbital

D. Ethosuximide

E. Valproic acid

17. A 32-year-old man is spraying malathion on the plum trees in his backyard. While taking a break, he reaches down to grab his drink and accidentally takes a swig of malathion instead. His girlfriend immediately takes him to a nearby emergency department. Which of the following drugs could be given to induce emesis?

A. Ondansetron

B. Loperamide

C. Metoclopramide

D. Apomorphine*

E. Ranitidine

18. A 32-year-old man, infected with HIV, is diagnosed with Hodgkin lymphoma. If the patient's CD4 count is 505/mm3, which of the following agents would be suitable for the treatment of this patient's lymphoma without further compromising his immune system?

A. Busulfan

B. Vincristine*

C. Cyclophosphamide

D. Paclitaxel

E. Cisplatin

19. A 32-year-old woman who is 36 weeks pregnant is told during a prenatal appointment that her fetus is in a breech presentation. An external cephalic version (manually turning the fetus from the outside) is scheduled for the following week. For this procedure, the uterus must be relaxed. Which of the following drugs would be most appropriate for achieving this result?

A. Clomiphene

B. Ritodrine*

C. Progesterone

D. Propranolol

E. Phenylephrine

20. A 33-year-old man receiving chemotherapy for testicular carcinoma develops signs of renal tubular damage. Which of the following drugs is most likely responsible for this nephrotoxicity?

A. Bleomycin

B. Vinblastine

C. Cyclophosphamide

D. Cisplatin*

E. Vincristine

21. A 33-year-old newlywed presents to her physician with a sharp, burning epigastric pain. She had recently begun a regimen of nonsteroidal anti-inflammatory drugs (NSAIDs) to help relieve pain caused by rheumatoid arthritis. Her physician recommends misoprostol to relieve her gastric distress. Before prescribing this drug, the physician should first obtain the results of a[No]

A. antinuclear antibody test

B. pregnancy test*

C. esophageal manometry

D. osmotic fragility test

E. barium swallow

22. A 33-year-old with a history of asthma is being treated for symptoms of hypertension. Which of the following beta-blockers would be an appropriate therapy for this patient?

A. Isoproterenol

B. Metoprolol*

C. Labetalol

D. Propranolol

E. Timolol

23. A 33-year-old woman goes to the physician for a minor outpatient procedure. The physician wants to use a long-duration ester for a local anesthetic. Which of the following agents should be used?

A. Tetracaine*

B. Cocaine

C. Lidocaine

D. Procaine

E. Bupivacaine

24. A 34-year-old man with a long history of asthma is referred to a pulmonologist. The physician decides to prescribe zileuton. The mechanism of action of this drug is to

A. antagonize LTD4 receptors

B. stimulate beta2 receptors

C. inhibit phosphodiesterase

D. inhibit phospholipase A2

E. inhibit 5-lipoxygenase*

25. A 35-year-old woman with systemic lupus erythematosus abruptly stops taking her glucocorticoids because “she is well now and does not want to get fat.” Several days later, the woman goes to the emergency department because she “feels terrible.” If serum studies are performed on this patient, which of the following findings would be expected?

A. Elevated ACTH

B. Elevated cortisol

C. Hypernatremia

D. Hypokalemia

E. Hypoglycemia*

26. A 41-year-old diabetic woman presents to her physician complaining of gastrointestinal distress and heartburn, particularly after meals. Which of the following drugs should her physician prescribe to relieve her symptoms?

A. Prochlorperazine*

B. Diphenoxylate

C. Famotidine

D. Omeprazole

E. Sucralfate

27. A 45-year-old man presents to the emergency department with severe pneumonia. He recently returned from a business trip, and has a history of smoking and alcohol use. An x-ray film shows extensive consolidation affecting portions of each lung lobe. Culture on charcoal yeast extract medium grows out a small gramnegative bacterium. Which of the following antibiotics is the most appropriate treatment for this patient?

A. Ceftriaxone

B. Erythromycin*

C. Clindamycin

D. Chloramphenicol

E. Metronidazole

F. Penicillin V

G. Pentamidine

H. Trimethoprim-sulfamethoxazole

I. Vancomycin

28. A 45-year-old woman is brought to the hospital after collapsing on the sidewalk in front of the hospital. Her friend reports that the patient has no known medical conditions. Initial evaluation reveals severe hypotension, and she is given intravenous norepinephrine. Which of the following drugs antagonizes both the vascular and cardiac actions of the given medication?

A. Carvedilol*

B. Esmolol

C. Atenolol

D. Metaproterenol

E. Prazosin

29. A 46-year-old woman comes to the emergency department complaining of light-headedness and confusion. She has no chronic medical conditions and takes no medications. An electrocardiogram shows third-degree atrioventricular block. She is started on intravenous isoproterenol. The reflex change in heart rate in response to this medication would likely be enhanced by which of the following drugs?

A. Pirenzepine

B. Esmolol

C. Hexamethonium

D. Phenylephrine

E. Dobutamine*

30. A 46-year-old woman visits her podiatrist to have several bunions removed from her right foot. She chooses conscious sedation rather than general anesthesia for this procedure. She is given IV midazolam to supplement the local anesthetics that are injected into her foot. Midway through the surgery, she suddenly becomes agitated and combative and exhibits involuntary movements. The anesthesiologist determines that she is having a paradoxical reaction to the midazolam and immediately administers

A. protamine

B. glucagon

C. naloxone

D. nitrite

E. flumazenil*

31. A 48-year-old smoker with deep venous thrombosis is given heparin. Heparin achieves its anticoagulant activity by binding to which of the following substances?

A. Alpha2 antiplasmin

B. Alpha2 macroglobulin

C. Factor X

D. Factor VIII

E. Factor IX

F. Antithrombin III*

G. Prothrombin

32. A 48-year-old type 2 diabetic patient on daily extendedrelease glipizide presents with complaints of polyuria and polydipsia. Laboratory evaluation reveals a blood glucose of 192 mg/dL. She states that her diabetes had been well controlled and that she had been symptomfree for the past 8 years. Recently, however, she began taking medication for hypertension. Which of the following antihypertensive drugs is she most likely taking?

A. Diltiazem

B. Enalapril

C. Terazosin

D. Methyldopa

E. Hydrochlorothiazide*

33. A 48-year-old vagrant with a history of alcoholism ingests a bottle of antifreeze and presents to the emergency department obtunded but with intact vision. Which of the following is the most appropriate pharmacotherapy?

A. Amyl nitrite

B. Atropine

C. Naloxone

D. Glucagon

E. Ethanol*

F. Oxygen

G. Pyridoxine

H. Sodium bicarbonate

34. A 48-year-old woman is being treated for breast carcinoma. Over the past few days, she has been complaining of dysuria and frequency. Laboratory examination reveals the presence of microscopic hematuria. The next day the patient develops gross hematuria. Which of the following drugs could be used to treat the side effect from the antineoplastic medication taken by this patient?

A. Mesna*

B. Mitomycin

C. Cyclophosphamide

D. Tamoxifen

E. Vincristine

35. A 49-year-old alcoholic businessman complains of 2 days of severe worsening pain with redness and swelling of his first metatarsophalangeal joint. He has no history of injury or trauma. He is afebrile with no constitutional symptoms. Which of the following drugs is the most appropriate pharmacotherapy?

A. Allopurinol

B. Pravastatin

C. Colestipol

D. Indomethacin*

E. Probenecid

36. A 5-year-old boy with no previous medical history is brought to the emergency department by his mother because he accidentally ingested a large dose of rat poison. He is conscious but appears quite agitated. On physical examination, his blood pressure is 110/70 mm Hg and pulse is 90/min. Laboratory results are significant for an elevated prothrombin time (PT) but a normal partial prothrombin time (PTT). Which of the following is the most appropriate pharmacotherapy?

A. Atropine

B. Vitamin K*

C. N-acetylcysteine

D. Protamine

E. Flumazenil

37. A 50-year-old man with moderate familial hypertriglyceridemia is treated with gemfibrozil. Which of the following is the primary mechanism of action of this drug?

A. Binding of bile acids in the intestine

B. Stimulation of lipoprotein lipase*

C. Inhibition of HMG-CoA reductase

D. Stimulation of HDL production

E. Inhibition of hepatic VLDL secretion

38. A 50-year-old woman with urinary incontinence is diagnosed with detrusor instability on urodynamic evaluation. Stimulation of which of the following results in contraction of this muscle?

A. Muscarinic receptors*

B. Beta-adrenergic receptors

C. Alpha-adrenergic receptors

D. Nicotinic receptors

39. A 52-year-old man with peptic ulcer disease has been on drug therapy for 3 months and has noticed changes in his bowel habits, increasing headaches, dizziness, skin rashes, loss of libido, and gynecomastia. Which of the following drugs is most likely responsible for these side effects?

A. Sucralfate

B. Famotidine

C. Cimetidine*

D. Omeprazole

E. Metronidazole

40. A 53-year-old man comes to the physician because of tingling in his feet and recurrent blurry vision. He is an obese man who rarely exercises and who eats an excessive amount of fatty, high-caloric food. He takes no medications. A fasting plasma glucose level is 169 mg/dL on this visit and 172 mg/dL on a subsequent visit. Which of the following drugs used in the treatment of his condition has no effect on the secretion of insulin?

A. Acetohexamide

B. Metformin*

C. Glyburide

D. Chlorpropamide

E. Tolbutamide

41. A 55-year-old man with hypertension and a past medical history of myocardial infarction is prescribed atenolol. This medication will lower his blood pressure by

A. blocking catecholamine release

B. blocking the conversion of angiotensin I to angiotensin II

C. increasing renin release from the kidney

D. decreasing intravascular volume

E. decreasing cardiac output*

42. A 55-year-old woman is receiving chemotherapy for non-Hodgkin lymphoma. Several days after a treatment, she notices blood in her urine. Which of the following antineoplastic drugs is most likely responsible for this side effect?

A. Bleomycin

B. Cisplatin

C. Vincristine

D. Doxorubicin

E. Plicamycin

F. Cyclophosphamide*

43. A 57-year-old smoker with a long history of chronic obstructive lung disease presents to the physician with a blood pressure of 150/95 mm Hg. Which of the following antihypertensives is contraindicated in this patient?

A. Acebutolol

B. Nadolol*

C. Esmolol

D. Metoprolol

E. Atenolol

44. A 58-year-old man presents with difficulty initiating movements and a resting tremor. On physical examination, his face appears expressionless and he has a slow shuffling gait. He is started on selegiline. Which of the following is the mechanism of action of this drug?

A. It is a precursor of dopamine

B. It inhibits dopa decarboxylase

C. It is an agonist at dopamine receptors

D. It inhibits degradation of dopamine by MAO type B*

E. It blocks catechol-O-methyltransferase (COMT)

45. A 58-year-old man with a history of atrial fibrillation is prescribed warfarin to prevent clot and embolism formation. His prothrombin time (PT) is regularly monitored. Administration of which of the following drugs would result in an increase in his PT and require readjustment of his warfarin dosage?

A. Ketoconazole*

B. Carbamazepine

C. Amobarbital

D. Phenytoin

E. Rifampin

46. A 58-year-old woman arrives at her physician's office complaining of moderate anxiety. Which of the following drugs will help relieve her anxiety, with a minimum of unwanted sedative side effects?

A. Zolpidem

B. Chlordiazepoxide

C. Lorazepam

D. Trazodone

E. Buspirone*

47. A 59-year-old man with a history of myocardial infarction presents to his physician complaining of shortness of breath. On examination, his heart rate is 110/min and respiratory rate is 22/min. He has rales in both lung fields, a normal sinus rhythm with an S3 gallop, and 2+ pitting ankle edema. A chest x-ray film reveals cardiomegaly, and his ejection fraction on echocardiogram is calculated at 37%. Which of the following medications would alleviate this patient's symptoms by significantly reducing both the preload and afterload on the heart without affecting its inotropic state?

A. Digoxin

B. Diltiazem

C. Propranolol

D. Furosemide

E. Enalapril*

48. A 60-year-old hypertensive woman presents to her physician with visual changes. Transient ischemic attack is ruled out. She is then referred to an ophthalmologist, who prescribes a medication that subsequently causes drowsiness and tingling in her arms. Laboratory evaluation reveals hyperchloremic metabolic acidosis. Which of the following drugs was most likely prescribed?

A. Furosemide

B. Demeclocycline

C. Ethacrynic acid

D. Acetazolamide*

E. Hydrochlorothiazide

F. Spironolactone

49. A 62-year-old white man complains of left thigh and leg pain and swelling that are exacerbated by walking. One week earlier, the patient underwent cardiac catheterization. The patient is currently vacationing and has spent the past 28 hours in a car. Which of the following drugs, which might be prescribed in this instance, works by inhibiting the enzyme epoxide reductase?

A. Heparin

B. Dipyridamole

C. Warfarin*

D. Streptokinase

E. Tissue-type plasminogen activator (tPA)

F. Acetylsalicylic acid

50. A 62-year-old woman is being prepared for cardiac bypass surgery. Before she is intubated, she is given a skeletal muscle relaxant that causes her to have muscle fasciculations prior to muscle relaxation. Which of the following drugs was most likely administered?

A. Vecuronium

B. Pancuronium

C. Atracurium

D. Rocuronium

E. Succinylcholine*

51. A 64-year-old man presents to his family physician complaining of difficulty urinating and “dribbling” at the end of urination. The physician diagnoses benign prostatic hyperplasia. Which of the following drugs would be most appropriate for treating this man’s condition?

A. Tamoxifen

B. Leuprolide

C. Mifepristone

D. Pergolide

E. Finasteride*

52. A 64-year-old man presents to his physician with aching, burning pain after meals. He had been selfmedicating with antacids for several months but has found this to be increasingly ineffective. His physician decides to take him off the antacids and instead places him on a combination of ranitidine and sucralfate. Why is this combination a bad idea?

A. Ranitidine inhibits the action of sucralfate*

B. Ranitidine increases the toxicity of sucralfate

C. Sucralfate and ranitidine coprecipitate

D. Sucralfate increases the toxicity of ranitidine

E. Sucralfate inhibits the action of ranitidine

53. A 65-year-old man is in the severe burn unit of a clinic for third-degree burns over 80% of his body following a house fire. He now suffers a multidrug-resistant gram-positive infection acquired in the hospital. He is given a prescription for imipenem. Which of the following has to be coadministered with imipenem in this patient?

A. Trimethoprim

B. Clavulanic acid

C. Para-aminobenzoic acid (PABA)

D. Sulbactam

E. Cilastatin*

54. A 65-year-old patient has experienced several transient ischemic attacks over the past few months. Because his general health is poor, he is not considered an appropriate candidate for carotid endarterectomy. The decision is made to treat him medically. Which of the following agents would be most appropriate for his therapy?

A. Heparin

B. Coumadin

C. Dipyridamole

D. Aspirin*

E. Sulfinpyrazone

55. A 67-year-old man presents to the emergency department with shaking chills and a temperature of 38.0 C (101 F). Laboratory examination reveals a hematocrit of 23%, and urine tests are positive for blood. The patient states that he is taking only one medication for his “irregular heartbeat.” Which of the following drugs most likely caused the appearance of these signs and symptoms in this patient?

A. Digoxin

B. Quinidine*

C. Propranolol

D. Hydralazine

E. Verapamil

56. A 68-year-old man presents with complaints of chronic fatigue, exertional and nocturnal dyspnea, orthopnea, and a chronic nonproductive cough. On examination, respiratory wheezing and rhonchi are noted. Cardiac examination reveals a diminished first heart sound and an S3 gallop. The patient indicates that he was recently treated for hypertension and vasospastic angina. On the basis of his initial presentation, which of the following agents was most likely prescribed?

A. Amlodipine

B. Verapamil*

C. Furosemide

D. Hydralazine

E. Captopril

57. A 70-year-old man complains of chronic heartburn. It is painful for him to bend over, and he sleeps on a wedge-shaped pillow to try to reduce the burning sensation. Which of the following agents would be the most efficacious in reducing his symptoms?

A. Bisacodyl

B. Omeprazole*

C. Magnesium hydroxide

D. Cimetidine

E. Promethazine

58. A 72-year-old man with prostate cancer is treated with leuprolide. Which of the following is the mechanism of action of this drug?

A. It inhibits 5α-reductase

B. It is a synthetic analog of GnRH*

C. It is a competitive inhibitor of LH

D. It is a competitive antagonist at androgen receptors

E. It is a testosterone agonist

59. A 74-year-old man has not been able to pass urine today, but had been able to do so normally the previous 2 days. Physical examination is remarkable for a blood pressure of 175/90 mm Hg. Laboratory examination reveals a serum creatinine of 4.5 mg/dL and a blood urea nitrogen of 115 mg/dL. Urinalysis reveals a specific gravity of 1.01 mg/dL and an occasional white blood cell per high-powered field. Which of the following could be used to ameliorate the patient's symptoms?

A. Benazepril

B. Hyoscyamine

C. Furosemide

D. Doxazosin*

E. Phenazopyridine

60. A 74-year-old woman with multiple myeloma is being treated with high doses of doxorubicin (Adriamycin). She has also received cyclophosphamide and prednisone recently. During an examination, the physician should check the patient for which of the following?

A. Abdominal tenderness

B. Pulmonary rales*

C. Limitation of movement

D. Papilledema

E. Bladder distention

61. A 75-year-old pharmacologist comes to the emergency department because of chest pain and shortness of breath. She has a history of hypertension. She says that she takes an aspirin daily and a diuretic that “acts at the distal tubule of the nephron.” She cannot remember the name of the diuretic. Considering her description, which of the following is the most likely diuretic?

A. Ethacrynic acid

B. Furosemide

C. Spironolactone

D. Mannitol

E. Hydrochlorothiazide*

62. A continuous IV infusion of lidocaine is given to a 70 kg patient with cardiac arrhythmias. The pharmacokinetic parameters for lidocaine are as follows: clearance (CL) = 9 mL/min/kg, volume of distribution (Vd) = 70 L, half-life = 2 hours. How long will it take for drug levels to reach 87.5% of steady state?

A. 1.75 hours

B. 3.5 hours

C. 5.5 hours

D. 6.0 hours*

E. 8.0 hours

63. A former drug abuser visits his physician to ask for pain medication for a legitimate back pain. The physician takes the history of drug abuse into account. Which of the following medications has the greatest potential for abuse?

A. Meperidine*

B. Dextromethorphan

C. Loperamide

D. Codeine

E. Nalbuphine

F. Pentazocine

G. Propoxyphene

64. A healthy 46-year-old man comes to the emergency department because of chest pain and shortness of breath for the past 2 hours. He has no prior medical history and takes no medications. Evaluation reveals elevated cardiac enzymes and troponin and new Q waves on an electrocardiogram. Tissue plasminogen activator (tPA) is administered. Which of the following is the advantage of this agent over streptokinase for fibrinolytic therapy?

A. It can be used in the setting of acute myocardial infarction

B. It is not likely to produce an allergic reaction*

C. It is less expensive

D. It cannot cause hemorrhage

E. It results in the activation of plasminogen

65. A man is taking phenelzine for atypical depression. He goes to a party and consumes a few bottles of beer and some aged cheese and crackers. Later that evening, he develops a headache so severe he needs to go to the hospital. He is found to have a blood pressure of 210/100 mm Hg. The emergency room physician explains to him that because he is taking this medication, he should not have consumed those particular foods at the party because they contain which of the following types of substances?

A. A direct-acting sympathomimetic

B. An indirect-acting sympathomimetic*

C. A muscarinic agonist

D. A neuronal uptake inhibitor

E. A false transmitter

66. A medical professor is cleaning out her files and comes across an old case report about a 56-year-old man with hypertension who had been treated with reserpine for many years. On a routine blood pressure check, the patient was found to have an increase in blood pressure. When told about this finding, the patient reported that since

his last visit he had taken an additional medication, and he admitted to recreational drug use. Which of the following medications was most likely responsible for his increase in blood pressure?

A. Phenylephrine*

B. Bethanechol

C. Cocaine

D. Guanethidine

E. Amphetamine

67. A neurophysiologist is studying the consequences of diminished brain perfusion in an experimental animal. The carotid artery is occluded, and brain function is monitored by positron emission tomography. Which of the following drugs would be most effective in reversing the change in heart rate produced by the experimental occlusion?

A. Phenoxybenzamine

B. Propranolol*

C. Neostigmine

D. Metaproterenol

E. Atropine

68. A new antibiotic is being tested in clinical trials. The following pharmacokinetic parameters have previously been determined: Clearance = 100 mL/min Volume of distribution (Vd) = 50 L Half-life = 3 hours Assuming that the drug is being administered intravenously, what loading dose (LD) should be given to a patient to quickly obtain a plasma concentration of 10 mg/L?

A. 5 mg

B. 25 mg

C. 100 mg

D. 500 mg*

E. 1000 mg

69. A new antibiotic is being tested in phase III clinical trials. The following pharmacokinetic parameters had been determined in earlier trials: Vd (volume of

distribution) = 60 L CL (clearance) = 30 mL/min F (bioavailability) = 50% t1/2 (half-life) = 23 hours This antibiotic is administered orally, and the target plasma concentration (Cp) is 2 mg/L. What is the appropriate loading dose for this drug?

A. 15 mg

B. 30 mg

C. 60 mg

D. 120 mg

E. 240 mg*

70. A patient admitted to the emergency department with chest pain is diagnosed with myocardial infarction. On discharge, the patient is prescribed aspirin but develops an allergic hypersensitivity reaction. Ticlopidine is prescribed instead as a maintenance anticoagulant. Which of the following is the mechanism of action of this drug?

A. It binds to the active site of cyclo-oxygenase via acetylation

B. It prevents fibrinogen from binding to platelets*

C. It hinders the production of thromboxane A2

D. It blocks the binding of plasmin to fibrin

E. It stimulates platelet adenylyl cyclase

71. A patient has been given an anticoagulant. Which of the following findings suggests that he was given warfarin, not heparin?

A. The anticoagulant’s effects are reversed by administering protamine sulfate

B. Anticoagulation was achieved within 1 hour of drug administration

C. Anticoagulation is being monitored by measuring the prothrombin time (PT)*

D. The anticoagulant was administered intravenously

72. A patient is administered a skeletal muscle relaxant prior to abdominal surgery. The patient soon begins to exhibit hypotension, bronchospasm, and excessive bronchial and salivary secretions. Which of the following skeletal muscle relaxants did this patient most likely receive?

A. Tubocurarine*

B. Baclofen

C. Dantrolene

D. Atracurium

E. Vecuronium

73. A patient was administered mecamylamine during surgery. This drug will most likely cause which of the following responses?

A. Accommodation

B. Tachycardia*

C. Peristalsis

D. Pupillary constriction

E. Hypertension

74. A patient who is being treated for a hypertensive crisis that occurred 2 hours ago is medicated with IV nitroprusside. Which of the following is the expected action of this drug?

A. Constriction of arterioles alone

B. Constriction of both arterioles and venules

C. Constriction of venules alone

D. Dilatation of arterioles alone

E. Dilatation of arterioles and venules*

75. A patient with congestive heart failure, hypertension, diabetes, and glaucoma receives multiple drugs in his disease management. During a routine urine and blood sample analysis, the following electrolyte disturbances are noted: decreased sodium, increased chloride, decreased potassium in the blood, increased calcium, phosphate and bicarbonate in the urine. Which of the following drugs most likely caused these electrolyte disturbances?

A. Hydrochlorothiazide

B. Captopril

C. Furosemide

D. Acetazolamide*

E. Spironolactone

76. A patient with essential hypertension is starting diuretic therapy. He has a history of calcium oxalate renal stones. Which of the following diuretics would be most appropriate for this patient?

A. Acetazolamide

B. Hydrochlorothiazide*

C. Furosemide

D. Spironolactone

E. Triamterene

77. A patient with Graves disease is scheduled for a subtotal thyroidectomy. Propylthiouracil is used to control her hyperthyroidism until surgery. The enzyme inhibited by this drug is involved in which of the following reactions?

A. Proteolysis of iodinated thyroglobulin into monoiodotyrosine (MIT) and diiodotyrosine (DIT)

B. Iodide uptake at the base of the follicular cell

C. Iodination of thyroglobulin in the colloid

D. Conversion of iodide to iodine at the apex of the follicular cell*

E. Reuptake of iodinated thyroglobulin from the follicular lumen

78. A patient with severe systemic lupus erythematosus is receiving long-term glucocorticoid therapy. She should consequently receive supplemental therapy with which of the following?

A. Iron

B. Carotene

C. Folate

D. Calcium*

E. Vitamin B12

79. A pharmacology professor is teaching his class about the actions of different drugs on vessels. A certain drug produces vasodilation by increasing cGMP in the smooth-muscle cells of arterioles. Which of the following drugs has this mechanism of action?

A. Phentolamine

B. Isoproterenol

C. Metaproterenol

D. Nifedipine

E. Bethanechol*

F. Phenylephrine

80. A pharmacy fellow is trying to determine the plasma concentration of an experimental antiarrhythmic agent (Drug X) at steady-state. A continuous IV infusion of the agent began 6 hours earlier at a rate of 3 mg/min. Drug X has a half-life of 3 hours, a volume of distribution of 120 L, and a clearance of 0.6 L/min. If the rate of infusion remains constant, what will the plasma concentration be at steady-state?

A. 0.005 mg/L

B. 0.4 mg/L

C. 2 mg/L

D. 5 mg/L*

E. 40 mg/L

F. 200 mg/L

81. A worried mother complains to her pediatrician that both she and her 6-year-old son's teacher have noticed that the child has become inattentive. She states that her son frequently stops what he is doing and "stares blankly into space" before resuming his activities. Electroencephalography reveals a 3/second spike and slow wave pattern of discharges. Which of the following agents would most effectively treat this child's disorder?

A. Carbamazepine

B. Diazepam

C. Methylphenidate

D. Ethosuximide*

E. Phenytoin

82. A young white man presents with febrile illness and productive cough with green sputum hemoptysis. A chest x-ray reveals patchy opacification of both lung fields.

This patient's history is significant for cystic fibrosis. Which of the following drug combinations match the treatment for his likely condition?

A. Amoxicillin plus ampicillin

B. Ticarcillin plus aminoglycosides*

C. Amoxicillin plus clavulanic acid

D. Amoxicillin plus aminoglycosides

E. Vancomycin and aminoglycosides

83. An 82-year-old woman presents to her physician complaining of difficulty sleeping and problems coping throughout the day since the recent death of her husband. She requests a medication that will help her through this time of her life. Her physician prescribes oxazepam. The most likely rationale behind prescribing this drug is that oxazepam

A. does not require phase I metabolism*

B. does not have first pass metabolism

C. does not deplete liver glutathione

D. does not require phase II metabolism

E. induces cytochrome P450

84. An airplane pilot working for a major commercial airline suffers from hay fever. Which of the following drugs would be most suitable for the pilot during working hours?

A. Fexofenadine*

B. Diphenhydramine

C. Chlorpheniramine

D. Meclizine

E. Pyrilamine

85. An elderly man presents with complaints of ringing in his ears, blurred vision, and upset stomach. He is taking multiple medications. His wife states that he has had a few episodes of confused, delirious behavior over the past few weeks. Which of the following agents might be responsible for this man's symptoms?

A. Allopurinol

B. Quinidine*

C. Niacin

D. Hydralazine

E. Spironolactone

86. Genetic analysis of a female infant with a broad, enlarged neck demonstrates an XO karyotype. When the child reaches puberty, hormone replacement therapy should be started with which of the following agents?

A. Estrogen only

B. Progestin only

C. Insulin

D. Estrogen and progestin*

E. Thyroid hormone

87. If phenylephrine and tropicamide were instilled as eye drops together in the same eye, what would be the most likely resulting effect?

A. Mydriasis and cycloplegia*

B. Miosis and cycloplegia

C. Miosis with no effect on accommodation

D. No change in pupil size or in accommodation

E. No change in pupil size but cycloplegia

88. On a routine annual examination, a previously healthy 59-year- old woman is found to have high blood pressure. Her high blood pressure is confirmed on three subsequent visits. She tries to control it with diet and exercise, but 1 year later it is still elevated and so she is given a prescription for a diuretic. She returns for a followup visit, and laboratory studies show an elevation of her potassium levels. She was most likely prescribed which of the following diuretics?

A. Acetazolamide

B. Triamterene*

C. Hydrochlorothiazide

D. Metolazone

E. Furosemide

89. Several hospitals are participating in a study to test the efficacy of a newly developed drug prior to its release. This drug is designed to lower cholesterol levels. Of the 1000 patients who are involved in this study, half receive the drug and half receive a placebo. Neither the physicians in charge of the study nor the patients are permitted to know what the patients have received. Which of the following steps in the drug development process does this scenario most closely describe?

A. Investigational New Drug (IND) Application

B. New Drug Application (NDA)

C. Phase I

D. Phase II

E. Phase III*

F. Phase IV

90. The pharmacokinetic properties of a new drug are being studied in normal volunteers during phase I clinical trials. The volume of distribution and clearance determined in the first subject are 80 L and 4 L/hr, respectively. The half-life of the drug in this subject is approximately

A. 0.03 hours

B. 222 hours

C. 78 hours

D. 139 hours

E. 14 hours*

LIST OF DRUGS RECOMMENDED FOR USQE, Stage 1 ("Krok-1")

Drugs affecting afferent nerves
Lidocaine
Ultracaine
Procaine

Drugs affecting cholinergic transmission
Atropine sulfate
Neostigmine (Proserin)
Pilocarpine
Suxamethonium (Dithylinum)
Tubocurarine

Drugs affecting adrenergic transmission
Adrenaline
Propranolol (Anaprilinum)
Metoprolol
Salbutamol
Phenylephrine (Mezatonum)
Xylometazoline

General anesthetics. Hypnotic drugs. Antiepileptic agents.
Sodium valproate
Nitrazepam
Levodopa
Ketamin
Propofol
Phenobarbital

Narcotic and non-narcotic analgesics
Morphine
Trimeperidine (Promedol)
Naloxone
Acetylsalicylic acid
Diclofenac
Paracetamol
Celecoxib
Phenthanyl

Psychotropic agents
Chlorpromazine (Aminazine)
Droperidol
Diazepam
Coffeinum-natrii benzoas
Amitryptiline

Drugs affecting the respiratory system
Ambroxol
Acetylcysteine
Glaucine

Cardiotonic drugs
Digoxin
Digitoxin
Corglycone
Strophanthin
Dobutamine

Antianginal drugs
Nitroglycerine
Amiodarone
Sodium nitroprusside

Antihypertensive drugs. Antilipidemic agents.
Lisinopril
Enalapril
Magnesium sulfate
Atorvastatin
Amlodipine
Losartan

Drugs affecting the gastrointestinal tract
Famotodine
Ranitidine
Bisacodyl
Omeprazole
Loperamide

Drugs affecting kidneys and myometrium

Hydrochlorothiazide
Furosemide
Oxytocin
Spironolactone

Drugs affecting blood

Cyanocobalamine
Heparin
Warfarin
Vicasolum
Calcium chloride

Vitamins

Retinol acetate
Pyridoxine
Ascorbinic acid

Hormones

L-thyroxine
Insulin
Glibenclamide
Prednisolone

Enzymes and their inhibitors

Pancreatin
Contrycal

Antiallergic drugs. Immunotropic agents.

Diphenhydramine (Dimedrol)
Interferon
Methyluracil
Loratadine

Antiseptics and disinfectants

Iodide solution
Chlorhexidine
Hydrogen peroxide

Antidotes

Unithiol
Ethanol

Antibacterial drugs. Antifungal agents.

Benzylpenicillin
Doxycycline
Ciprofloxacin
Fluconazole
Lincomicin

Antituberculous and antiviral drugs

Isoniazid
Rifampicin
Acyclovir

Antiprotozoal and anthelmintic drugs

Chroroquine (Chingamin)
Metronidazole
Mebendazole

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