

PHARMACOKINETIC AND PHARMACODYNAMIC PRINCIPLES OF RATIONAL USING OF REMEDIES THAT INFLUENCE THE ORAL MUCOSA AND TOOTH PULP.

A. Actuality

Drugs that influence oral mucosa and tooth pulp differ each other not only through pharmacological groups but also through mechanisms of action, clinical effects, indications, adverse reactions and complications. They can be used for treatment and for prophylactic goals in different affections of the oral mucosa (infections, ulcerations, burns etc.). The stomatologist should distinguish strictly medical indications for these groups of drugs.

B. Training aim

To study the clinical-pharmacological principles of prescription, selection, dosing regimen of drugs that influence the oral mucosa and dental pulp and to estimate their medical indications, efficacy, side effects and complications.

Predicts and prevents complications and side effects of drugs in these groups.

C. Learning objectives

The students should be able to:

- a) know the pharmacokinetic and pharmacodynamic particularities of the medicinal remedies with influence on the mucosa of the oral cavity and the dental pulp;
- b) choose the minimum complex of necessary investigations, in order to assess the pharmacodynamic effect of the substances used;
- c) apply the principles of selection and dosage of preparations depending on disease, age and particularities of drugs;
- d) predict the occurrence of possible complications and adverse reactions of drug remedies, depending on the dosage and functional status of the organs and systems of the body;
- e) use methods of prevention and treatment of complications and adverse reactions from dental practice;
- f) select personal drug (P-drug).

D. Knowledge from other studied tangent subjects

Histology, morphology, pathophysiology. Anatomical and physiological properties of oral cavity and oral mucosa, teeth, mouth and salivary glands.

Clinical subjects. Diseases of the oral cavity and oral mucosa, teeth, mouth and salivary glands (stomatitis, gingivitis, pulpitis etc.). Aetiology, pathogenesis and clinical manifestations and treatment.

Pharmacology. Classification of drugs that influence the oral mucosa (protective, anti-inflammatory, anti-infective etc.), mechanism of actions, indications, contraindications and adverse reactions. Classification of pharmacotherapeutical complications in dentistry, their prevention and treatment. Adverse drug reaction on the oral mucosa, prevention and treatment.

E. Questions for self training:

1. Classification of drugs that influence oral mucosa and dental pulp according to the goal of utilization.
2. Classification of oral mucosal protective drugs. Astringent drugs: classification, mechanism of actions, indications, contraindications and adverse reactions.
3. Mucilaginous and adsorbents drugs, emollients: mechanism of actions, particularities of action, selection and use in dental practice.
4. Deodorant preparations, particularities of action of deodorants from different pharmacological groups (oxidants, Cationic detergents, thiosemicarbazones derivatives, aromatic essential oils).

5. Keratoplastic agents, mechanism of actions, particularities of action, selection.
6. Drugs for dehydration, cauterization, sclerosing, mechanism of action, particularities of action.
7. Drugs that influence salivary glands, particularities of action, selection and use in dental practice.
8. Drugs that influence tooth pulpa. **Biological method of treating pulpitis:** mechanism of actions, particularities of action, selection.
9. Mummifying agents: mechanism of actions, particularities of action, selection, prevention and treatment of adverse reactions.
10. Dentifrices (Curative and prophylactic toothpastes). Properties, selections and indications.
11. Drugs that influence inflammatory processes and decrease vascular permeability: mechanism of action, particularities of action, selection (enzymes, steroid anti-inflammatory drugs).
12. Classification of antiseptics. Oxidant agents: mechanism of action, particularities of use.
13. Halogens as antiseptics: particularities of action, selection and use.
14. Dyes as antiseptics: particularities of action, selection and use.
15. Phenols as antiseptics: particularities of action, selection and use.
16. Aldehydes as antiseptics: particularities of action, selection and use.
17. Acids and bases as antiseptics: particularities of action, selection and use.
18. Heavy metal preparations as antiseptics: particularities of action, selection and use.
19. Alcohols as antiseptics: particularities of action, selection and use.
20. Biguanides as antiseptics: particularities of action and use.
21. Nitrofurans as antiseptics: particularities of action and use.
22. Antifungal agents: classification, mechanism of action, comparative characteristic.
23. Antiviral agents: classification according clinical use, mechanism of action, comparative characteristic.

II. Selection and clinical-pharmacological use of medicinal preparations in some clinical conditions.

- Principles of selection and use of medicinal preparations in the treatment of pulpitis.
- Principles of selection and use of drugs in diseases of the apical periodontium.
- Principles of selection and use of drugs in oro-maxillo-facial diseases.
- Principles of selection and use of drugs in temporomandibular arthritis.
- Principles of selection and use of drugs in osteomyelitis of the jaws.
- Principles of selection and use of drugs in the treatment of oral combustion.

F. Brief characterization of the main preparations

Vertically. International Non-Proprietary Name (INN) of the drug

Horizontally. Synonyms, forms of delivery, way of intake, doses (therapeutic, maximum doses), mechanisms of action, prescriptions, contraindications, adverse reactions: salvine (sage extract), Saint John's wort tincture, tannic acid, regesan, *Calendula officinalis* L. tincture, Kalanchoe juice, propolis, pilocarpine, atropine, hydrogen peroxide, potassium permanganate, povidone-iodine, iodasept, nucine, hexetidine, policlesulen, silver nitrate, methylene blue, chlorhexidine, ethanol, chlorophyllipt (Eucalyptus extract), benzalkonium chloride, nitrofurazone, ambazone, nystatin, fluconazole, clotrimazole, ketoconazole, acyclovir, amantadine, idoxuridine, interferon alfa.

G. Exercises of medical prescription: tannic acid, regesan, *Calendula officinalis* L. tincture, propolis, pilocarpine, atropine, hydrogen peroxide, potassium permanganate, povidone-iodine, ethanol, nystatin.

Indicate medicines for: chronic inflammatory processes (stomatitis, gingivitis, pulpitis, periodontitis) of oral cavity, halitosis, chronic refractory ulcer in the mouth, oral candidiasis, hypersalivation, xerostomia, stimulation of oral mucosa regeneration, plaque disclosing

agents, dental pulp devitalization, acute arsenic poisoning, biological treatment of pulpitis, chemical burn of the oral mucosa (phenols, silver nitrate, arsenic paste, iodine preparations, sodium fluoride), wound processing, ulcerative stomatitis and gingivitis, allergic stomatitis and gingivitis, herpetic stomatitis, root canal treatment, chemical cauterization of granulation tissue.

F. Selection of drugs that influence the oral mucosa, pulp, and drugs used to treat stomatological pharmacotherapeutical complications, according to criteria of efficiency, innocuousness, acceptability and cost, in order to include them in personal form (P-medicines).