

CLINICAL PHARMACOLOGY OF DRUGS USED IN GASTROINTESTINAL TRACT DISORDERS

A. Actuality

Currently, a large number of drugs are used in the treatment of digestive tract disorders. At the same time, digestive tract illnesses can influence their kinetics by altering the absorption process, with pharmacokinetic and pharmacodynamic consequences. The clinical consequences in such situations are difficult to predict, depending on the physicochemical properties of the medications, the treatment applied, the condition of the illness and the patient's state. They determine necessity to know the pharmacological properties of the remedies used in the digestive tract disorders and the hepatobiliary system.

A. Training aim

Applying pharmacokinetic and pharmacodynamic principles to the individualization and optimization of medication used in digestive tract and hepatobiliary system diseases.

C. Teaching objectives

The students should be able to:

- a) characterize drugs used in digestive and hepatobiliary system disorders following pharmacokinetic and pharmacodynamic features ;
- b) prescribe the drug from this group depending on the disease, the pathological condition and the age specifics of the patient;
- c) assess the clinical efficacy of the drugs;
- d) prognosis of adverse reactions according to the administration regimen;
- e) apply methods of prophylaxis and correction of adverse reactions;
- f) prognosis the interactions of remedies used in digestive tract disorders and hepatobiliary system disorders;
- g) make a personal form (P-drugs) of the medicines used in these diseases;

D. Knowledge from previously studied disciplines and related subjects

Medico-biological disciplines: Macro- and microscopic structure of digestive tract organs and hepatobiliary system. Functions and principles of neuro-humoral regulation. The function's peculiarities of the digestive tract according to age.

Clinical disciplines. Etiology, pathogenesis and clinical manifestations of diseases and pathological conditions of the digestive tract and the hepatobiliary system. Investigation methods for assessing the functional status of digestive tract organs and establishing the correct diagnosis.

Pharmacology. Classification, mechanisms of action, indications and contraindications, undesirable effects of medicinal remedies used in digestive tract disorders and hepatobiliary system.

E. Questions for self-training

I. Clinical pharmacological characteristic of the drug groups used in digestive tract disorders

1. Classification of the drugs with influence on the digestive tract.

2. Clinical pharmacology of remedies used in gastric and intestinal gland hyposecretion: classification, peculiarities of the mechanism of action, indications and principles of drugs use.
3. Substitution drugs in pancreatic exocrine hyposecretion: classification, peculiarities of the mechanism of action and effects, indications and principles of use, adverse reactions, pharmacokinetics.
4. Classification of drugs used in gastric hypersecretion and treatment of ulcer disease. Clinical pharmacology of M- cholinoblockers as anti-ulcer drugs: classification, peculiarities of the mechanism of action and anti-ulcer effect, indications and principles of use, adverse reactions, pharmacokinetics, drug interactions.
5. H₂-histaminoblockers used in ulcer disease: classification, features of the mechanism of action and anti-ulcer effect, indications and principles of use, adverse reactions, pharmacokinetics, drug interactions.
6. Proton pump inhibitors used in ulcer disease: classification, features of the mechanism of action and anti-ulcer effect, indications and principles of use, adverse reactions, pharmacokinetics, drug interactions.
7. Clinical pharmacology of somatostatin analogues as anti-ulcer: the features of the mechanism of action and the anti-ulcer effect, indications and principles of use, adverse reactions, pharmacokinetics.
8. Clinical pharmacology of prostaglandin analogues as anti-ulcer: the features of the mechanism of action and anti-ulcer effect, indications and principles of use, adverse reactions, pharmacokinetics.
9. Antacids used in gastric hypersecretion: classification according to solubility, peculiarities of action and anti-ulcer effect, indications and principles of use, adverse reactions, drug interactions.
10. Gastroprotectors used in ulcer disease: classification, features of the mechanism of action and anti-ulcer effect, indications and principles of use, adverse reactions, pharmacokinetics.
11. Clinical pharmacology of drugs used in pancreatic exocrine hyperfunction: peculiarities of mechanism of action and pharmacological effects, indications and principles of use, adverse reactions, pharmacokinetics.
12. Prokinetic drugs: classification, peculiarities of the mechanism of action and pharmacological effects, indications and principles of use, adverse reactions, pharmacokinetics, drug interactions.
13. Classification of laxative and purgative drugs. Volume and softener laxatives: features of the mechanism of action and laxative effect, indications and principles of use, adverse reactions, drug interactions.
14. Osmotic purgatives: features of the mechanism of action laxative and purgative effects, indications and principles of use, adverse reactions, drug interactions.
15. Clinical pharmacology of irritant purgatives: classification, peculiarities of the mechanism of action, indications and principles of use, adverse reactions.
16. Classification of antidiarrheal drugs. Peculiarities of antidiarrheal effect, indications and principles of use of astringent, mucilaginous and adsorbing drugs.
17. Clinical pharmacology of M-cholinoblockers and opioid analgesics as antidiarrheal: the peculiarities of action, indications and principles of use, drug interactions.
18. Synthetic antidiarrheal drugs: the peculiarities of action and antidiarrheal effect, indications and principles of use.

19. Drugs used in meteorism and flatulence: classification, peculiarities of action and anti-flatulent effect, indications and principles for selection and use.
20. Classification of antiemetic drugs. The specificities of action and use of neuroleptics, H1-antihistamines, dopamine-blockers, serotonin blockers, M-cholinoblockers, benzodiazepines, glucocorticoids as antiemetic, side effects, drug interactions.
21. Clinical pharmacology of serotonin and cannabinoid antagonists as anti-vomiting: mechanism of action, indications and usage principles, adverse reactions, pharmacokinetics.
22. Clinical pharmacology of dopamine antagonists as antiemetic drugs: mechanism of action, indications and principles of use, adverse reactions, pharmacokinetics.
23. Classification of intestinal anti-inflammatories. Azo-compounds: mechanism and peculiarities of action, indications and principles of use, adverse reactions, pharmacokinetics.
24. Classification of hepatotropic drugs. Clinical pharmacology of hepatoprotective drugs: classification, mechanism of action, pharmacological effects, indications and principles of selection and use, adverse reactions.
25. Clinical pharmacology of hepatoprotectives of entomological origin: classification, mechanism of action, pharmacological effects, indications and principles of selection and use, adverse reactions.
26. Classification of the drugs that stimulate the secretion and excretion of bile. Choleric drugs: the peculiarities of the mechanism of action and pharmacological effects, indications and principles of use, adverse reactions.
27. Cholekinetic drugs: peculiarities of the mechanism of action and pharmacological effects, indications and principles of use, adverse reactions.
28. Cholelitholytic drugs: peculiarities of the mechanism of action and pharmacological effects, indications and principles of use, adverse reactions.
29. Spasmolytic drugs: classification, peculiarities of the mechanism of action and cholelitholytic effect, indications and principles of use, adverse reactions, drug interactions.
30. Classification of antiviral drugs used in viral hepatitis B and C: mechanism and peculiarities of action, indications and principles of use, adverse reactions, pharmacokinetics.
31. Features of using the drugs in cirrhosis: the mechanism and peculiarities of action, indications and principles of use, adverse reactions.
32. Features of using the drugs in digestive tract disorders in pregnant, pediatric and geriatric patients.

II. Clinical pharmacological selection and use of drugs in some pathological conditions and diseases:

Principles of drug selection and use in hyperacid gastritis;
 Principles of drug selection and use in gastric and duodenal ulcers;
 Principles of drug selection and use in acute pancreatitis;
 Principles of drug selection and use in chronic pancreatitis.

F. Individual work:

1. Brief characterization of the main drugs.

Vertically: International Nonproprietary Name (INN) of drug

Horizontally: synonyms, delivering forms, mode of administration, doses (therapeutic, maximal), mechanism of action, indications, contraindications, side effects.

Pantoprazole, esomeprazole, nizatidine, octreotide, misoprostol, lactuloze, dimeticone, budesonide, lipoic acid, ribaverine, creon 25, sodium docusate, sodium picosulfate, domperidone, salasosulfopiridazine, imuheptine, butilscolamine.

2. Exercises on medical prescription (see year III):

Pirenzepine, atropine, almagel, omeprazole, sucralfat, famotidine, pancreatin, panzinorm, bismut subcitrate, neostigmine, drotaverine, platifiline, baralgin, sulpirid, regesan, ondansetron, metochlopramide, aprotinin, bisacodil, loperamide, bactisubtil, magnezium sulfate, azatioprine, silimarine, esențiale, ademetonine, mesalazine, ursodezoxicholic acid, mebeverine.

3. Indicate drugs used in (for): esophageal reflux; hypoacid gastritis; irritable colon; hepatic steatosis; viral hepatitis B; liver cirrhosis; chronic pancreatitis with hypoacid gastritis; chronic pancreatitis with flatulence; chronic pancreatitis with cholecystitis; acute pancreatitis; hemorrhages from gastric and duodenal ulcer; prophylaxis of iatrogenic ulcers (NSAIDs, AIS, etc.); prophylaxis of ulcers in smokers; Zollinger-Elison syndrome; for neutralizing the gastric acidity; for protecting and accelerating gastric and duodenal mucosal scarring; gastric and intestinal hypomotility; postoperative intestinal atony with meteorism; flatulence and intestinal distention; intestinal colic; persistent functional constipation; constipation in patients with anal affections; constipation in patients requiring avoidance of defecation effort; gut preparation for radiological and ultrasound examination; postoperative and post-anesthetic vomiting; vomiting in actinic disease; drug-induced vomiting; vomiting of pregnancy; vomiting from motion sickness; acute non-infectious diarrhea; non-specific ulcerative colitis and Crohn's disease choleric; substitution in biliary fistula; drainage of the bile; performing the duodenal casing (blind survey); biliary colic; toxic and drug lesions of the liver; liver disorders in pregnant women; functional and congenital hyperbilirubinaemia; hepatic coma; hepatic encephalopathy; hypertonic biliary dyskinesia, hypotonic biliary dyskinesia.

4. Tests on clinical pharmacology (for faculty of medicine). Chisinau, 2014, p.29.

5. Clinical cases in clinical pharmacology. Chisinau, 2017, p.49.

6. Virtual situations.

7. Selection of Personal drugs (P- drugs) and Personal treatment (P- treatment) according to the criteria of efficacy, safety, acceptability and cost for inclusion in the personal form (P drugs).