

# CLINICAL PHARMACOLOGY OF VENOTROPE AND ANGIOPROTECORS, CEREBRAL AND PERIPHERAL VASODILATORS, ANTIMIGRAINE DRUGS

## A. Actuality

In the contemporary period, the number of patients with disorders of the cerebral circulation - ischemic and hemorrhagic stroke, chronic cerebral insufficiency, migraine, which causes the highest rate of invalidation among the apt population - is increasing.

It also increases the number of patients with peripheral ischemic disorders (Raynaud's syndrome, obliterative endarteritis, trophic ulcers) and those with different cardiovascular pathologies, which can be complicated by cerebral and peripheral disorders. These serious diseases require urgent, sometimes prolonged, pharmacotherapeutic interventions, which require careful study of drugs that contribute to the correction, primary and secondary prevention of cerebral and peripheral circulatory disorders.

## B. Purpose of training:

Acquiring the clinico-pharmacological principles of argumentation of the selection, prescription, dosage modalities and assessment of the efficiency of cerebral and peripheral vasodilators, venotropes and venoprotectors.

## C. Teaching purposes:

*The student must have the ability to:*

- a) choose the minimum complex of investigations, in order to assess the pharmacodynamic effect of cerebral and peripheral vasodilators, antimigraine drugs, venotropes and venoprotectors;
- b) analyze and evaluate the study results of the pharmacodynamics of cerebral, peripheral vasodilators and antimigraine drugs, venotropes and venoprotectors;
- c) predict the appearance of possible complications and adverse reactions of the drugs in these groups;
- d) predict the dependence of adverse reactions on the dosage regimen of the drugs and the functional state of the organs and systems;
- e) apply contemporary methods of pharmacological correction of the adverse reactions, caused by cerebral and peripheral vasodilators, antimigraine drugs, venotropes and venoprotectors;
- f) draw up the personal form (P-medicines) of cerebral anti-ischemic drugs, peripheral vasodilators and antimigraine drugs, venotropes and venoprotectors.

## D. Knowledge from the subjects studied previously and those of tangency

*Anatomy, physiology and pathological physiology.* Anatomy and particularities of the cerebral and peripheral vascular system. The role of different mediating systems in regulation of cerebral and peripheral circulation.

*Clinical disciplines.* The etiopathogenic and clinical features of the disorders of the cerebral and peripheral circulation. Classification of strokes, principles of treatment. Migraine, classification and pathogenetic features, treatment principles. The peculiarities of the medicamentous therapy of the disorders of the peripheral circulation.

**Pharmacology.** Classification, mechanism of action, indications, adverse reactions of cerebral anti-ischemic drugs and peripheral vasodilators, antimigraine drugs, venotropes and venoprotectors.

### **E. Questions for self-training:**

#### ***I. The clinico-pharmacological characteristic of the drugs used to modify the tone of the regional and peripheral vessels.***

1. Classification of cerebral anti-ischemic drugs.
2. The clinical pharmacology of cerebral vasodilators from the group of xanthine derivatives: the particularities of the mechanism of action and the anti-ischemic effect, the indications and principles of use, the adverse reactions and their prevention, the pharmacokinetic;
3. The clinical pharmacology of the alkaloids of Vinca minor: the particularities of the mechanism of action and the anti-ischemic effect, the indications and principles of use, the adverse reactions and their prevention, the pharmacokinetic;
4. Clinical pharmacology of calcium antagonists as cerebral anti-ischemic drugs: particularities of mechanism of action and anti-ischemic effect, indications and principles of use, adverse reactions and their prevention, pharmacokinetic;
5. Clinical pharmacology of alpha-adrenolytics as cerebral anti-ischemic drugs: features of mechanism of action and anti-ischemic effect, indications and principles of use, adverse reactions and their prevention, pharmacokinetic;
6. Groups of medications used in the treatment of cerebral infarction, the principles of selection and use.
7. Classification of anti-migraine drugs. Characteristics of the drugs used in the jugulation of migraine attacks: classification, particularities of the mechanism of action and utilization of serotonergic agonists, ergot alkaloids, neopioid analgesics, antivomitives, derivatives of isothiurea, methylxanthines.
8. Classification of medications used for migraine prophylaxis. Particularities of the mechanism of action and use of antiserotonergic medications, beta-adrenoblocks, derivatives of isothiurea and medications from different groups.
9. Classification of peripheral vasodilators. Particularities of the mechanism of action and use of peripheral vasodilators in peripheral vascular diseases.
10. Classification of venotropic (venoactive) medications. Clinico-pharmacological characteristic of venotonic and venoprotective medications: mechanism of action, particularities of pharmacological effects, indications and principles of use of bioflavonoids.
11. Clinical pharmacology of angioprotective medications: classification, particularities of mechanism of action and pharmacological effects, indications and principles of use.

#### ***II. Selection and clinical-pharmacological use of SM in some clinical conditions:***

- Principles of drug selection and use in chronic venous insufficiency and venous thrombosis.
- Principles of drug selection and use in ischemic stroke and transient stroke (ischemia).
- Principles of drug selection and use in peripheral circulation disorders.
- Principles of drug selection and use in migraine attacks.

### **F. Individual work:**

### **1. Summary characterization of the main medications.**

**Vertically.** Name of the medication (Romanian).

**Horizontally.** Synonyms, forms of delivery, way of administration, doses (therapeutic, maximum), indications, contraindications, adverse reactions.

Vinpocetine, pentoxifylline, cinnarizine, flunarizine, nimodipine, nicergoline, piracetam, sumatriptan, paracetamol, acetylsalicylic acid, ibuprofen, dexketoprofen, ergotamine, propranolol, metasergeide, sertraline, metoprolol, metoclopramide, ravimig, calcium dobesilate, diosmin + hesperidin (detralex), endothelon, tribenoside, polydocanol, cyticoline, zolmitriptan, piracetam + cinnarizine.

### **2. Medical prescription exercises.**

Vinpocetine, pentoxifylline, cinnarizine, flunarizine, nimodipine, nicergoline, piracetam, sumatriptan, paracetamol, acetylsalicylic acid, ibuprofen, dexketoprofen, ergotamine, propranolol, metasergeide, sertraline, metoprolol, metoclopramide, ravimig, calcium dobesilate, diosmin + hesperidin (detralex), endothelon, tribenoside, polydocanol, cyticoline, zolmitriptan, piracetam + cinnarizine.

### **3. Indicate the medications used in (for):**

obliterative endarteritis; Raynaud's disease; trophic ulcers of the lower limbs; acute cerebrovascular failure; chronic cerebrovascular insufficiency; migraine attacks; migraine prevention; chronic encephalopathy; acute thromboembolic stroke; rehabilitation after ischemic stroke; subarachnoid haemorrhage, chronic venous insufficiency, thrombophlebitis of the veins of the lower limbs.

**4. Tests (Farmacologia clinică (self-assessment tests). Chisinau, 2000 p. 116;**

**5. Клиническая Фармакология „ Тесты для самоподготовки ”, Кишинэу, 2014, стр. 39-51.**

**6. Clinical cases Ghid cazuri clinice. Chisinau, 2017, pp. 66-99;**

**7. Virtual situations "Îndrumar pentru lucrări de laborator la farmacologie". Chisinau, 2016, page 178.**

**8. Selection of antianginal, cerebral and peripheral vasodilators according to the criteria of efficacy, harmlessness, acceptability and cost, for inclusion in the personal form (P drugs).**