

## SUBMODULE CONTROLE № 1 GENERAL PHARMACOLOGY (STEP-1)

1. A patient with arterial hypertension was administered a non-prescription drug for symptomatic treatment of rhinitis. What pharmacological form should be recommended the patient in order to reduce as much as possible the likelihood of development of undesirable systemic vasoconstriction?
  - a) Drops
  - b) Tablets
  - c) Aerosol
  - d) \*Ointment
  - e) Gel
  
2. A 56-year-old patient suffering from essential hypertension was prescribed an inhibitor of angiotensin converting enzyme (ACE) and a potassium-sparing diuretic. Such combination is:
  - a) Reasonable because it potentiates hypotensive effect of ACE inhibitor
  - b) Unreasonable because it increases risk of orthostatic collapse development
  - c) Reasonable because it decreases risk of hyperkalemia development
  - d) Unreasonable because it reduces hypotensive effect of ACE inhibitor
  - e) \*Unreasonable because it increases risk of hyperkalemia development
  
3. Continuous taking of drug results in reduction of its efficiency. This phenomenon called:
  - a)\* Habituation
  - b) Cumulation
  - c) Sensibilization
  - d) Dependence
  - e) Tachyphylaxis
  
4. One of the major indicator of drug elimination from the human body is:
  - a). Bioavailability
  - b). Volume of distribution
  - c). Bioequivalence
  - d). \*Effective halfbreak
  - e). Highest concentration in blood
  
5. A 6-year-old child with pneumonia was prescribed an antibiotic. After the treatment the child became deaf. Which antibiotic group might cause this complication?
  - a)\* Aminoglycosides
  - b) Cephalosporins
  - c) Macrolides
  - d) Natural penicillin
  - e) Semisynthetic penicillin
  
6. A patient has been taking isosorbide for stenocardia prevention for quite a long time. Now he notes a significant decrease in the effect of the drug. What is this phenomenon called?
  - A. Allergy
  - B. Physical dependence
  - C. \*Tolerance
  - D. Cumulation
  - E. Potentiation
  
7. Drug addicts upon termination of action a drug have heavy psychological, neurological and somatic violations. What is the name of this symptom complex?

- A\* Abstinence syndrome
- B Tachyphylaxis
- C Sensitization
- D Cumulation
- E Tolerance

8. What does period of semiejection ( $T_{1/2}$ ) mean?

- A\* Interval of time for which the concentration of preparation in plasma of blood diminishes on 50%
- B Volume of plasma of blood, which rids of preparation for time unit
- C Time of complete leadingout of preparation is from an organism
- D Speed of leadingout of preparation is through buds
- E Betweenness by speed of leadingout of preparation and by his concentration in plasma of blood

9. From annotation on magnesium sulfate you know that this preparation is prescribed as a anticonvulsant drug. What rout of administration of injection should be chosen for getting of this pharmacological effect?

- A\* intramuscular injection
- B sublingual
- C peroral
- D rectal
- E inhalation

10. For rapid relief of symptoms of stenocardia a patient takes nitroglycerine in capsules. What is the most rational rout administration for this preparation?

- A\* Sublingual
- B Oral
- C Rectal
- D Inhalation
- E Hypodermic

11. A doctor prescribed bisacodyl to a patient with a chronic constipation. In 3 weeks of treatment a patient paid a regard to diminishing purgative effect. With what side effect is it related?

- A\* Adaptation (tolerance)
- B Predilection
- C Sensitizing
- D Cumulation
- E Dysbacteriosis

12. At poisoning by phosphoorganic compound an atropine sulfate was used. What phenomenon is underlaid in antidotal action?

- A\* Antagonism
- B Synergism
- C Adaptation
- D Chemical incompatibility
- E Potentiation

13. Answer to the doctor question, what is the name of the phenomenon, when at the prolonged using of preparation its efficiency goes down?

- A\* Adaptation (tolerance)
- B Allergy
- C Cumulation

- D Addiction
- E Tachyphylaxis

14. Consult a doctor-interner concerning the meaning of term "elimination":

- A\* Biotransformation + excretion
- B Biotransformation
- C Excretion
- D Accumulation
- E Absorption + distribution

15. Drug addicts after rapid stoppage of drug usage have severe psychological, neurological and somatic disorders. What is the name of this complex of symptoms?

- A\* Abstinence
- B Idiosyncrasy
- C Sensitizing
- D Cumulation
- E Tolerance

16. Which properties of drug determine the ability of drug to penetrate through the blood brain barrier?

- A\* lipids solubility
- B water solubility
- C strong protein bond
- D ionization state
- E long term of half- rearing

17. Pregnant woman used big doses of retinol during 1<sup>st</sup> trimester of pregnancy and got hypervitaminosis. This drug may induce abnormalities of fetus. Name this side effect.

- A\* Teratogenic action
- B Cumulation
- C Dysbacteriosis
- D Addiction
- E Cancerogenic action

18. Imagine yourself as a pharmacist in interhospital pharmacy. Try to explain nurse what does tolerance mean?

- A\* Impairment of therapeutic efficacy after repetitive drug administration
- B Slowing-down metabolism of medicine in a liver
- C Increasing of therapeutic efficacy of drug
- D Slowing down of drug elimination
- E High absorption from gastrointestinal tract

19. Give the answer to nurse: what is the effective half-life medicine period?

- A\* It is time when medicine concentration in plasma gets down to 50%
- B It is time when medicine can reach bloodstream
- C It is time when medicine can spread all over organism
- D It is time when medicine can get maximum concentration in plasma
- E It is time when all dose of medicine can eliminated from organism

20. The amount of drug comes to the systemic bloodstream from the site of administration is determined as:

- A\* bioavailability

- B period half- adsorption
- C effective half-life
- D volume of distribution
- E period half - elimination

21. A patient with uncommon reaction to a medicine was delivered to an intensive care department. What is the name for sensivity enhancement and distorted reaction to medications caused by hereditary enzyme defects?

- a)\* idiosyncrasy
- b) drug habituation
- c) drug dependence
- d) cumulation
- e) summation

22. At maternity department a child with rudimentary handy was born. What is the name for action of drugs which provokes fetus's birth defects?

- a)\*teratogenic
- b) allergic
- c) cancerigenic
- d) localize
- e) resorptive

23. To contagion isolation ward a patient who had scarlatina was delivered. The doctor prescribed the medicine in dose which exceeds a medium therapeutic one in 2-3 times. What is the name for such a dose?

- a)\*loading dose
- b) course dose
- c) toxic dose
- d) mortal dose
- e) once a day dose

24. To narcological department a patient was delivered. His diagnosis was morphine dependence. The doctor noted decreasing of morphine pharmacological activity. What is the name for the phenomenon when the effectiveness of drug reduces after repeated introduction?

- a) \* get used to drug (tolerance)
- b) material cumulation
- c) functional cumulation
- d) antagonism
- e) summation

25. Technician addressed pharmacist: What pharmacokinetic parameter characterizes the time needed for absorption of half injected dose from injected point to general circulanion?

- a)\* half – absorption period
- b) half – elimination peroid
- c) constant association
- d) functional cumulation
- e) half – excretion period

26. To obtain a necessary effect a patient was prescribed paracetamol with dimedrol. What is the name for this drug interaction?

- a)\* potentiation
- b) summation

- c) symphysis
- d) antagonism
- e) antidote

27. Explain to a patient why old people should take medicine in reduced doses.

- a)\*because of slowing-down of drug metabolism
- b) because of acceleration of drug metabolism
- c) because of acceleration of drug elimination
- d) because of acceleration of drug distribution
- e) because of acceleration of drug absorption

28. Remind you colleague (pharmacist) what is the name for the phenomenon when one medicine reduces action of another one?

- a)\* antagonism
- b) drug habituation
- c) sensitization
- d) potentiation
- e) tachyphylaxis

29. What reasonable route of administration for sodium caffeine benzoate should one choose to treat migraine? Select from the listed below.

- a)\* peroral
- b) intra-arterial
- c) inhalation
- d) transdermal
- e) rectal

30. After a long-term intake of isosorbide to prevent anginal attack a patient noticed significant decrease of its action. What is the name for this phenomenon?

- a)\* tolerance
- b) cumulation
- c) physical dependence
- d) allergy
- e) potentiation

31. When a certain drug reduces the effect of another drug, such phenomenon is called:

- A. \*Antagonism
- B. Habituation
- C. Potentiation
- D. Sensibilization
- E. Tachyphylaxis

32. The ability of drugs to accumulate in the patient's body is called:

- A. \*Cumulation
- B. Synergism
- C. Allergy
- D. Antagonism
- E. Habituation

33. A patient with moderately severe pneumonia has been administered ceftriaxone 1 time per day. The drug should be taken once a day due to the following properties:

- A. \*Slow excretion

- B. Cumulative ability
- C. Poor absorption from the injection site
- D. Wide range of action
- E. Presence of bactericidal action

### **GENERAL PHARMACOLOGY**

1. What kinds of pharmacotherapy do you know?
2. What effects may occur due to repetitive drug administration?
3. What kinds of enteral routes of administration are there?
4. What does the average therapeutic dose and minimal toxic dose mean?
5. What therapeutic index (ratio) is?
6. What drug is?
7. What is the local, resorbtive and reflex action of drugs?
8. What effects may occur due to combined drug administration?
9. What kinds of parenteral routes of administration are there?
10. What does the ED<sub>50</sub> and LD<sub>50</sub> mean?
11. Give the definition of etiotropic therapy
12. Give the definition of pathogenetic therapy
13. Give the definition of symptomatic therapy
14. Give the definition of substitutive therapy
15. Give the definition of medicinal form
16. Give the definition of pharmacodynamics
17. Name all steps of pharmacokinetics of drugs
18. What kinds of barriers can drugs pass through?
19. Mechanism of absorption of medicines
20. Name the negative effects of drugs
21. What is the difference between habituation and addiction?
22. What is an abstinence?
23. What is a tachyphylaxis?
24. When does withdrawal syndrome develop?
25. What types of drug's mechanisms do you know?

### **PRESCRIPTION WRITING (5 prescription in every ticket)**