

**L. N. DEDOVA, L. V. SHEBEKO,
K. YU. EGOROVA**

DRUG TREATMENT OF PERIODONTAL DISEASES

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МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ РЕСПУБЛИКИ БЕЛАРУСЬ
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Л. Н. ДЕДОВА, Л. В. ШЕБЕКО, К. Ю. ЕГОРОВА

**ЛЕКАРСТВЕННОЕ ЛЕЧЕНИЕ
БОЛЕЗНЕЙ ПЕРИОДОНТА**

**DRUG TREATMENT
OF PERIODONTAL DISEASES**

Учебно-методическое пособие



Минск БГМУ 2024

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Дедова Людмила Николаевна
Шебеко Людмила Владимировна
Егорова Карина Юрьевна

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На английском языке

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MOTIVATIONAL CHARACTERISTICS OF THE TOPIC

Topic: Complex treatment of periodontal diseases: drug therapy.

Total class time: 275 min.

Periodontal diseases require a comprehensive approach to treatment, which includes drug therapy. To make a reasonable choice of medicines for periodontal diseases, knowledge of the principles and methods of using modern medicines, indications, contraindications, possible complications and side effects of drug therapy is necessary.

Lesson objectives:

1) didactic — to study the principles of determining indications for the use of drug therapy adequate to the severity of pathological changes in the periodontium and the general condition of the patient;

2) methodological — to master methodological approaches to the use of drug therapy in periodontology;

3) scientific — to develop the skill of applying scientifically based clinical principles for the selection and use of medicines in patients with periodontal diseases.

Tasks of the lesson. Students should:

1) learn to reasonably choose a drug for periodontal diseases in accordance with the principles of drug therapy;

2) master various methods of pharmacotherapy in periodontology (application, irrigation, instillation of a drug, application of a therapeutic bandage for periodontal diseases);

3) study the errors and complications of drug therapy, as well as ways to prevent them.

Requirements for the initial level of knowledge. For the successful assimilation of the topic, students should revise:

1) adverse factors causing periodontal diseases;

2) methods of diagnosing periodontal diseases;

3) prognosis and planning of treatment of periodontal diseases.

Control questions from the related disciplines:

1. Anatomical and histological structure of the periodontal.

2. Stages of inflammation development in periodontal tissues.

3. Microflora of the oral cavity, its role in physiology and pathology.

4. Pharmacological groups of drugs.

Control questions on the topic of the lesson:

1. Principles of drug therapy in periodontology. Scientifically based approaches to the choice of medicines in the treatment of patients with periodontal diseases.

2. The role of local drug therapy in treatment of periodontal diseases. Methods and means of drug therapy in periodontology.

3. Errors and complications in the use of medicines in periodontology.

Task for independent work. To assimilate the material of the lesson students must revise questions from the related disciplines and have a basic level of knowledge. In addition, students should be prepared to discuss articles published in the dental journals of the Republic of Belarus, including “Dentist” related to the topic of the lesson. Appropriate patients are examined during practical classes at the clinic. Students make a differential diagnosis, draw up a treatment plan, carry out treatment under the guidance of the teacher. All examination and treatment data should be recorded in the dental outpatient card and checked by the teacher.

PRINCIPLES OF DRUG THERAPY IN PERIODONTOLOGY

Many years of experience allowed us to develop the principles of drug therapy in periodontology, taking into account the state of the biological system of the periodontium (Fig. 1).

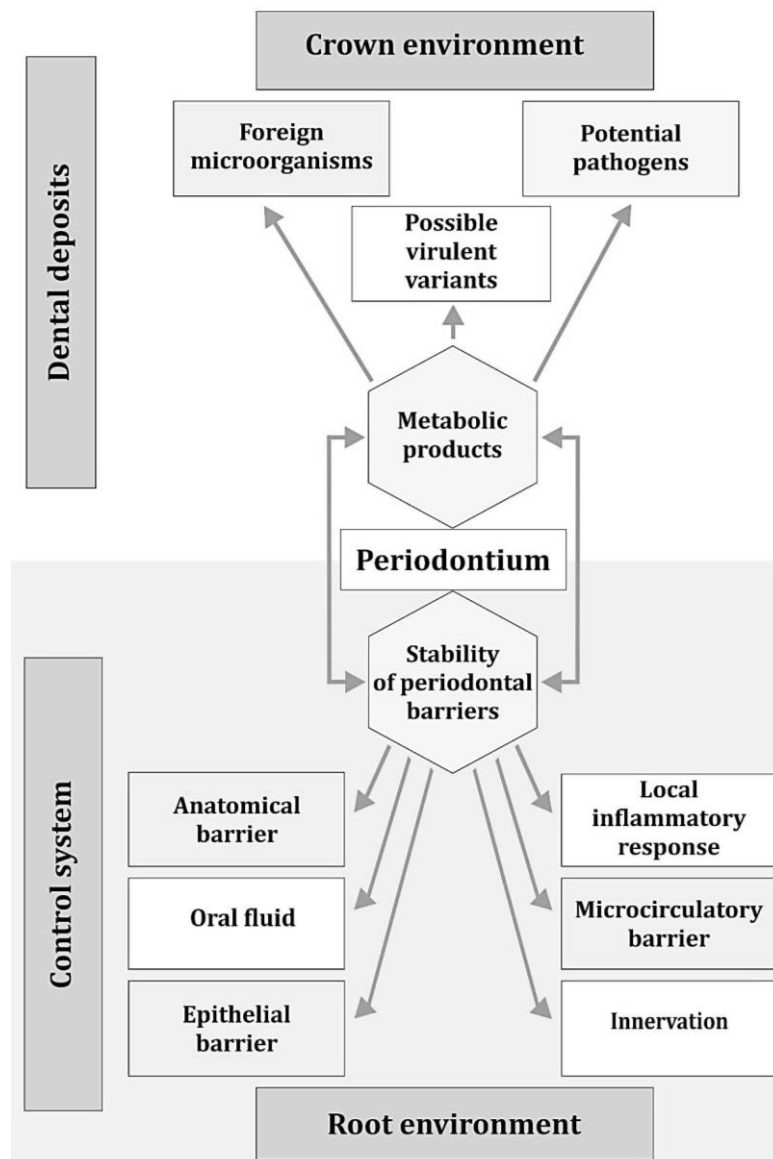


Fig. 1. Dynamic balance of the biological periodontal system (L. N. Dedova, 2002–2012)

Basic principles of drug therapy in periodontology:

1. Targeted impact on the state of the biological periodontal system and its tissue barriers.
2. Consistency in the choice of drugs.
3. Combined effect.
4. Ethics and deontology.

Principle 1. Targeted impact on the state of the biological periodontal system, as well as on each of its tissue barriers makes it possible to choose drugs for the combined treatment of patients with periodontal diseases.

The purpose of treatment includes the effectiveness and safety of drug therapy, in which the maximum therapeutic effect is achieved with the lowest risk of adverse reactions and complications.

The effect of drug therapy is determined by the individual characteristics of the patient and the pharmacological properties of the drug.

Individual characteristics of the patient. For each patient, the drug is selected taking into account:

- age;
- sex;
- heredity;
- harmful and everyday habits;
- the presence of allergies, previous treatment;
- concomitant diseases;
- psychoemotional state;
- social factors;
- dental status;
- the level of development of the pathological process in the periodontium.

Pharmacological properties of the drug. The effective prescription of drug therapy in each specific clinical situation depends on the presence of:

- indications and contraindications;
- the mechanism of action of the drug;
- drug interactions;
- possible side effects and complications;
- rational dose;
- frequency;
- duration and methods of application.

To assess the therapeutic effect, identify side effects and complications of drug therapy, control criteria are used.

Subjective feelings of the patient (for example, pain, itching) can be chosen as criteria, but preference is given to objective criteria, taking into account the dynamics of objective indicators characteristic of periodontal diseases (bleeding, swelling, suppuration, etc.).

An adequate choice of a drug determines the absence of toxic and allergic effects on the body, drug interactions or side effects, minimal effect on normal

(saprophytic) microflora, long-term preservation of activity and therapeutic effect even with high dilution of body fluids.

For example, for antimicrobials additional requirements are identified: selective toxicity against microbes in the absence of toxic effect on the body; bactericidal, not bacteriostatic effect; low potential for the emergence of resistance of microorganisms; synergism with respect to the mechanisms of antimicrobial protection of the human body.

At the same time, if there are indications for a targeted effect on one of the tissue barriers of the biological system, the possible negative effect of the drug on other components of the biological system should be taken into account.

So, for example, sclerosing therapy for hyperplastic gingivitis has a therapeutic effect on the microcirculatory barrier and local inflammation, but is a possible risk factor for epithelial barrier disorders.

Principle 2. Consistency in the choice of drugs taking into account the state of the biological system of the periodontium is based on the unity of periodontal tissues. At the same time, the dynamic balance of the two systems should be taken into account: the environment of the tooth root and the environment of its crown (Fig. 1).

The environment of the tooth crown. The administration of drug therapy aimed at the crown surrounding tissues is considered effective if, with a decrease in the aggression of the plaque microflora, there is no suppression of the saprophytic microflora and balance is maintained in the biological system of the periodontium.

The main factor causing pathological processes in periodontal tissues are plaque microorganisms. The pathogenicity of microorganisms increases with an increase in their number, as well as a change in the qualitative composition towards gram-negative bacteria, most of which are periodontopathogens (*Porphyromonas gingivalis*, *Prevotella intermedia*, *Prevotella denticola*, *Fusobacterium fusiformis*, *Wolinella recta*, *Treponema* spp., *Eikenella corrodens*, *Borrelia vincenti*, *Bacteroides melaninogenicus*, *Selenomonas* spp., etc.).

Antimicrobial agents are used to reduce the pathogenicity of microorganisms in periodontal tissues. Their representatives are:

- antiseptics;
- antiprotozoal drugs.

Effective antimicrobial agents must meet the following criteria:

- minimal presence of side effects;
- effectiveness against supra- and subgingival microflora;
- the ability to maintain therapeutic concentration for a long period of time.

Preference is given to drugs for topical use — antiseptics, since they cause resistance of bacterial strains more slowly than antibiotics and they are less likely to induce allergic reactions of the body.

The most common antiseptics used in periodontology are Chlorhexidine, Miramistin, Listerine, Chlorophyllipt.

Chlorhexidine bigluconate (HCG) is one of the most effective antiseptics in the treatment of periodontal diseases. HBG is effective against gram-positive and gram-negative bacteria, fungi and viruses.

Depending on the concentration, this antiseptic exhibits bacteriostatic or bactericidal action. Extremely rarely it causes allergic reactions, with prolonged use it can stain the teeth and oral mucosa brown, lead to desquamation of the epithelium, disruption of keratinization processes. In this regard, it is not recommended to use HBG for more than 2 weeks.

Miramistin has a bactericidal effect against gram-positive and gram-negative bacteria, viruses, yeast-like fungi, protozoa. Miramistin has an anti-inflammatory effect, enhances regeneration processes, stimulates local protective reactions. Of the possible side effects, there is a bitter taste and a burning sensation in the oral cavity.

Listerine belongs to phenol-containing oils, has a wide spectrum of antibacterial action. Currently it is used as part of a rinse aid as an additional means for home oral hygiene.

Chlorophyllipt is a herbal antibiotic that reduces the clinical indicators of gum inflammation.

In addition to the above-mentioned antiseptics, hydrogen peroxide of 3 and 1.5 % is also used in periodontology. The mechanism of its action is based on the release of oxygen, which creates unfavorable conditions for the vital activity of gram- negative anaerobes.

When prescribing antiseptics, it is necessary to take into account:

- concentration;
- frequency of application;
- duration of application;
- side effects;
- adaptation of microorganisms.

The antiprotozoal drug Metronidazole is widely used in periodontology, which actively acts against anaerobic protozoa and anaerobic bacteria. Metronidazole is a part of complex preparations, most frequently in combination with chlorhexidine (gel Metrogil Denta). Among possible side effects when using this remedy, there is a metallic taste in the mouth, allergic reactions when applied topically.

The environment of the tooth root includes a number of tissue barriers that resist the negative effect of plaque on periodontal tissues.

The administration of drug therapy, taking into account the level of involvement of each tissue barrier in the pathological process, allows achieving a long-term therapeutic effect, increasing the resistance of periodontal tissues to the action of plaque microorganisms.

Anatomical barrier. Therapeutic and preventive measures aimed at restoring the anatomical barrier are combined with the use of drugs that have an auxiliary function. For example, at the stages of orthodontic, orthopedic and reconstructive treatment, drugs to reduce plaque growth and antiseptics which were mentioned

earlier are prescribed. When carrying out reconstructive measures, local anesthetics, osteoplastic materials, correctors of bone metabolism, membranes for guided regeneration are used.

In order to stimulate the restoration of bone tissue and the replacement of bone defects after surgery, the use of osteoplastic materials of various origins and degrees of processing is recommended.

These include lyophilized, formalized, demineralized, deproteinized bone and cartilage preparations, as well as brief materials, blood preparations, collagen materials, autografts, bioplastics and tissue grafts.

A promising method of local correction of metabolic processes in the bone is the use of hydroxyapatite, which has a specific osteotropic effect.

Mucous barrier. Oral fluid covers the mucous membrane of the oral cavity, serves as a barrier to infection, surrounds the microflora and controls its growth. Accordingly, changes in the physico-chemical parameters of saliva affect the condition of periodontal tissues.

In case of impairment of the protective properties of the mucous barrier (including the state of saliva and gingival fluid), drugs are prescribed to normalize the quantitative and qualitative indicators of oral fluid.

So, for the treatment of xerostomia, medicines stimulating salivation, which include parasympathomimetic drugs (pilocarpine hydrochloride, cholinesterase inhibitors) are used. For the symptomatic treatment of hyposalivation, saliva substitutes are used — viscous products that are applied to the mucous membrane of the oral cavity. They are available in the form of sprays, gels, oils, mouthwash, lozenges or viscous liquids. Substitutes include water, artificial saliva (based on mucin and carboxymethylcellulose) and other substances (milk, vegetable oil).

In the treatment of hypersalivation, drugs with a cholinolytic effect that reduce the production of saliva (scopolamine, platyphylline, etc.) are used.

Epithelial barrier. Treatment of patients with periodontal diseases includes measures aimed at restoring and maintaining the integrity of the epithelial barrier of the biological periodontal system.

Regenerative methods of treatment of periodontal diseases include guided tissue regeneration — flap surgery, in which the cell membrane is placed between the flap and the root of the tooth (Fig. 2).

This prevents rapid germination of the epithelium along the root surface and ensures the formation of connective tissue attachment.

In some cases, guided tissue regeneration is combined with osteoplastic materials. There are 2 groups of membranes for guided tissue regeneration: resorbable and non-resorbable. The use of resorbable membranes excludes repeated operations to remove them. Nonresorbable membranes provide a stable condition during the time they are in the wound, but require repeated surgical intervention to extract them.

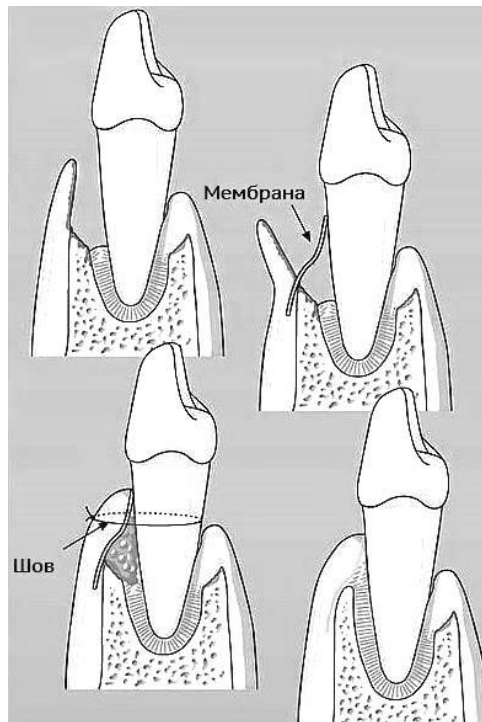


Fig. 2. Scheme of guided tissue regeneration

Local inflammation. The local inflammatory response in periodontal diseases has certain features. As a rule, patients with periodontal diseases are prescribed drug therapy if the inflammatory response is inadequate.

Drugs in periodontology are prescribed in accordance with the phase of inflammation (Table).

Drug therapy of periodontal diseases depending on the phase of inflammation

The phase of inflammation	Treatment		
	local		systemic
	reduction of general pathogenicity of microorganisms	differentiated effect on pathological links	
Alteration	Antiseptics Antiprotozoal drugs	Anti-inflammatory drugs: – steroidal – non-steroidal	According to indications (in case of impairment of the general state of the body)
Exudation	Antiseptics	Enzymes	Enzymes of systemic use
Proliferation	Antiseptics	Drugs that affect regeneration processes	Drugs that improve metabolic processes

In the pathogenesis of gingivitis and periodontitis, an important role belongs to the inflammatory process. It is a complex of microcirculatory, hematological and connective tissue reactions to damage. The trigger mechanism of inflammatory reactions is precisely damage to cells and microvessels.

As a result of the damage, some biologically active substances are released and activated, which largely determine the rate of development, intensity and

prevalence of the inflammatory process (arachidonic acid, prostaglandin PGE₂). Interleukins IL-1, IL-6 (cytokines) are included almost in each link of immunity and inflammation.

Steroidal and non-steroidal drugs are used as anti-inflammatory agents. When they are used, there is a decrease in the level of pro-inflammatory cytokines and the level of immunoglobulin A increases.

Of nonsteroidal anti-inflammatory drugs (NSAIDs), ointments have a significant effect on reducing the level of prostaglandins (10 % indomethacin, 5 % butadione). NSAIDs regulate homeostasis, normalize capillary permeability, microcirculation, inhibit the activity of enzymes and inflammatory mediators. Despite relatively high anti-inflammatory activity, these drugs should be used with caution in patients with a history of gastrointestinal diseases.

Steroid preparations (1 % hydrocortisone ointment, 0.5 % prednisolone ointment) are used more frequently in the acute phase of inflammation. They have anti-inflammatory, desensitizing, antiallergic, decongestant, antitoxic and immunosuppressive effects. However, long-term use of steroid drugs reduces the local immune protection of tissues.

According to modern literature, IL-1 β is an important pro-inflammatory cytokine and is involved in the development of periodontitis. Traditional treatments such as scaling and root planing, periodontal surgery and antibacterial therapy have a limited effect on IL-1 β . Blockade of these cytokines by receptor antagonists, antibodies, inhibitors, substances of herbal origin and anti-inflammatory agents is favorable for reducing IL-1 β . Additional studies are needed to ensure that IL-1 β blockade is used in the treatment of periodontal disease or as an additional treatment method in the future.

In order to influence the pathogenetic process, enzyme therapy is performed. As an example of systemic enzyme therapy, the drug Wobenzyme can be considered. It has a positive effect on the course of the inflammatory process; positively affects the indicators of immunological reactivity of the body; stimulates and regulates the level of functional activity of monocytes-macrophages; helps to reduce the level of pro-inflammatory cytokines and increase the production of anti-inflammatory cytokines; regulates the level of immunoglobulins and activates interferogenesis.

Under the influence of the enzymes of the drug the amount of circulating immune complexes and membrane deposits fixed in tissues decrease with their accelerated elimination (excretion).

For topical use, proteolytic enzymes are used — trypsin, chymotrypsin, chymopsin, terrilitin. Their use is limited due to the difficulty of obtaining and applying them in the clinic.

The means for the regeneration of damaged tissues are 10 % methyluracyl ointment, 5 % Actovegin, 5 % Solcoseryl, etc.

Solcoseryl and Actovegin contain deproteinized dialysate from blood of healthy dairy calves, increase the resistance of tissues to hypoxia, increase the energy resources of the cell, activate cellular metabolism by increasing

the transport and accumulation of glucose and oxygen, as well as strengthen intracellular utilization, accelerate ATP metabolism. They are used in the form of ointment and jelly applications to improve metabolic processes and accelerate tissue regeneration.

For the combined treatment of hyperplastic gingivitis sclerosing therapy is used: superficial and deep. However, it has been noted that its negative effect on the epithelial barrier is possible.

It is possible to use herbal remedies for the treatment of periodontal diseases, while phytopreparations are used as monopreparations or in combination with antiseptics. The question of the expediency of their use in the composition of rinses, as well as in the form of infusions for rinsing is being considered. The positive properties of phytopreparations are a longer and persistent therapeutic effect and restoration of tissue metabolism.

Microcirculatory barrier. Drug therapy is an additional tool among the methods of normalization of microcirculation in periodontal tissues. In modern periodontology, medications that affect the microcirculatory barrier are in most cases used in combination with physiotherapy. So, in order to improve microcirculation in periodontology, anticoagulants are used. When prescribing anticoagulants, the anamnestic data should be clarified for the presence of COVID-19 in order to avoid possible complications.

Heparin is a natural anticoagulant of a direct action, it reduces platelet aggregation, inhibits the activity of hyaluronidase, limits histamine activity, inactivates some components of the complement system, improves microcirculation, activates tissue metabolism, suppresses the exudative phase of inflammation, reduces tissue swelling. Gel (ointment) with heparin is used in the form of applications, gingival dressings. Side effect: with prolonged use it can contribute to the development of osteoporosis. Contraindications: it is not recommended for hemorrhagic diathesis, hemophilia, thrombocytopenia, ulcerative processes, disruption of the integrity of the mucous membrane.

Innervation. The periodontium contains nerves that provide pain, pressure and touch perception. In periodontology drugs that affect the innervation link include local anesthetics, as well as drugs for the treatment of dentin sensitivity.

For example, in order to influence the receptor apparatus of the pulpodentine complex, drug preparations and agents containing potassium salts are used (potassium ions penetrate the dentine tubules, persistently depolarize the membrane of sensory nerve fibers).

There is still no consensus on how to give anesthesia in patients with inflammatory periodontal diseases. One of the contraindications to local anesthesia is the presence of acute inflammation of periodontal tissues (acute ulcerative gingivitis, acute periodontitis, periodontal abscess).

Currently, the most commonly used application anesthesia is 10 % lidocaine aerosol, as well as infiltration anesthesia with 4 % articaine solution in a dilution of 1 : 200,000.

It is necessary to take into account the interaction of local anesthetic drugs with other preparations.

Potassium preparations increase the effect of local anesthetics.

Calcium antagonists enhance the depressing effect of local anesthetics on myocardial conductivity and contractility.

Beta-blockers slow down biotransformation and reduce the clearance of local anesthetics of the amide group, reducing hepatic blood flow and increasing the risk of systemic toxic effects.

Local anesthetics weaken the cardiotoxic effect of cardiac glycosides and enhance the depressive effect of general anesthetics and narcotic analgesics on breathing.

When combining drugs that depress the central nervous system with local anesthetics the effect of the drugs is mutually enhanced.

Principle 3. Combined effect. Drug therapy in periodontology is part of a combination of measures including professional hygiene, orthodontic, orthopedic, surgical, physiotherapy and other types of treatment of periodontal diseases.

The treatment plan for patients with periodontal diseases includes drug therapy in combination with other methods of treatment, as well as combinations of drugs from various pharmacological groups.

For example, the administration of antiseptics, enzymes, anti-inflammatory, regenerating drugs is combined with professional hygiene measures for ulcerative gingivitis.

The study and analysis of drug interactions makes it possible to prevent undesirable results of the combined use of drugs: excessive strengthening or weakening of the therapeutic effect; the manifestation of adverse reactions. If there are indications, it is advisable to use predictable drug interactions to achieve the desired therapeutic effect.

At the same time, for drug correction of systemic pathology affecting the tissue barriers of the biological system of periodontium consultations of an internist (cardiologist, endocrinologist, immunologist, hematologist, etc.) are planned in some cases. For example, with symptomatic periodontitis against the background of diabetes mellitus, correction of microcirculation, innervation, mucosal, epithelial barriers, as well as local inflammatory response is necessary. In this case the patient is recommended to consult an endocrinologist and a therapist to resolve the problem of the use of systemic drugs in combination with local drug therapy and other methods of treating periodontal diseases.

Drugs whose action is aimed at normalizing the state of tissue barriers of the biological periodontal system are prescribed in order to eliminate risk factors and the inflammatory process, regenerate periodontal tissue structures, and improve microcirculation and innervation, which creates conditions for the dynamic balance of the body's defense systems.

Principle 4. Ethics and deontology in drug therapy have certain features. Professional and ethical problems arise due to the dentist's lack of information about new drugs, their incorrect use, side effects and complications.

Prior to the prescription of diagnostic, therapeutic and preventive measures, including medications, a detailed medical history is taken and informed consent of the patient is obtained.

While prescribing drug therapy it is possible to resolve problems together with colleagues, exchanging positive experience, knowledge and skills, and providing professional assistance to young dentists.

Ethical and deontological aspects of drug therapy are closely related to the legal norms. Medical ethics and deontology contribute to the exclusion of professional errors leading to complications and severe consequences (incapacity, disability, death).

FORMS AND METHODS OF APPLYING DRUG THERAPY IN PERIODONTOLOGY

Drugs applied for local treatment of periodontal diseases are used in the form:

- of solutions;
- tinctures;
- decoctions;
- ointments;
- gels;
- napkins (films/special thin covers);
- pills.

A special role in the drug therapy of periodontal diseases is played by the depot-drugs able to accumulate high concentrations of drugs locally in periodontal tissues. One of such means is the PerioChip (Fig. 3).



Fig. 3. PerioChip

The PerioChip is a small orange-brown rectangular chip (rounded from one end) made to insert into periodontal pockets. Each chip weighs approximately 6.9 mg and contains 2.5 mg of chlorhexidine bigluconate in a biodegradable matrix of hydrolyzed gelatin (crosslinked with glutaraldehyde), glycerin and purified

water. The PerioChip releases chlorhexidine in vitro in two phases: approximately 40 % of chlorhexidine — during the first 24 hours, and the remaining chlorhexidine in almost a linear mode — during 7–10 days.

Bioresorbable polymers and polysaccharides can be used as a chip (drug carrier). They can be manufactured in the form of threads, napkins and diapers.

For local effects of drugs on the periodontal tissues dentists prescribe:

- rinsing;
- mouth wash;
- irrigation;
- applications;
- instillation (into the periodontal pocket);
- gingival bandages;
- physiotherapy (administered with the help of physical factors).

Adding vacuum darsonvalization to a combination of therapeutic and preventive measures has a positive effect on the treatment of pathological processes by means of increasing salivation, reducing saliva viscosity and improving microcirculation.

ERRORS AND COMPLICATIONS IN THE APPLICATION OF DRUGS IN PERIODONTOLOGY

Errors in the use of drugs in periodontology include:

- prescribing medicines without prior professional hygiene measures of the oral cavity;
- prescribing medicines without taking into account indications, contraindications, individual characteristics of the patient, signs of inflammation and other clinical manifestations;
- incorrect methods of application, inaccurate recommendations on the duration and frequency of drug use;
- use of inadequate drug concentrations. Complications in the use of drugs in periodontology:
 - allergic reactions (including anaphylactic shock);
 - lack of the expected therapeutic effect;
 - emergence of the resistant to antimicrobial therapy microflora;
 - soft tissue injury (chemical, thermal, mechanical);
 - undesirable drug interactions;
 - side effects.

Thus, drug therapy requires a thoughtful and attentive attitude. It is necessary to take a careful patient's case-history, including medications to exclude possible drug interactions associated with side effects. It is necessary to ensure not only the effectiveness, but also the safety of drug therapy in the dynamic balance of the biological periodontal system.

SELF-CONTROL OF TOPIC ASSIMILATION

TESTS

1. Principles of drug therapy include:

- a) targeted impact, consistency, combined effect;
- b) availability of drugs;
- c) drug administration only.

2. The principle of the targeted impact on the biological system of the periodontium allows the dentist:

- a) to include drug therapy in combined treatment;
- b) choose drugs;
- c) apply the drug depending on the nature of the disease.

3. The principle of the targeted impact takes into account:

- a) efficacy and safety of the drug;
- b) the form of the drug;
- c) the method of drug administration.

4. The targeted impact is achieved due to:

- a) the mode of drug administration;
- b) individual characteristics of the patient;
- c) pharmacological properties of the drug;
- d) the form of the drug.

5. The effectiveness of prescribing drug therapy depends on:

- a) the cost of the medication;
- b) the mechanism of the drug effect;
- c) medicinal raw materials applied to obtain the drug.

6. Consistency in the choice of the drug implies the following:

- a) the balance of the two systems: adjacent tissues of the crown and the root;
- b) belonging of the drug to a certain pharmacological group;
- c) pharmacokinetics of the drug.

7. The combined effect is achieved by:

- a) a combination of drugs from different pharmacological groups;
- b) interaction with other methods.

8. Ethical and deontological aspects of drug therapy include:

- a) information about the pharmacokinetics of the drug;
- b) possible methods of drug administration;
- c) information about the purposes of drug therapy.

9. Errors made while applying drugs in periodontology include:

- a) prescribing drugs without prior professional oral hygiene measures;
- b) prescribing drugs without taking into account indications, contraindications, individual characteristics of the patient, inflammation processes and other signs of clinical manifestations;

- c) improper use of methodology and incorrect recommendations on the duration and frequency of drug use;
- d) all of the above.

10. To obtain a differentiated effect on pathogenetic links in the treatment of periodontal diseases at the stage of exudation, the following groups of drugs are prescribed:

- a) antiseptics;
- b) antibiotics;
- c) drugs affecting the regeneration processes;
- d) NSAIDs.

11. For a differentiated effect on the pathogenetic elements at the stage of proliferation in the treatment of periodontal diseases, the following groups of drugs are prescribed:

- a) antiseptics;
- b) drugs affecting the regeneration processes;
- c) painkillers;
- d) enzymes.

12. To control inflammation in periodontal tissues the following agents are prescribed:

- a) NSAIDs;
- b) fluoride preparations;
- c) antifungal agents.

13. To stimulate regeneration processes in periodontal tissues the following drugs are prescribed:

- a) epithelizing drugs;
- b) corticosteroids;
- c) antibiotics.

14. To suppress the activity of pathogenic microflora in periodontal diseases the following drugs are prescribed:

- a) antiseptics;
- b) anticoagulants;
- c) epithelizing drugs.

15. Anesthetics for periodontal diseases are used in the following cases:

- a) for anesthesia;
- b) for suppression of pathogenic microflora;
- c) to stop the inflammation process development.

16. Steroid anti-inflammatory drugs for periodontal diseases are used:

- a) to stop the inflammation process development.
- b) to suppress pathogenic microflora;
- c) to prevent caries.

SITUATIONAL TASKS

Task 1. Patient M., 65 years old, complained of tooth mobility, difficulty eating. On examination: OHI-S = 2.4, severe inflammation of the gingival margin (GI = 2.8), presence of periodontal pockets, suppuration, mobility of teeth of the 1–2 degree.



List the groups of drugs for topical use at the preparatory stage of treatment, justify their choice, specify the methodology and give examples of drugs of each group.

Task 2. Patient G., 28 years old. In the case-history — lichen planus. Clinically, there are no manifestations of desquamative gingivitis, no changes in the alveolar bone on OPTG.

The diagnosis was “Exacerbation of chronic symptomatic gingivitis of moderate severity”.



List the groups of drugs for topical use at the preparatory stage of treatment, justify their choice, specify the methodology and give examples of drugs of each group.

Task 3. Patient N., 25 years old, was diagnosed with acute generalized ulcerative gingivitis of moderate severity.

List the groups of drugs for topical use, justify their choice, specify the methodology and give examples of drugs of each group.



Task 4. Patient B, 26 years old. Complains of pain when eating, bad breath, the pain appeared a week ago, associates it with a gum injury with a fish bone.

From the history of hygiene: motivated, but does not brush her teeth regularly, does not use additional hygiene products, rarely changes the brush.

Clinical picture: the skin is clean, the lymph nodes are not enlarged, painless. The bite is neutral, crowding of teeth in the frontal part of the lower jaw, overhanging edges of fillings in 26, 27 teeth, a significant amount of plaque and calculus, OHI-S = 2.4.

The gum is stagnantly hyperemic, the interdental papillae are swollen, enlarged in volume, their tops are rounded, bleed when probing. In the area of the 23–25 tooth, the gums are gray, the tops of the papillae are pitted, painful and bleed sharply when probing, GI = 2.6, epithelial attachment is not broken.



Make a diagnosis. List the groups of drugs for topical use, justify their choice, specify the methodology and give examples of drugs of each group.

Task 5. Patient S, 26 years old, complains of bleeding when brushing her teeth, which appeared six months ago, bad breath, dryness, a large amount of dental deposits.

From the history of hygiene: motivated, brushes her teeth regularly, does not use additional hygiene products.

From the case-history: works as a pastry chef, loves sweets. Her mother suffers from diabetes.

Clinical picture: the bite is neutral, the lymph nodes are not enlarged, oral mucosa is pale pink, the saliva is viscous, the gum is stagnant hyperemic,

interdental papillae are edematous, enlarged in volume, their tops are rounded, they bleed when probing. Epithelial attachment is not broken, the depth of probing is up to 3 mm, OHI-S = 2.2, GI = 1.6.

Make a preliminary diagnosis. Identify additional examination methods needed to make a definitive diagnosis. List the groups of drugs for topical use at the preparatory stage of treatment, justify their choice, specify the methodology and give examples of drugs of each group.



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