PHARMACOTHERAPY IN RESTORATIVE DENTISTRY

(second edition, revised and supplemented)

Learning guide for the 5th year
English-medium students (speciality Dentistry)

Міністерство охорони здоров'я України
Харківський національний медичний університет

PHARMACOTHERAPY IN RESTORATIVE DENTISTRY (second edition, revised and supplemented)

Learning guide for the 5th year English-medium students (speciality Dentistry)

ФАРМАКОЛОГІЯ В ТЕРАПЕВТИЧНІЙ СТОМАТОЛОГІЇ (видання друге, перероблене та доповнене)

Методичні вказівки для здобувачів освіти 5-го курсу за спеціальністю "Стоматологія"

Затверджено
Вченою радою ХНМУ.
Протокол № 17 від 25.12.20205.

Харків
ХНМУ
2025

Pharmacotherapy in restorative dentistry (second edition, revised and supplemented) : learning guide for the 5th year English-medium students (speciality Dentistry) / compil. O. V. Lyubchenko, O. V. Garmash, L. V. Voropaeva et all. Kharkiv : KhNMU, 2025. 32 p.

Comilersrs O. V. Lyubchenko
O. V. Garmash
L. V. Voropaeva
T. V. Tomilina
O. V. Andreeva
A. I. Kriuchko

Фармакологія в терапевтичній стоматології (видання друге, перероблене та доповнене) : метод. вказ. для здобувачів освіти 5-го курсу за спеціальністю "Стоматологія" / О. В. Любченко, О. В. Гармаш, Л. В. Воропаєва та ін. Харків : ХНМУ, 2025. 32 с.

Упорядники О.В. Любченко
О. В. Гармаш
Л. В. Воропаєва
Т. В. Томіліна
О.В. Андрєєва
А. І. Крючко

Treatment and prevention of caries

1. Fluoride, calcium, phosforus and microelements

Fluoride.

The main part of non-organic bone substances and hard tooth tissues is presented with calcium phosphates which are crystalline forms of apatites called hydroxyapatites.

Hydroxyl ions located in crystal lattice can be replaced with fluoride ions forming fluoroapatites. The latter ones are more resistant to acids. Enamel with high content of flourapatites effectively resists the action of cariogenic factors. Fluorine compounds help to maintain phosphorus and calcium in the organism, which improve remineralization processes; suppress the bacterial enzymes activity, growth of microorganisms in the oral cavity and decrease the rate of acid formation, which destroy the tooth. Fluoride compounds in the form of fluorides are ingested with water (mostly) and food. The amount of fluoride in food increases upon using Teflon cookware. At the same time, usage of aluminum cookware reduces the fluoride intake. Daily requirement of ionized fluoride for adults is 1.4–1.8 mg.

Considering all of these effects, fluoride is used for caries prevention. For these purposes organic and non-organic compounds of fluoride are used (NaF, SnF2, CaF2, NaHPO3F, CuF2, aminofluorides). The basic prevention measures consist in ingestion of fluoride compounds as tablets (sodium fluoride), fluorinated milk, salt or water. Fluoridation of salt is widely used as well; in this case the concentration of fluoride should be 250–300 mg/kg.

Local prevention consists in applying fluoride compounds in the form of solutions, pastes, gels, polishers, varnishes and cements directly on the surface of the tooth. Enamel and dentine permeability for ions and molecules provides the remineralization of hard tissues of the tooth. Those preparations are usually used as rinse, applications, electrophoresis etc.

Indications. Preventive measures for population in regions with low fluoride content in the water.

Contraindications. Content of fluoride in the water which exceeds 1 mg/l; hypothyroidism, renal failure, hepatic failure, acute gastric/duodenal ulcer; pregnancy, lactation.

Side effects. Dyspepsia, pain in the joints and lower limbs, increased fatigue, headache, allergic reactions; hypothyroidism, osteosclerosis, ectopic ossification can rarely occur.

Interactions with other drugs.

Ions of calcium, magnesium and aluminum create compounds with fluoride which are difficult to dissolve. It is recommended to adhere to two-hour interval between taking sodium fluoride and calcium/magnesium/aluminum salts (including antacid drugs).

Vitamins A and D facilitate the development of ectopic ossification.

Rp.: Sol. Natrii fluoridi 0.05 % 50 ml
D.S. For rinse of oral cavity.

Rp.: Sol. “Pro Fluoridi M” 0.2 % 100 ml
D.S. For rinse of oral cavity.

Rp.: Sol. “Elmex fluid” 50 ml
D.S. Apply 3-6 drops on the toothbrush and brush your teeth for 3 minutes.

Rp.: Sol. “Phthorlacum” 25 ml
D.S. Apply on the surface of the tooth for 3–5 minutes.

Fluoride gels are used for prevention of caries in children and teens that live in regions with low or normal content of fluoride in water; for the treatment of initial caries (spot stage); for prevention of teeth caries in children and teens that are in need of orthodontic treatment. Gel is applied on the surface of the tooth and in the interdental spaces after dental plaque was carefully removed. It is used 2–3 times in a year, or 3-4 times in a year if the caries activity is high.

Fluoride containing gel (ProFluoride Gel, VOCO) contains 0.3 % NaF. It is applied with the help of applicator or tooth brush for 5-10 minutes after careful toothbrushing. It is recommended to use it once a week. It can be applied by a doctor or by a patient himself.

Rp.: Sol. “ProFluorid Gel” 50 ml
D.S. Apply on the surface of the tooth for 5–10 minutes.

(Fluoridin Gel N5, VOCO) contains 5 % of NaF. Teeth are meant to be brushed and dried. Then apply a gel with the help of applicator and dry it. It is recommended to refrain from toothbrushing for 24 hours. The gel is used 2–3 times in a year, or 3–4 times if the caries activity is high

Rp.: Sol. “Fluoridin Gel N5” 20 ml
D.S. Apply on the surface of the tooth and dry.

(Fluocal, Septodont gel) contains 1 % of NaF, has bacteriostatic and remineralizing effects. Moreover, it changes the crystal structure of the enamel and increases its resistance to chemical action. The second effect if equally effective with exposed dentine and cement. Fluocal is intended for prevention of caries and for treatment of hyperesthesia of teeth.

Rp.: Sol. “Fluocal” 25ml
D.S. Apply on the surface of the tooth for 3 minutes, rinse the oral cavity.

Fluoride varnishes are used for prevention of caries and for the treatment of hyperesthesia of teeth as well as for treatment of the tooth after its preparation with the purpose of setting an artificial crown.

Rp.: Sol."Difluena lak" 18ml
D.S. Apply on pre-cleaned surface of the tooth. Dry until it becomes white.
Use for treatment of hypersensitivity of the teeth 3 times (on the 1^{st}, 3^{d}, 7^{th} day).

Rp.: Sol. “Bifluoridi" 12”
D.S. Apply on pre-cleaned (previously cleaned) surface of the tooth.

Rp.: Sol. “Fluoridi” 20 ml
D.S. Apply on pre-cleaned surface of the tooth.

Rp.: Sol. “Admira Protect” 10 ml
D.S. Apply on pre-cleaned surface of the tooth on 20 sec, after that polymerize.

(Multifluorid, DMG) – is a varnish for the treatment of hard tooth tissues; it consists 3 % of fluoride in the form of CaF2, NaF and aminofluoride. It is used for prevention of caries, for the treatment of the initial caries and hypersensitivity of cervical parts of dentine.

Calcium- and phosphorus-containing drugs

Hydroxyapatites mainly consists of hydroxyl ions of calcium and phosphorus. Calcium provides strength and hardness of bone tissues and tooth enamel. Calcium metabolism is closely connected with the metabolism of phosphorus and with mineral metabolism in the organism in general. Ergocalciferol, carotene and thyrocalcitonin are participating in the regulation of metabolism. The absorption of the calcium depends on complete protein diet. Calcium preparations normalize the function of cellular membranes, vascular permeability, activate MPS (Mononuclear phagocyte system) and phagocytic activity of leucocytes, and increase the general resistance of organism. There is about 20 g/kg of calcium in the organism. Daily requirement of calcium for an organism depends on the age and physiological condition (it increases during pregnancy etc.) and it makes approximately 10–20 mg/kg. The average daily requirements for teens and adults up to 24 years is 1200–1500 mg, 1000 mg for women of 25–50 years, 1200–1500 for pregnant and lactating women, 1500 for menopausal women (1200 mg for those who take substitutional hormone therapy); 1000 mg for men of 25–65 years, 1500 mg for men and women over 65 years. For prevention of caries calcium preparations are used orally and locally in the form of applications, rinse and electrophoresis.

Daily requirement of phosphorus is 1.5 g, absorption of calcium and phosphorus in the intestine depends on their ratio (1:2 is optimal) and is regulated by vitamin D and parathyroid hormone. Preparations of non-organic phosphates are less effective then organic ones.

In the case of combined local usage of preparations of calcium, phosphorus, fluoride it is reasonable to apply calcium and phosphorus preparations (5–6 procedures) before the fluoride preparations (5–6 procedures). It is recommended to combine local application of preparations along with their ingestion. The advantage is given to combined preparations which contain calcium salts and vitamin D.

The indication to apply preparations of fluoride, calcium and phosphorus is presence of single and multiple white and light-brown carious spots on the smooth surfaces of the teeth and fissures (natural deepening).

Rp.: Sol. Calcii gluconatis 10% 10ml
D.t.d. N 20 in ampull.
S. For application or electrophoresis of hard tissues of the tooth.

Rp.: Calcii glycerophosphatis 0.25
D.td. N 20 in tab.
S. 1 tablet 3 times a day before eating, for 1 month.

Rp.: Sol. Calcii glycerophosphatis 2.5 % – 100 ml
D.S. For electrophoresis of hard tissues of the tooth. Inject with the anode every day.
The course of treatment – 10 procedures.

In addition, there are calcium preparations which contain vitamin D and other microelements such as:

Vitrum Calcium (calcium carbonate and vit. D3)

Calcemin (citrate/ calcium carbonate, vit. D3, zinc, manganese, cuprum)

Calcium D3 Nycomed (calcium carbonate, vit. D3) and others.

For treatment of caries and multiple caries a complex organic phosphorus preparation (phytin) is used. Phytin stimulates hematopoesis, accelerates the growth and development of bone tissue, normalize the activity of nervous system.

Rp.: "Phytini" 0.25
D.t.d. N 40 in tab
S. 1 tablet 3 times a day before eating, for 1 month.

Remodentum is an effective drug for prevention of caries; it contains the complex of mineral substances, which is typical for intact enamel and tooth dentine.

Rp.: "Remodenti" 3.0
D.t.d. N 10.
S. Dissolve 1 powder in 100 ml of water. Use for mouth rinse.

2. Anesthetics in restorative dentistry

Application anesthesia of hard tooth tissues is low effective and can be used for anesthesia before dissection of the tooth; if there is a hyperesthesia of hard tissues of the tooth of various origins; or if non-carious lesions are presented.

Different groups of drugs are used for this purpose. Locally-anesthetizing substances (lidocain 10 %, dicain) violate the permeability of nervous cells membranes if the action potential arises, make it impossible for depolarization of nervous cell to occur be means of blocking of perception and conduction of nervous impulses. Those drugs are used for anesthetizing of hard tissues of the tooth before therapeutic manipulations.

Rp.: Dicaini 0.2
Phenoli puri 3.0
Chloroformii 2.0 ml
M.D.S. Liquid No.1 by E.E. Platonov.

Rp.: Dicaini 0.2
Spiritus aethylici 95 % – 2ml
Aq. destill. 6 ml
M.D.S. Liquid No. 2 by E.E. Platonov. Instructions: Mix liquids No. 1 and No. 2 and rub them with the help of cotton swab on the sensitive surfaces of the teeth.

Sodium fluoride acts like impregnating agents, reacts chemically with non-organic substances of hard tissues, providing remineralizing and analgesic effects (if hyperesthesia is present).

Rp.: Sol. Natrii fluoridi 0.2 % – 50 ml
D.S. For application and electrophoresis (2–3 min., 4–7 procedures in 1 course).

Strontium chloride, silver nitrate and zinc chloride provide closure of dentine canaliculi, violating the transmission of pain impulses (if hyperesthesia is present).

Rp.: Strontii chloridi 3.0
Glycerini 1.0
M.f.past.
D.S. The paste for treatment of dentine hypersensitivity. Rub it in pre-dried surface of the tooth once a day. 1 course of treatment includes 2–3 procedures.

Rp.: Sol. Argenti nitratis 30 % 30 ml
D.S. Lubricate the hypersensitivity spots.
Stains hard tissues of the tooth black. May cause burns of mucous membrane. It is recommended to use it with reducing agents (hydroquinone).

Rp.: Sol. Acidi ascorbinici 5 % – 5 ml
D.t.d. No. 5 in ampullis
D.S. For reducing of silver.

Rp.: Sol. Zinci chloridi 30 % – 20 ml
D.S. For rubbing in the hard tissues of the tooth.

Rp.: Sol.Kalii ferrocyanidi 10 % – 20 ml
D.S. For sedimentation of zinc chloride.

Alkaline pastes which possess dehydrating and week-analgesic effects.

Rp.: Natrii carbonatis 2.0
Natrii hydrocarbonatis 5.0
Glycerini q.s. ut f.past.
M.D.S. Rub in hard tissues for 1–2 minutes. With minor hyperesthesia course takes 4–5 days.

Rp.: Sol. Propolis spirituosae 4 % – 10 ml
D.S. For rubbing in hard tissues of the tooth.

Rp.: Gel. “Pierre Fabre” 10 ml
D.S. For treatment of sensitive surfaces after tooth brushing.

Rp.: Gel. “Ultra EVE”
D.S. for treatment of sensitive surfaces after tooth brushing.

Medicines for application anesthesia for patients with oral mucosa diseases

Bumecaine (Pyromecainum). Local anesthetic of amides group possesses anti-inflammatory effect (reduces the exudation). It’s implemented if the form of 0.5–2 % solution or 5 % ointment. In addition, 5 % ointment can be used with methyluracil.

Rp.: Sol.Pyromecaini 2 % – 10 ml
D.t.d. No. 10
S. For applicational anesthesia of an oral cavity mucosa.

Rp.: Aerosole “Dentisprey” 5 % – 50 ml
D.S. For analgesia of an oral cavity mucosa.

Rp.: Ung.Pyromecaini 5 % – 30.0
S. For applicational anesthesia of an oral cavity mucosa.

Dicain is a local anesthetic which belongs to a group of complex ethers. The representative of this anesthetic is Perylen ultra. It is used for anesthesia and antisepsis of oral mucosa diseases before the injection, for superficial anesthesia for removing of deciduous teeth; to suppress the vomiting reflex.

Rp.: Aerosole "Perylen ultra" 3.5 % – 45 ml
D.S. Splay for analgesia of an oral cavity mucosa.

Medicines for infiltrative anesthesia and regional nerve blockade. Local amide-based anesthetics are the most common to use for infiltrative anesthesia and local nerve block. Lidocaine is a short-acting drug; articaine and mepivacaine have medium duration of action; bupivacaine is a long-acting drug. Adding of vasoconstrictors (epinephrine and norepinephrine) increases the duration of drugs and lowers their toxicity. In modern dentistry local anesthetics in special cartridges are used more often.

Contraindications to use solutions with adrenergic agonists: unstable angina, cardiac dysrhythmia, arterial hypertension, decompensated heart failure, monoamine oxidase inhibitors and tricyclic antidepressants. In addition, solutions with adrenergic agonists should be used carefully if the patient has allergic anamnesis.

Artikain:
Rp.: Sol. Ultracaini 4 % – 1.7 ml
D.t.d. No. 5 in ampull.
S. For infiltrative anesthesia and regional nerve blockade.

Rp.: Sol.Alphacaini 4 % – 1.7 ml
D.t.d. No. 5 in ampull.
S. For infiltrative anesthesia and regional nerve blockade.

Rp.: Sol. Articaini 4 % – 1.7 ml
D.t.d. No. 5 in ampull.
S. For infiltrative anesthesia and regional nerve blockade.

Rp.: Sol.Ubistesini 4 % – 1.7 ml
D.t.d. No. 5 in ampull.
S. For infiltrative anesthesia and regional nerve blockade.

4 % solution with epinephrine 1: 200 000 D - S, D - S forte with epinephrine 1: 100.000. are used for infiltration anesthesia and regional nerve blockade.

Bupivacaine:
Rp.: Sol.Bupivacaini 0.25 % – 5 ml
D.t.d. No. 5 in ampull.
S. For infiltrative anesthesia and regional nerve blockade

Mepivacaine:
Rp.: Sol. Mepivastesini 3 % – 1.7 ml
D.t.d. N5 in ampull.
S. For infiltrative anesthesia and regional nerve blockade

Contraindications:
Mepivacaine should be indicated carefully for patients with renal failure.

Application of anesthetics for women during pregnancy, lactation and for children

Articaine is a drug that can be used during pregnancy and lactation. It is contraindicated for less than 4-year-old children.

Bupivacaine. Pregnant woman are more sensitive for toxic action of this anesthetic. It is contraindicated for less than 4-year-old children.

Lidocaine is usable in therapeutic doses during pregnancy. Safety of its use during lactation was not proved.

Mepivacaine can be used during pregnancy only under strict indications. Safety of its use during lactation was not proved.

It is contraindicated for less than 4-year-old children.

Side effects.

Weakness, dizziness, fainting (more often caused by psychological factors), arterial hypertension, allergic reactions (occurs more often after use of novocaine).

3. Therapeutic pastes

The action of odontotropic substances is based on stimulation of tooth pulp defensive mechanisms (odontoblasts functions) and, as a result, on the formation of secondary dentine. Calcium hydroxide-based drugs are used more often for these purposes.

In addition to odontotropic action calcium hydroxide also possesses anti-inflammatory effect (high alkaline reaction neutralizes acids in inflammation spot) and bactericidal action (high concentration of hydroxyl ions). At direct contact with pulp it causes superficial coagulation of proteins, which prevents the irritation of underlying tissues with therapeutic drugs (pH 11–12). Pastes which include iodoform, eugenol, etc. are also possessing odontotropic effects.

Odontotropic pastes are used for treatment of an acute deep caries, for treatment of pulpitis using biological method, for vital amputation of the pulp.

During the treatment of deep caries, the therapeutic liner is applied pointwise on the projection of the pulp's horn, or on the deepest part of the carious cavity (odontotropic pastes have poor adhesion to dentine so it's not reasonable to cover its entire bottom). Isolative liner and permanent filling are applying after the polymerization of the material. For treatment of pulpitis using biological method depending on the severity of the process odontotropic paste should be applied according to aforementioned technique, or the odontothropic paste covers with the bandage of artificial dentine which should be replaced with permanent filling in 3–4 weeks.

Rp: Iodoformii 10.0
Zinci oxydi 8.0
Glycerini q.s. ut f. past.
D.S. For treatment of deep caries and filling of root canals of temporary teeth.

Rp.: Eugenoli 30 ml
Zinci oxydi q.s.ut f.past.
D.S. For the treatment of an acute caries.

Rp.: Past. "Dycal" 12.0
D.S. Squeeze basic and catalytic pastes on the mixing pad in the ratio 1:1 in required quantity. Mix them; apply on the bottom of the carious cavity.

Rp.: Past. "Life" 12.0

D.S. Squeeze basic and catalytic pastes on the mixing pad in the ratio 1:1 in required quantity. Mix them; apply on the bottom of the carious cavity in the projection of pulp's horn.

Rp.: Past. "Calcipulpe" 2.5

D.S. Apply the required amount of the paste on the bottom of the carious cavity squeezing it out of the syringe with the applicator-needle. Dry the applied paste for 30 sec. Repeat the procedure if needed.

Rp.: "Biopulp" 10.0

D.S. Mix the powder with the distilled water on the glass pad till its consistency becomes thick. Apply obtained paste on the bottom of the carious cavity. Do not exert excessive pressure.

4. Drugs for treatment if pulpitis using the biological method

Pastes that are used for treatment pulp diseases using the biological method are called biological. Biological pastes content substances which possess anti-inflammatory and antimicrobial effects (antibiotics, sulfonamides, antihistamines, anesthetics, enzymes, steroidal and non-steroidal anti-inflammatory). They can also include calcium hydroxide which promotes the formation of secondary dentine when it contacts with the pulp or when it is close to it.

Biological pastes can be used for direct covering of the pulp or its stump when treating pulpitis using the biological method; when pulp chamber has been accidently opened; or for isolation of the pulp stump after the pulp amputation.

The term of covering of the pulp with the biological paste depends on its chemical nature and on the properties of the drugs which are included in the paste:

Glucocorticoids – 1 day
Enzymes – 1–2 days
Antibiotics – 2–3 days
Sulfonamide – 2–3 days
Calcium hydroxide – 3–4 weeks.

Rp: Norsulfasoli 5.0
Boli albae 2.5
Glycerini q.s.
Ut f. past.
D.S. Norsulfasoli paste for treatment of pulpitis using biological method.

Rp.: Tetracyclini hydrochloridi 0.1
Hydrocortisoni 0.01
Boli albae 0.5
Olei Persicorum q.s.
M.f. past.
D.S. For treatment of pulpitis using biological method.

Rp.: Chymotrypsini crystallisati 0.002
Norsulfazoli 0.2
Laevomycetini 0.01
Sol. Natrii chloridi isotonicae 2 ml

Boli albae q.s.
M.f.past.
D.S. For treatment of pulpitis using biological method.

Rp.: Calcium Hydroxidi 20.0
Aq. destill. q.s.
D.S. Mix equal volumes of drugs on the paper pad for 10–15 sec.
For direct and indirect pulp covering. The curing time is up to 50 sec.

Odontotropic pastes may also be used for the purposes of biological pastes. Their anti-inflammatory and antimicrobial properties are weaker and they are to be applied for a longer time, however, they demonstrate strong plastic-stimulating effect.

5. Devitalizing pastes

Substances which are protoplasmic poisons (arsenic anhydride in particular) are used with the purpose of devitalization. This substance has oxidation potential, therefore it causes protein coagulation and chemical trauma in the point of contact right after it contacts with the pulp. Arsenic anhydride violates the processes of tissue respiration as it blocks the redox reactions in connective tissue, namely it blocks sulfhydryl groups of redox enzymes. It is used in the form of paste which is applied for 24–48 hours depending on the group affiliation of the tooth and on the pulp condition. Overdose with such paste could cause periodontitis and necrosis of surrounding tissues. It is not recommended to use arsenic paste for children (due to its fast penetration in the periodontal tissues). The effect of the paste can be prolonged by including in it substances which slow the absorption of the paste. Using of devitalizing pastes has several advantages: ease of use, high efficiency and absence of risk caused by anesthesia. Substantially the volume of used paste should be equal to the size of burr's apex No. 1 – No. 2, and it is 0,0006–0,0008 g.

Rp.: Ac. arsenicosi anhydrici
Cocaini hydrochloridi aa 2.0
Phenoli puri liquefacti q.s.
Ut f. pasta
D.S. For devitalization of tooth pulp.

Rp.: Ac. arsenicosi anhydrici
Thymoli
Cocaini hydrochloridi aa 0.5
Sol. Camphorae oleosae q.s.
Ut. f. pasta
D.S. For devitalization of pulp of the tooth.

Rp.: "Caustinerf Arsenical" 6.5
D.S. Arsenic drug for pulp devitalization. Place the drop of the paste on the opened pulp horn, cover it with hermetic bandage without strong condensation. Remove it in 7 days.

Rp.: "Caustinerf Rapide" 5.5
D.S. Arsenic drug for fast quick devitalization. Place the drop of the paste on the opened pulp horn, cover it with hermetic bandage without strong condensation. Remove it in 3 days.

Pastes which include paraformaldehyde are also may be used for pulp devitalization. Vapor of paraformin (formalin) possess with strong bactericide and mummifying effect, and in high concentrations can cause tissue necrosis. The action of such paste is longer (6–8 days) and more tender, and the risk of overdose and toxic effects on surrounding tissues is minimal. All this factors are expanding the indications for use of this devitalizing drug and allow using it even for treatment of temporary teeth. Paraformaldehyde is also a component of mummifying pastes used after devital pulp amputation.

Rp.: Paraformaldehydi 2.0
Cocaini hydrochloridi 1.0
Eugenoli q.s.
Mf. past.
D.S. For devitalization of tooth's pulp. Apply for 5–6 days; it is prepared ex tempore.

Rp.: "Pinc Arsenic fri" 5.0
D.S. Paraformaldehyde paste for pulp devitalization. Apply 2–4 mg of the paste on the opened pulp horn; apply water dentine right form above. Remove the bandage in 4–6 days.

Rp.: "Parapasta" 5.0
D.S. Paraformaldehyde paste for pulp devitalization. Apply 2-4 mg of the paste on the opened pulp horn; apply water dentine right form above. Remove the bandage in 4-6 days.

Rp.: "Devital-Forte" 5.0
D.S. Paraformaldehyde paste for pulp devitalization. Apply 2–4 mg of the paste on the opened pulp horn; apply water dentine right form above. Remove the bandage in 5–7 days.

Non-arsenic pastes (arsenic free).

Rp.: "Non Arsenic" 5.0
D.S Non-arsenic paste for pulp devitalization. Apply 2–4 mg of the paste on the opened pulp horn; apply water dentine right form above. Remove the bandage in 4–7 days.

Rp.: "Depulpin" 5.0
D.S. Non-arsenic drug for painless devitalization and mummification of pulp and its remains.

Drugs used for neutralization of arsenic acid.

Rp: Sol. Unitioli 5 % 5 ml
D.t.d. No. 10 in amp.
For retro-apical therapy of arsenic periodontitis and for application on the oral cavity mucosa.

Rp: Sol. Iodinoli 1 % 00 ml
D.S. For washing root canals.

6. Impregnating agents

The main goal of impregnation is to saturate the tooth with chemical compounds, which leads to change in their chemical and physical properties. Those agents are characterized by their ability to penetrate, saturate, crystallize and mummify. For instance, these substances can cause protein coagulation which provides mummification of organic substances in dentine, cement and enamel. While creating crystalline compounds those substances contribute dentine canals to obliterate, reduce the space between enamel crystals. Impregnating agents can be used for treatment of hyperesthesia of naked teeth necks; in areas of defects of non-carious origin, in the spots of initial caries and for sterilization of root canals.

Silver nitrate in complex with organic compounds forms albuminates and, due to the denaturation of bacterial cell proteins, has a bactericidal effect. Reduction agent should be used along with the silver due to the insignificant amount of organic substances in the enamel and dentine. It is recommended to use 4 % water or alcohol solutions of hydroquinone or 4 % solution of pyrogallic acid, 4 % tannin solution, 4 % formaldehyde solution for that purpose.

The drug penetrates into the tissues to a depth of 0.5 mm, which ensures deep sterilization of the root canal, in particular the deltoid branches. The disadvantage of impregnation with silver is the blackening of hard tissues.

Rp.: Sol. Argenti nitratis 30 % 10 ml
D.S. For impregnation of the dentine in the root canal.

Rp.: Sol. Hydrochinoni 4 % 10 ml
D.S. For reduction of silver nitrate.

Resorcinol-formalin mixture which possesses strong disinfecting effect by denaturation proteins can also be used for impregnation. In addition, formaldehyde vapors have a dehydrating effect providing the mummification of the pulp after its devitalization, or inactivation of ptomaines after gangrenous collapse of the pulp. Formaldehyde also binds ammonia and hydrogen sulfide, compounds of which are formed during tissue decay. The disadvantage of using a resorcinol-formalin mixture is that it stains the hard tissues of the tooth in pink.

Rp.: Resorcini 25.0
Aq. destill. q.s.ad saturationem 40 ml
D.S. A component of resorcinol-formalin liquid.

Rp.: Sol. Formaldehydi 50 ml
D.S. A component for preparation of resorcinol-formalin liquid.

Rp.: Natrii hydrooxydi 25.
Aq. destill. q.s.ad saturationem 48 ml
D.S. A catalyst of resorcinol-formalin liquid.

7. Agents used for retreatment and extension of root canals

Ethylenediaminetetraacetic acid (EDTA) and EDTA-based agents are often used for chemical extension of narrow root canals.

EDTA is a chelating agent and it possess with the effect to bind calcium salts under neutral PH, removing then form bone tissues and dentine. Due to its low surface tension the agent easily penetrates in narrow canals and softens their walls.

The agent should be injected with the help of root-needle in the passable part of root canal for 20–30 sec. and it should be replaced with a new portion. General duration of treatment is 1–3 minutes; mechanical extension of the canal is done after. The remains of the preparation are removed by water washing.

EDTA-based agents are, usually, not toxic for periodontal tissues and don't cause overdose risks.

Contraindications for use of these preparations are not found.

Rp.: Sol. Dinatrii aethylendiamintetraacetatis 10 % 50 ml
D.S. For extension of root canals.

Rp.: Sol. Tetacini - calcii 10 % 20ml
D.td. No. 10 in ampull.
S. Complexing compound is entered in the root canal for its extension with the help of turunda.

Rp.: Sol. "Endosoli" 13 ml
D.S. For extension of root canals. Apply the drop of the preparation in the root canals.

Clean root canals with endodontic instruments soaked in the preparation. Remove the instruments form root canals and dry them. Repeat the manipulations for several times.

Rp.: Sol. "Largal Ultra" 13 ml
D.S. For extension of root canals. Input the preparation in the tooth cavity with the help of pipette, and then into the root canals with the help of root-needle. It's allowed to start mechanically extent the root canal right away. Repeat the procedure for several times. Irrigate root canal with water.

Rp.: Sol. "Canal Plus" 5.0
D.S. For extension of root canals. Prepare endodontic tools (of right size and cambered) are soak them in preparation. Then mechanically process the canals irrigating them with sodium hypochlorite.

Rp.: Gel "RC-Prep" 9.0
D.S. For chemical extension of root canals
It's based on EDTA, urea peroxide and glycol.

Rp. Gel "Solvodent" 5 ml
D.S. For cleaning of canals from sealing materials (zinc-eugenol, phenol-formaldehyde, glass-ionomer and phosphate cement).

Rp. Sol. "Eugeform" 15 ml
D.S. For dissolving of zinc-eugenol pastes in root canals.

Rp. Sol. "Desoclusol" 14 ml
D.S. For dissolving of eugenate-cement during unsealing of root canals.

Antiseptic medicines for treatment of root canals

Solution of sodium hypochlorite 3 %, belodez (2, 3, 5 % solutions, 3 % gel), 3 % Parcan solition, chloran (2 and 5,25 % solutions), which contain sodium hypochlorite. These are antiseptics which belong to oxidant group. 2–3 % solution is used for dissolution of pulp remains after vital extirpation, 5 % solution – for

dissolution of pulp remains after devitalization and diathermocoagulation, 3 % gel is often used for processing of upper jaw teeth canals.

Chlorhexidine digluconate – 0.3–0.5 % solution provides bactericidal antiseptic and antifungal action.

Chloramine – 2 % solution provides bactericidal effect.

Hydrogen peroxide – 1–3 % solution provides bactericidal and haemostatic effect.

A solution of dimethyl sulfoxide (Dimexidum) – 20 % water solution provides anti-inflammatory and antibacterial effects.

Iodinol is antiseptic which belongs to the group of iodine with prolonged action; 1% solution provides bactericidal and fungicide effects.

Krezodent, Krezofen, Krezopat (camphor+chlorophenol) are left in the canal for 3-4 days after incomplete pulp extirpation.

Miramistin, septomirin – antiseptics which belong to the group of cationic detergents. For treatment of root canals.

Grinazol (metronidazole) – an antibacterial agent for the temporary filling of root canals.

Liquid for antiseptic treatment of root canals (chlorhexidine + thymol + Camphor + + eugenol + dexamethasone) – 1 drop of the liquid is left in the canal for 1–2 minutes.

Highly dispersed calcium hydroxide (highly dispersed calcium hydroxide, cuprum hydroxide – II, hydroxo cuprate anions, calcium sulfate dehydrate, methylcellulose). Treatment of tooth root canals with depoforez: washing of the canal with hydroxide copper-calcium 10–20 % suspension.

Rp: Sol. Hydrogenii peroxydi 3 % 50 ml
D.S. For treatment of root canals.

Rp: Sol. Chloramini 2 % 50 ml
D.S. For treatment of root canals.

Rp: Sol. Dimexidi 20 % 100 ml
D.S. For treatment of root canals.
Rp: Sol. Natrii hypochloriti 3 % – 100 ml
D.S. For treatment of root canals.

Rp: Sol. Iodinoli 1 % 100 ml
D.S. For treatment of root canals.

Rp: Sol Chlorgexidini bigluconati 0,3 100 ml
D.S. For treatment of root canals.

Rp: Sol. Furacilini 0.02 % 100 ml
D.S. For treatment of root canals.

Rp: Sol. Furahardoni 0.15 % 100 ml
D.S. For treatment of root canals.

Rp: Sol. Chlorophyllipti spirituosae 1 % 100 ml
D.S. For treatment of root canals.

Rp: Sol. Chlorophyllipti oleosae 2 % 20 ml
D.S. For treatment of root canals.

8. Medicines for sealing of root canals can be divided on groups by their chemical-physical properties: plastic non-hardening, plastic hardening and hard

A) Plastic non-hardening. Antiseptic pastes based on zinc oxide or argil, vaseline or glycerin. Different antiseptic substances are can be added as an active component. Those pastes possess expressed antiseptic effect. These pastes have a pronounced antiseptic effect. All these pastes do not satisfy a number of requirements: they do not harden in the root canal; they are permeable to tissue fluid; they are resorbed and washed out of the root canal.

Therefore, those medicines are only usable for filling of temporary teeth (root resorption and resolution of filling material should occur simultaneously), and as temporary filling material for permanent teeth with unformed roots and for the treatment of infected root canals.

Rp.: Thymoli 0.1
Glycerini 10.0
Zinci oxydi q.s.
M. ut fiat pasta
D.S. For filling of root canals.

Iodent (iodoform, thymol, camphor). Radio-opaque non-hardening paste used for temporary filling of root canals at acute and chronic periodontitis and for treatment of infected canals at pulpitis and different forms of chronic periodontitis.

Calciject (supersaturated aqueous solution of calcium hydroxide). Preparation for temporary (from 2 weeks to 2 months) filling of root canals for treatment of chronic forms of periodontitis.

Abscess Remedy (with or without dexomethasone). A powder contains polyoxymethylene, solution contains 40% formaldehyde, creosote, thymol. Possess expressed antimicrobial and antiseptic effect. It's indicated for temporary filling of root canals in the case of gangrenous pulpitis; for treatment of acute and exacerbated chronic forms of periodontitis.

B) Plastic non-hardening. This group includes cements, hardening pastes, amalgams, materials based on epoxide and artificial resins.

There are generally three types of cements: zinc phosphate, zinc-eugenol and glass ionomer. They are well-hardening, do not resolve, do not create a substratum for microorganisms, do not color the teeth, are radio-opaque.

1. Zinc-phosphate: "phosphate-cement", Adhesor Argil and others.

2. Zinc-oxide-eugenol cements: Evgecent -B, Evgecent -P, Endobtur, Caryosan etc.

Rp.: "Caryosan"
D.S. Zinc oxide-eugenol cement. Dispense the required amount (4–10 drops) of "Caryosan" liquid onto a glass slab, add "Caryosan Normal" powder, and mix until a paste with a sour cream-like consistency is achieved. Perform root canal filling.

3. Glass-ionomer cements: Ketak–Endo, Endion etc.

Zinc oxide- and eugenol-based pastes. These pastes possess antiseptic effects, have good adhesion, and become hard in 10–12 hours. Steroids (anti-inflammatory action), antiseptics (tetrayodtimol) and mummified substances (trimer trioxymethylene) can be added to their composition. They have porous consistency after they become hard and can be partially dissolved in tissue liquid.

Rp.: Zinci oxydi 10.0
Eugenoli q.s.
M.f. past.
D.S. For filing of a root canal.

Rp.: "Tubli-Seal" 24.0
D.S. "Material for filling of root canals based on zinc and eugenol. Squeeze the required amount of the content of the tubes No.1 and No. 2 on the mixing pad in the ratio 1:1. Mix them. Use the received paste as a siller for obturation of root canals.

Rp.: "Endomethasone"
D.S. Material for filling of root canals based on zinc oxide and eugenol. Mix the "Endomethasone" powder with liquid on the mixing glass pad until a paste of creamy consistency appears (recommended ratio to mix powder with liquid is 7:1). Use received paste for filling of root canals.

Canason (zinc-eugenol, metronidazole, paraformaldehyde, hydrocortisone acetate). Use for filing of root canals.

Endomethasone (dexamethasone, hydrocortisone acetate, thymol iodide, para-formaldehyde, eugenol). Radio-opaque substance with antiseptic effect used for filling of tooth canals.

Tiedent (thymoliodid, dexamethasone, zinc oxide eugenol). Radio-opaque substance for filling of root canals for treatment of all forms of periodontitis, especially in the acute stage

Resorcinol-formalin based pastes.

Resorcinol-formalin based pastes are radio-opaque. However, there are several disadvantages of those materials: they have significant shrinkage; they stain hard tooth tissues; they irritate periodontium. These are following materials: Rezodent, Forfenan, Foredent etc.

Rp.: "Endoform"
D.S. resorcinol-formalin based paste with admixtures of steroids for filling of root canals. Mix the liquids in equal ratios and add a powder till the creamy consistency.

Filling materials based in calcium hydroxide provide the stimulation of plastic function of periodontium, formation of the barrier of dentin-alike tissue on deltoid branches and on the apex of the dental root, which appears as a result of metaplasia of pulp or periodontium.

Rp.: "Sealapex" 24.0
D.S. "Calcium hydroxide based material for filling of root canals. Squeeze the content of tubes No. 1 and No. 2 on the mixing pad; mix the right amount of material in the ratio 1:1. Fill the root canals with obtained paste.

Rp.: "Biocalex
D.S. Calcium hydroxide based material for filling of root canals. Apply the requirement amount of the liquid on the glass pad (3–4 drops), add the powder and mix till the paste of creamy consistency appears.

Oil-based (essential oils) filling materials.

Hardening pastes based on the briar, buckthorn oils and A, E vitamins possess anti-inflammatory effect and provide acceleration of reparative processes in the bone tissue.

Rp.: Olei Hippopheae 0.1 ml (or Carotolini 0.1 ml or Olei Rosae 0. l ml)
Zinci oxydi
Dentini aa q.s.
M.f. pasta
D.S. For filling of root canals.

Rp.: Lisocymi crystallisati 0.001
Sol. Retinoli acetatis oleosae 3.44 % - 1ml
Zinci oxydi 1.0
M.f.pasta
D.S. For filling of root canals.

Rp.: Iodoformii pulverati 5.0
Thymoli 5.0
Olei Camphorae q.s.
M f. pasta
D.S. For filling of root canals.

Epoxide resin-based filling materials ("Endodent "AH-26", "AH Plus", "Topseal", epoxide sealant) etc.

They are composed of, mixture of epoxide resins, hardening filler (barium sulphate). These materials are plastic, they penetrate the deltoid canals, are not toxic, possess good adhesion, do not shrink, chemically stable, possess sufficient mechanical strength, radio-opaque, do not change the color of the hard tooth tissues. Violations in techniques of preparation of these materials greatly impair their properties.

Rosin-based filling materials.

Rosin-Novoimaninum paste is composed of rosin, 1 % alcohol solution of novo-imaninum, zinc oxide and subnitrate of bismuth. It crystallizes by evaporation of alcohol.

9. Medical preparations for retro-apical therapy

A group of medicines which are used for treatment of inflammatory processes in apical part of the periodontium. They are used in form of pastes and solutions that are easily removed from the root canal. These medicines possess antibacterial, analgesic effects and stimulate reparative processes in periodontium. They can include several substances with different effects (antiseptics, sulfonamides, steroidal and nonsteroidal anti-inflammatory drugs, anesthetics).

They are used for treatment of an acute, chronic and exacerbated chronic forms of periodontitis.

Rp.: Microcidi 20 ml
D.S. Antibacterial medicine for retro-apical therapy of different forms of periodontitis.

Rp.: Neomycini sulfatis 0.5
D.t.d. No. 5
S. Use for retro-apical therapy for treatment of periodontitis. Dissolve the content of the flask in 100 ml of distilled water or isotonic solution of NaCl.

Rp.: Pasta "Septomixine forte" 7.5
D.S. Complex antibacterial/antifungal/anti-inflammatory medicine used for retro-apical therapy of periodontitis and pulpitis, which contains 0,05 g of dexamethasone.

Rp.: Pasta "Ledermix" 10,0

D.S. Complex antibacterial/antifungal/anti-inflammatory medicine used for retro-apical therapy of periodontitis and pulpitis, which contains 1 % of the corticosteroid triamcinolone.

In addition, calcium hydroxide based drug which provide anti-inflammatory and bactericidal effect can also be used for treatment of infected root canals and retro-apical tissues. Calcium hydroxide can be used in the form of powder, gel or paste. Powder is mixed with liquid (anesthetic, physiological saline, sterile water) and output behind the apical foramen.

Rp.: Gel. "Endocal" 15.0

D.S. Calcium Hydroxide based gel used for endodontic treatment. Every single dose of the gel is injected using the dosing syringe.

Treatment of periodontal diseases

The basis of drug treatment of inflammatory periodontal diseases is the local application of antiseptics and anti-inflammatory agents. A mandatory element of treatment is professional oral hygiene.

Following drugs can be used as antiseptics: Chlorhexidine (sebidin, elyugel) Miramistin (septomirin), Povidone-iodine (vokadin) Sangviritrin, Geksoral, Dioxidine, Furatsilin, Ethonium etc. Some effective local antibacterial drugs: sponges with metronidazole for insertion into the gingival pockets, Metrojen (Septodont) or combined medicines of chlorhexidine with metronidazole, Metrogil denta, Metrodont etc.

NSAIDs like Benzydamine, Diclofenac (Voltaren, Dikloran, Ortophenum) etc. are also indicated locally in combination with antiseptic and antibacterial medicines.

Various dressings and films comfortable for using like polymeric films of Diplen-denta series. The following local medicines can be used during the exudative stage of inflammation: enzymes – trypsin, chymotrypsin, himopsin; combined preparations – iruksol (chloramphenicol + klostridiopeptidaza), lingezin (lincomycin + + gentamicin + protease). Enzymes contribute dissolving of necrotic tissues, viscous secret, exudates and improve the regenerative processes. Local heparin-containing drugs facilitate the exudative stage of the inflammation, they are: Heparin ointment, Heproid, Heparin sodium, Heparinoids.

Troxevasin (2 % gel) reduces the permeability and fragility of capillaries, strengthens the vascular wall, improves the microcirculation and provides decongestant effect.

Glucocorticoids are allowed to be used locally for a short-term (hydrocortisone, prednisolone or others).

Antihistamines are used for the purpose of desensitization. In ambulant practice the advantage is given to non-sedating antihistamine drugs of the 2nd generation like Loratadine, Cetirizine, Terfenadine, Astemizole, Acrivastine.

Antibacterial drugs (such as Cliacil, Ospen, Erythromycin Amoxiclav, Roxithromycin, Azithromycin, Spiramycin, Clindamycin etc.) are used for treatment of severe lesions of periodontium.

Immunomodulators are indicated for treatment of chronic palindromic periodontitis.

Local medicines in periodontology.

Antiseptic drugs.

Rp.: Tab. “Faringosepti” 1.0

D.t.d. No. 15

S. 3–5 tabs. in a day for 3–4 days.

Rp.: “Hexadrepsi”
D.S. Sublingual pastilles.

Rp.: “Hexasprey “750 ml
D.S. 2 doses 3 times a day for no more than 10 days

Rp.: “Hexalise” 1.0
D.t.d. No. 20
S. 1 tab. sublingually 6–8 times a day for 10 days.

Rp.: Sol. Hexorali 0.1 % – 200 ml
D.S. For rinsing of the oral cavity.

Rp.: Sol. Dioxidini 1 % 5 ml
D.t.d. No. 10 in amp.
S. For rinsing of the oral cavity.

Rp.: Sol. Myramistini 0.01 % 100 ml
D.S. For rinsing of the oral cavity.

Rp.: Sol. Septomirini 0.01 % 100 ml
D.S. For rinsing of the oral cavity.

Rp.: Sol. Iodovidoni 1 % 100 ml
D.S. 1 tsp. for 1 glass of water. Use the received sol. for rinsing of the oral cavity.

Rp.: Sol. Sanguiritrini 0.2 % 50 ml
D.S. For treatment of periodontal pockets.

Rp.: Sol. Chlorgexidini bigluconati 0,05 % 100ml
D.S. For rinsing of the oral cavity.

Rp. Sol. Ethonii 0,5 % 100 ml
D.S. For rinsing of the oral cavity.

<u>Antibacterials.</u>

Lincomycin + gentamicin + protease C

Rp.: Ung. “Lingesini” 15.0
D.S. Apply on gums for 20–30 minutes. Then wash the oral cavity with antiseptic solution.

Metronidazole + chlorhexidine
Rp.: Ung. “Metrogyl denti” 10.0
D.S. Apply on gums 2 times a day; it’s not allowed to eat and rinse the oral cavity for 15 minutes after appying.

Rp.: Gel “Metrodonti” 10 ml.
D.S. Apply the gel with the help of cotton swab once a day.
Do not eat for 1 hour after applying. The course lasts for 7–10 days.

Rp.: Lin. Laevomycetini 5 % 25.0
D.S. For rinsing of gums.

Chloramphenicol + methyluracil.
Rp.: Ung. Levomecoli 40.0
D.S. For rinsing of gums.

Chloramphenicol + methyluracil. + sulfadimethoxine + trimecaine.
Rp.: Ung. Levosini 40.0
D.S. For rinsing of gums.

Chloramphenicol + collagenase.
Rp.: Ung. Iruxoli 30.0
D.S. For rinsing of gums.

Rp.: Ung. Erythromycini 10.0
D.S. For rinsing of gums.

Anti-inflammatory drugs.

Diclofenac.
Rp.: Gel. Almirali 1 % 25.0
D.S. Apply a thin layer of the gel on the damaged surface up to 2–3 times a day.

Rp.: Gel. Diklobeni 1 % 40.0
D.S. Apply a thin layer of the gel on the damaged surface up to 2–3 times a day.

Rp.: Gel. Diklogeni 1 % 30.0
D.S. Apply a thin layer of the gel on the damaged surface up to 2–3 times a day.

Rp.: Gel. Diklorani 1 % 20.0
D.S. Apply a thin layer of the gel on the damaged surface up to 2–3 times a day.

Rp.: Ung. Ortofeni 2 % 20.0
D.S. Apply a thin layer of the ointment on the damaged surface up to 2–3 times a day.

Indometacin.
Rp.: Gel. Indobeni 1 % 50.0
D.S. Rub the gel in the damaged area.

Rp.: Gel Indometacini 5 % 40.0
D.S. Rub the gel in the damaged area.

Ketoprofen.
Rp.: Sol. OKИ 150 ml.
D.S. A solution for rinsing (dissolve in 100 ml of water). Use is it 2 times a day.

Rp.: Ung.Butadioni 5 % 20.0
D.S. Apply on the damaged area for 2–3 times a day.

Other medicines.

Rp.: Sol. Chlorophyllipti spirituosae 1 % 100 ml.
D.S. For mouth rinsing (15–20 drops for a ½ glass of water.)

Rp.: Sol.Chlorophyllipti oleosae 2 % 20 ml.
D.S. For handling of affected surface.

Proposolum – splay alcoholic bottle 50 g.

Romazulan – contains an extract of chamomile and essential oil of chamomile. The drug provides anti-inflammatory effect.

Strepsils – lingual tablets.

Maraslavin – a drug is an extract of several medicinal plants. Affect the neurotropic processes of the pathologically changed periodontium, reduces the growth of granulating tissue in the periodontal pockets, bacterial flora, and provides sclerosing effect on the connective tissue.

Chlorophyllipt – An eucalypt extract drug. 2 % oil solution, 1% alcohol solution. Acts as an antimicrobial and anti-inflammatory agent.

For the treatment of gingival hypertrophy (hypertrophic gingivitis), the following methods are used:

Applications of keratolytic agents (solutions of Maraslavin, propolis, Vagothyl, Befungin are applied using turundas into false periodontal pockets for 10–15 minutes);

Physiotherapeutic treatment (electrophoresis with a 10 % solution of calcium chloride, heparin, or lidase; darsonvalization, vacuum massage);

In areas of significant hypertrophy, gingivectomy is performed as indicated.

Gingival dressing (bandages) and films.

Gingival dressing and plates are widely used for local treatment of periodontal diseases. They allow us to immobilize the medicines to provide their uniform release and prolongation.

Using this method allows us to locally create local high concentration of the drug which is needed to achieve the desired effect. Those treatment forms like plates, films and strips are meant to be applied on the surface of the gingival or to be inserted in the periodontal pockets.

The active components of a therapeutic periodontal dressing may include:

1. White clay;
2. Artificial dentin powder;
3. Antibacterial agents;
4. Zinc oxide;
5. Tannin.

Vitadont– therapeutic paste for treatment of periodontitis. It contains the complex of natural antioxidants, vitamins C, E and b-carotene.

Diplen-denta – therapeutic plates for gums. There are several types of such plates:

Diplen-denta Ch – contains chlorhexidine;

Diplen-denta ChD – contains chlorhexidine and dexamethasone;

Diplen-denta LCh – contains chlorhexidine and lidocaine;

Diplen-denta G – contains gentamicin;

Diplen-denta L – contains lincomycin;

Diplen-denta M – contains metronidazole;

Diplen-denta F – contains sodium fluoride and chlorhexidine;

Diplen-denta S – contains solcoseryl.

КР-plast – self-resorbed therapeutic plates, 50–80 mm. There are several of such plates:

КП-plast-fito – contains natural polysaccharides, camomile, yarrow and calendula extracts, vitamin C, antioxidants and plasticizers;

КР-plast-vita – contains natural polysaccharides, vitamin C and E and beta-carotene;

КР-plast antimicrobial – contains natural polysaccharides and polypeptides chlorhexidine, metronidazole;

КР-plast-anesto – plate with anesthetic and vitamins;

КР-plast – haemostatic.

To use cut the required fragment of the plate and place it on the affected area of the gingiva.

Septo-pack – tight gingival compress. It could be used with therapeutic drugs for treatment of localized periodontitis and after the surgical manipulations on the periodontium.

Solcoseryl – dental adhesive paste – gingival dressing.

Indications for applying a periodontal dressing include:
Prevention of secondary trauma to the surgical site during tooth brushing or eating;
Protection of the wound after flap periodontal surgeries.

Contraindications for applying periodontal dressings:
Acute or exacerbated gingivitis and periodontitis;
Presence of dental deposits;
Significant serous-purulent discharge from periodontal pockets;
Ulcerative-necrotic processes (during their active phase).

Treatment of oral cavity mucosa diseases.

Traumatic lesions.

Remove the traumatic factor, oral cavity hygiene, antiseptic measures, and measurements to improve regeneration.

Rp.: Gel. Actovegini 20 % 20.0
D.S. For processing of the mucosa and to improve the regeneration processes.

Rp.: Ung. Methyluracili 10 % 25.0
D.S. For processing of the mucosa and to improve the regeneration processes.

Rp.: Gel. Solcoseryli 10 % 20.0
D.S. For processing of the mucosa and to improve the regeneration processes.

Rp.: Carotolini 100 ml.
D.S. For processing of the mucosa and to improve the regeneration processes.

Necrotizing - ulcerative stomatitis.

First of all, antiseptic agents in the form of rinse solutions should be indicated: 0.05 % solution of chlorhexidine digluconate, Eludril 0.5 % – 1 % hydrogen peroxide solution and others.

Proteolytic enzymes are to be used after.

Rp.: Trypsini crystallisati 0.01
D. t. d. N. 10
S. Dissolve the content of the flask ex tempore in 10 ml of isotonic solution of NaCl. Use for applications.

Rp.: Chymotrypsini crystallisati 0.01
D. t. d. N. 10
S. Dissolve the content of the flask ex tempore in 10 ml of isotonic solution of NaCl. Use for applications.

Rp.: Ung. Iruxoli 30.0
D.S. Use for applications.

Since there is an anaerobic microflora, oxygenotherapy using 1–2% solution of hydrogen peroxide is to be indicated in this case.

Antibacterial agents have to be indicated in the case of severe course of the disease or system infection. Metronidazole (Clione, metrogil, Trichopolum) 400–500 mg 2 times a day during 5–6 days. In addition, antibiotics could be used:

Rp.: Ung. Levosini 50.0
D.S. Use for applications.

Rp.: Ung. Levomecoli 100.0
D.S. Use for applications.

Rp.: Oletetrini 0.25
D. t. d. N.25 in tab.
S. 1 tab. 4-6 times a day.

Rp.: Amoxiclavi 0.375
D. t. d. N.25 in tab.
S. 1 tab. 3 times a day for 6-7 days.

Rp.: Erythromycini 0.25
D. t. d. N.25 in tab.
S. 1 tab. 4 times a day.

Antihistamines, antisense drugs, multivitamins should be indicated as well.

After the plaque disappears, preparations that accelerate regeneration and epithelialization are applied locally: oil solutions of vitamins A and E, Carotolin, rosehip or sea buckthorn oil, Solcoseryl.

Fungal stomatitis.

The treatment sould be caried out individually considering the general condition and features of the course of patological process.

Antifungal drugs are connecting to the lipids of the fungal cell membrane, violating its permeability, contributing the disruption of ion balance of the cells, and change the course of metabolic processes. They reduce the reproduction of pathological and particularly yeast Candida fungi and also aspergilla. They are effective for treatment of variable (including generalized, deep and systemic) forms of mycosis. Some of these drugs are also possess antimicrobial effect (clotrimazole, decamine, miconazole). Drugs of this group can be also used for treatment of the diseases of oral cavity mucosa, immunodeficiency conditions, after the course on antibiotics/ glucocorticoids/cytostatics. They are indicated orally, in the form of applications, rinsings, sprays, ointments, buccal tablets.

Rp.: Fluconazoli 0.l
D.td. N30 in caps. gel.
S. First day of the course – 1 capsule, 4 times a day. Later – 1 capsule 2–3 times a day.

Rp.: Natrii tetraboratis 20.0
D.S. 0.5 tsp. For 1 glass of water, use for mouthrinse.

Rp.: Tab. Nystatin obductae 500 000 ЕД
D.t.d. No.40
S. 2 tabs. 6–8 times a day for 10–14 days.

Rp.: Ung. Nystatini 10.0 (1.0 – 100 000 ED).
D.S. For greasing of an oral cavity mucosa.

Rp.: Ung. Decamini 1 % 30.0
D.S. For greasing of the mouth and lips corners 3 times a day for 10–12 days.

Rp.: Sol. Clotrimazoli 1 % 15ml
D.S. For application on the oral cavity mucosa; for instillation.

Rp.: Tab. Amphoglucamini 100 000 OD
D.t.d. No. 40
S. 2tabs. 2 times a day after eating.

Rp.: Ung. Miconazoli 15.0
D.S. For greasing of an oral cavity mucosa.

Rp.: Tab. Lamisil 0.25
D.t.d. No.8
D.S. 1 tab. Once a day.

It's necessary to indicate immunostimulative drugs, polyvitamins, and occasionally probiotics to elimination of the dysbiosis.

Herpetic stomatitis.

For treatment of lesions caused by the virus of simple herpes fist of all it's necessary to consider the severity of the disease. Complex therapy should include local and general treatment. Antiviral drugs are indicated since the first days as the disease occurred. Modern antiherpetic aciclovir based ointments are the most effective (they are: Zovirax, Virolex, Herpervir, Aciherpin). They are used several times a day after the rinsing of and oral cavity with the antiseptic solutions. Among the other antiviral drugs are: Tebrofen, Bonafton, Riodoksol, Alpizarin Helepin ointments.

Nowadays it is considered that using of interferonogenic drugs which can cause human organism to create interferon (amixine, cycloferon, amicone, mefenamic acid) is the most perspective.

Rp.: Ung. Oxolini 0.25 % 10.0
D.S. For lubrication of mucosa of an oral and nasal cavities.

Rp.: Sol. Gossipoli 0.1 % 50ml
D.S. For applications and irrigations of an oral cavity mucosa 3 times a day for 5–7 days.

Rp.: Ung. Florenali 0.5 % 10.0
D.S. For lubrication of lesioned areas of an oral cavity mucosa.

Rp.: Poludani 0.0002
D.t.d. No.6 in ampull.
S. Dissolve the content of the ampoule in 2 ml of water. Use for applications on an oral cavity mucosa.

Rp.: Ung. Tebropheni 0.5 % 10.0
D.S. For lubrication of lesioned areas of an oral cavity mucosa.

Rp.: Tab. Acicloviri 0.2 N 25
D.S. 1 tab. 5 times a day.

Rp.: Ung. Acicloviri 0.05 % – 2.0
D.S. Lubricate the lesioned areas of mucosa of oral cavity 3 times a day.

Rp.: Tab. Herpeviri 0.2
D.t.d. No. 25
S. 1 tab. 5 times a day.

Rp.: Ung. Herpeviri 2,5 % 15.0
D.S. Lubricate the lesioned areas of mucosa of oral cavity 3 times a day.

Rp.: Ung. Helepini 1 % 20.0
D.S. Lubricate the lesioned areas of mucosa of oral cavity 2–6 times a day.

Proteolytic enzymes.

A group of medicines (mostly of naturally origins), which is able to disintegrate necrotized tissues and fibrinous formations, dilute viscous secretions, exudations, blood clots; possesses antiedematous, antihistamine, haemostatic, anti-inflammatory, hyposensitizing and bacteriolytic effects; suppresses the growth of microbes, amplifies the effect of antibiotics.

They are used for treatment of pulpitis, periodontitis, diseases of periodontal and oral cavity mucosa tissues (purulent, burn wounds, trophic ulcers, decubitus). There are following forms of this group of drugs: applications, instillations, spray, electrophoresis, phonophoresis.

Rp.: Chymotrypsini crystallisati 0.01
D.t.d. No. 10
S. Dissolve the content of the flask ex tempore in 10 ml of Microcidum.

Rp.: Chymopsini 0.05
D.t.d. No. 10
S. Dissolve the content of the flask ex tempore in 5 ml of physiological saline.

Rp.: Trypsini crystallisati 0.01
D.t.d. No. 10
S. Dissolve the content of the flask ex tempore in 10 ml of Microcidum or in 5 ml of physiological saline.

Rp.: Terrilytini 200 ПЕ
D.t.d. No. 10
S. Dissolve the content of the flask in 5 ml of 0.25% novocaine.

Drugs for treatment of allergic conditions

Antihistamines

Antihistamines reduce the reaction of the organism of histamine, bock the spasm of smooth muscles, reduce the permeability of capillaries, prevent the development of tissues edema, reduce the hypertensive effect of histamine, prevent the development and reduce the manifestations of allergic reactions. The toxicity of histamine is

reduced under the influence of antihistamines. Drugs which belong to this group have sedative effect, possess cholinergic and anti-inflammatory effect. Some of them are used to treat multiform exudative erythema, chronic palindromic apthtous stomatitis, Angioedema (Quincke's edema), and other allergic conditions of an oral cavity; and also for treatment of chronic disease which are followed by allergization of an organism (like periodontitis, candidiosis etc.).

Antihistamines are divided into 3 groups, one for each generation.

Drugs of 1st generation, also called sedative. These are the following drugs: Diphenhydramine, Clemastine (Tavegil), Promethazine (Pipolphenum) Antazoline (Suprastin) Megdidrolin (Diazolin). Those drugs possess sedative and soporific effect. They can cause allergic reaction if used for more then 7–10 days. They are metabolized in liver, and they have to be used 2–3 times a day since their interval of action is short; they have a lot of side effects. Therefore, more effective antihistamines of 2nd generation (non-sedative) were synthesized. Those drugs have no sedative or anticholinergic effects, do not pass the blood–brain barrier, do not reduce the mental or physical activity and they have great therapeutic effect.

2nd generation drugs: Cetirizine, Terfenadine, Astemizole, Acrivastine, Loratadine etc.

3rd generation drugs.

These are active metabolites of Terfandine, Astemizole and Loratadine which have gotten rid of their cardiotoxic effects by additional metabolism; they have high antihistamine activity, do not metabolize in liver. These are such drugs: Telfast, Desloratadine. In clinical dentistry 2nd generation antihistamines are proved to be used more often.

H1 antagonists.

Rp.: Ketotifeni 0.001
D.t.d. No. 30 in tab
S. 1 tab. 2 times a day while eating.

Rp.: Tab. Peritoli 0.004
D.t.d. No. 20
D.S. 1 tab. 3 times a day.

Rp.: Tab.Kestini 0.01
D.t.d. No. 5
S. 1 tab once a day.

Rp.: Tab.Yero-loratadini 0.01
D.t.d. No. 15
S. 1 tab. Once a day.

Rp.: Tab.Cetrini 0.01
D.t.d. No. 20
S. 1 tab. Once a day.

Rp.: Tab. Dimedroli 0.05
D.t.d. No. 20
D.S. 1 tab. 3 times a day.

Rp.: Sol. Dimedroli 1 % 1 ml
D.t.d. N. 6 in ampull.
S. 1 ml intramuscularly.

Rp.: Tab. Suprastini 0.025
D.t.d. No. 20
S. 1 tab. 3 times a day.

Rp.: Sol. Suprastini 2 % 1 ml
D.t.d. N. 6 in ampull
S. 1 ml intramuscularly.

Rp.: Tab. Tavegili 0.001
D.t.d. No. 20
S. 1 tab. 3 times a day.

Rp.: Dragee Diazolini 0.1
D.t.d. No. 20
S. 1 dragee 2 times a day after eating for 10 days.

Desensitizing agents.

Rp: Sol. Calcii chloridi 10 % 10 ml
D.t.d. N. 6 in ampull.
S. 5 ml intravenously (IV)

Rp: Sol. Calcii chloridi 10 % 200 ml
D.S. tablespoon 3 times a day after eating.

Rp: Sol. Calcii gluconatis 10 % 10 ml
D.t.d. N. 10 in ampull.
S. 5 ml intravenously once a day or every other day.

Rp: Tab. Calcii gluconatis 0,5
D.t.d. No. 20
S. 1 tab. 3 times a day.

Rp.: Histaglobulini 3 ml
D.t.d. N. 6 in ampull.
S. Inject subcutaneously according to the scheme: 0.1 – 0.2 – 0.4 – 0.8 – 1.0 – 1.5 – 2.0 ml every 3 day.

Medicines for relief of anaphylactic reactions.

Rp.: Prednisoloni 0.005
D.t.d. No. 20
S. 2 tab. 6 times a day.

Rp.: Sol. Prednisoloni 3 % 1 ml
D.t.d. N. 6 in ampull.
S. 1 ml 2 times a day intravenously or intramuscularly.

Rp.: Sol. Adrenalini hydrochloridi 0.1 % 1 ml
D.t.d. N. 6 in ampull.
S. 0.5 ml IV with the isotonic solution.

Rp.: Cordiamini 1 ml
D.t.d. N. 6 in ampull.
S. 1 ml subcutaneously (SC)

Rp.: Sol. Euphyllini 2.4 % 10 ml
D.t.d.N. 6 in ampull.
S. 10 ml IV (preliminarily dissolve in 20 ml of 20 % solution of glucose, inject slowly).

Rp.: Sol. Natrii oxybutyratis 20 % 10 ml
D.t.d. N. 10 in ampull.
S. Slowly inject into vein.

Rp.: Sol. Furosemidi 1 % ml
D.t.d. N. 5 in ampull.
S. 1–2 ml IM every other day.

Rp.: Sol. Dexamethasoni 0.4 % 1 ml
D.t.d. N. 10 in ampull.
S. 1 ml IM.

Drugs used for different diseases of oral cavity mucosa.

Glucocorticoids

Rp.: Ung. Prednisoloni 0.5 % 5.0
D.S. For lubrication of lips with chronic cheilitis.

Rp.: Ung. Hydrocortisoni 1 % 5.0
D.S. For lubrication of lips with cheilitis.

Vitamins and their analogs.

Rp.: Tab. Ascorutinum No. 100
D.S. 2 tab. 3 times a day.

Rp.: Dragee “Undevit” No. 50
D.S. 1 dragee 3 times a day.

Rp.: Ac. ascorbinici 0.1
D.t.d. N. 20 in tab.
S. 2 tabs 3 times a day.

Rp.: Tab. Rutini 0.02
D.t.d. No. 50
S. 1-2 tabs 3 times a day.

Rp.: Nicotinamidi 0.025
D.t.d. N. 100 in tab.
S. 2 tab. 3 times a day.

Rp.: Sol. Acidi nicotinici 5% – 1 ml
D.t.d. N. 15 in ampull.
S. Inject 1 ml under the lesion area for treatment of lichen planus.

Rp.: Sol. Cyanocobalamini 0.05 % – 1 ml
D.t.d. N. 15 in ampull
S. Use for applications for treatment of stomatitis.

Drugs of different groups.

Rp.: Sol. Magnesii sulfatis 25 % 5 ml
D.t.d. N. 10 in ampull.
S. 5 ml IM for treatment of lichen planus.

Rp.: Ung. Methyluracili 5 % – 20.0
D.S. Application for treatment of long term nonhealing ulcers

Rp.: Ung. "Traumeel S" 50.0
D.S. Use for applications.

Rp.: Chonsuridi 0.1
D.t.d. N. 5 in ampull.
S. Application for treatment of long term nonhealing ulcers (dissolve 0.1 g of the medicine in 10 ml of 0.5 % solution of novocaine).

Rp.: Sol. Iodinoli 1 % 100 ml
D.S. application for chronic ulcers and fungal lesions

Rp.: Sol. Citrali spirituosae 1 % 25 ml
D.S. 25 drops for ½ glass of water; use for applications of rinsing for treatment of erythema multiforme exudative, herpetic and aphthous stomatitis; periodontitis

Rp.: Sol. Carotolini 100.0
D.S. Use for applications.

Rp.: "Luroniti" 0.01
D.t.d. N. 5 in ampull.
S. Applications for treatment of long term nonhealing ulcers with sluggish granulating. (dissolve the content of the flask in 2–5 ml of 0.5 % solution of novocaine).

Rp.: Sol. Furacilini (1:5000) 100 ml
D.S. Use as applications or rinsing for treatment of inflammatory diseases of an oral cavity.

Rp.: Olei Cariophyllorum 30 ml
D.S. For pastes mixing.

Rp.: Eugenoli 10 ml
D.S. For therapeutic pastes mixing.

Rp.: "Maraslavini" 100 ml
D.S. For periodontal pockets treatment.

REFERENCES

1. Герелюк В.І., Нейко Н.В., Пвлюк Т.Д., Материнський В.В. Фармакотерапія в стоматології / метод. посібник. Івано-Франківськ : 2001. 58 с.

2. Терапевтична стоматологія : у 4 томах. Том 4. Захворювання слизової оболонки порожнини рота : підручник / М.Ф. Данилевський, А.В. Борисенко, О.Ф. Несин та ін. Київ : Медицина, 2010. 639 с.

3. Марченко А.И., Кононович Е.Ф., Солнцева Т.А. Фармакотерапія в стоматології. Киъв, 1986. 200 с.

4. Фармакотерапія захворювань слизової оболонки порожнини рота і тканин пародонта / А.В. Борисенко, М.Ф. Данилевский, М.А. Мохорт та ін. ; за ред. А.В. Борисенка. Київ : Всеукр. спец. вид-во «Медицина», 2018. 504 с.

5. Мазур І.П., Хайтович М.В., Голопихо Л.І. Клінічна фармакологія та фармакотерапія в стоматології : навч. посібник. 2-ге видання. Київ : Всеукр. спец. вид-во «Медицина», 2019. 376 с.

6. Пародонтальні пов'язки : навч. посібник / С.С. Різник, Б.С. Гриник, В.С. Гриновець та ін. Львів : Ліга-Прес, 2006. 98 с.

7. Коломієць СВ. Використання пов'язок reso-pac в пародонтальній пластичній слизово-ясеневій хірургії. *Вісник проблем біології і медицини*. 2014(2 (1)):177-80.

8. Kathariya R, Jain H, Jadhav T. To pack or not to pack: the current status of periodontal dressings. *Journal of applied biomaterials & functional materials*. 2015 Jul;13(2):73-86

9. Baghani Z, Kadkhodazadeh M. Periodontal dressing: a review article // Journal of dental research, dental clinics, dental prospects. 2013;7(4):183.

10. Monje A, Kramp AR, Criado E, Suárez-López del Amo F, Garaicoa-Pazmiño C, Gargallo-Albiol J, Wang HL. Effect of periodontal dressing on non- surgical periodontal treatment outcomes: a systematic review. *International journal of dental hygiene*. 2016 Aug;14(3):161

11. ConceiÇÃo LD, Cuevas-Suarez CE, Piva E, Lund RG, Leite FR. Biological and mechanical characterization of commercial and experimental periodontal surgical dressings. *Brazilian Oral Research*. 2021 Mar 3;35.

Навчальне видання

ФАРМАКОЛОГІЯ В ТЕРАПЕВТИЧНІЙ СТОМАТОЛОГІЇ (видання друге, перероблене та доповнене)

Методичні вказівки для здобувачів освіти 5-го курсу за спеціальністю "Стоматологія"

Упорядники Любченко Ольга Валеріївна
Гармаш Ольга Володимирівна
Воропаєва Людмила Василівна
Томіліна Тетяна Вікторівна
Андрєєва Олена Вікторівна
Крючко Алла Іванівна

Відповідальний за випуск А. І. Крючко

Комп'ютерна верстка О. Ю. Лавриненко

Формат А4. Ум. друк. арк. 4,0. Зам. № 25-133

Редакційно-видавничий відділ
ХНМУ, пр. Науки, 4, м. Харків, 61022
izdatknmurio@gmail.com, vid.redact@knmu.edu.ua

Свідоцтво про внесення суб'єкта видавничої справи до Державного реєстру видавництв, виготівників і розповсюджувачів видавничої продукції серії ДК № 3242 від 18.07.2008 р.