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Medications Commonly Used in Conservative Dentistry

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Contents

Annotation.

The knowledge of pharmacodynamics and therapeutic effects of medicines are greatly important for a stomatologist (dentist) in the choice of medications being prescribed for a patient.

The scientific-educational work “Medications Commonly Used in Conservative Dentistry” presents groups of medicines, which are used in different fields of therapeutic (conservative) dentistry, including odontology, periodontology and oral medicine. The book also attempts to describe medicines commonly prescribed in dental prophylaxis and rehabilitation.

This booklet is still meant to provide students of dental faculty, postgraduate dentists, and specialists in other allied health fields with a concise reference source for drug names, the preparations available, common dosages.

We are most grateful for your continued interest and support.

Знання фармакодинаміки та терапевтичної дії ліків є надзвичайно важливими для стоматологів для призначення відповідної медикаментозної терапії.

У науково-навчальному виданні “Лікарські форми у консервативній стоматології” представлені групи медикаментів, що знайшли застосування у різних сферах терапевтичної стоматології, включаючи одонтологію, пародонтологію та захворювання слизівки рота. У книзі також частково висвітлені препарати, які використовуються у стоматологічній профілактиці та реабілітації.

Дане видання представляє стислий перелік назв лікарських форм та їх дозування і призначене для студентів стоматологічних факультетів, лікарів-інтернів та спеціалістів суміжних галузей охорони здоров’я.

Авторський колектив буде вдячний за відгуки, зауваження та пропозиції стосовно поданого матеріалу.

Introduction.

Wide introduction into the dental practice of new chemotherapeutic medications, that stimulate metabolic processes, tissue healing, allowed substantially quality improvement of treatment of patients with tooth hard tissues, periodontal and oral mucosa diseases, and decrease relapses and complications in therapeutic dentistry.

As a result of continuous growth of information about new medicines there are difficulties in the estimation of their pharmacological-therapeutic values. There is a great necessity, in this connection, to develop the principles and methods of a comprehensive research of the effect of medicines on an organism.

Many new medicines have an entirely new mechanism of action and totally new chemical structure, considerably wide possibilities of influence on patients with different diseases. For the correct scientifically-grounded application of medicines, a doctor must know the bases of pharmacokinetics and pharmacodynamics of medicines, indications and contraindications for their use.

Pharmacological-therapeutic groups of medicines often include several medicines which differ in chemical structure, strength of effect, possible side effects, allows to choose the most optimal treatment for a patient, and, if necessary, to replace one medicine by another. Rational combination of medicines, in a number of cases, increase their therapeutic efficacy, decrease toxic influence. Wrong combination of medicines, however, can lead to diminution of their activity and provoke side effects. Thus, knowledge of pharmacodynamics and therapeutic effects of medicines are greatly important for a stomatologist (dentist) in the choice of medications being prescribed for a patient.

Preface.

The history of Lviv, the cultural, political and economic centre of Western Ukraine, Eastern Europe goes back to 1256. It was founded by King Danylo of Galicia and named after his son Lev. Lviv State Medical University was first mentioned in documents in 1661. That year on the 20th day of January by the privilege of the Polish king Yan Kazimir the Jesuit Collegium in Lviv acquired the status of Academy. It consisted of four faculties and was awarded the title of the University. However, until the break-up of the University in 1773 the full-blown medical faculty was not established. On the 16th of November 1784 according to the privilege of the Austrian emperor Josef II signed on the 21st of October 1784, Lviv University consisting of four faculties – theology, philosophy, law and medicine -was revived. Since then Lviv State Medical University has started counting its age. During the years of 1891-1898 new academic buildings of anatomy and physiology, pathology, chemistry, obstetrics and gynecology, surgery, internal diseases, dermatovenerology, otorhinolaryngology as well as some University hospitals were built and began their functioning. During the first half of the XX century scientists from Krakow, Vienna, Heidelberg taught medicine in Lviv. University departments were headed by scientists with the worldwide fame – professors H.Kadyj, W.Szymonowicz, A. Bek, Ya. Prus, A. Mars, L. Rediger, A.Cieszynski, M. Nencky, Ya. Parnas, R. Waigel, W. Nowicki and many others. In 1939 the Medical Faculty of Lviv Univesity was rearranged into Lviv State Medical University with the faculties of general medicine and pharmacy. German occupation of Lviv in July 1941 temporarily ceased all kinds of University activities. On the 20th of May 1942, on the order of regional governor Hans Frank the medical institute was renamed into professional courses, although learning curricula were practically identical with those of German schools of medicine. Later the Medical Professional Courses were renamed to State Medical and Prophylactic Professional Courses. These were organized and directed by

professor Marian Panchyshyn and doctor Roman Osinchuk. In July 1941 German security killed 36 professors of Lviv University, among them there were 12 professors of the medical faculty: T.Ostrowski, W.Dobrzaniecki, S.Progulski, J.Grek, R.Rencki, A.Solowij, W.Sieradski, C.Manczewski, W.Nowicki, A.Cieszynski, J.Grzedzielski, H.Hilarowicz. Professors A.Lastowiecki, B.Jalowy and A. Bek died tragically during the years of occupation. On 27 July 1944 German occupation of Lviv ended and on October 1, 1944 a new academic year was launched at the Medical Institute. On October 17, 1996 by the decision of the Concil of Ministers of Ukraine. In 1262 a higher educational institution of the IV level of accreditation – Lviv State Medical University – was established on the basis of Lviv State Medical Institute. On October 21, 1998 the University was granted the name of Danylo Halytsky, the first king of Halychyna-Ukraine. Danylo Halytsky supported education and culture, introduced progressive administrative reforms, improved the army and created for its needs the first school of medicine, which launched the development of medical education in Halychyna. Since 2003 Lviv University was renamed into the Lviv National Medical University named after Danylo Halytsky.

Rector: Zimenkovsky Borys Semenovych, the State Prize Winner (Laureate) of Ukraine in the field of Science and Technology (2000), the Honoured Worker of Higher school of Ukraine (1985), the Doctor of Sciences (Pharmacy), professor (1978), the Academician of five Academies of Sciences, including the Academician of the Academy of Sciences of Higher School of Ukraine (1994), the President of the Halytsky Pharmaceutical Association, a member of the Problematic Commission of Ukraine “Pharmacy”, the Head of the Western Regional Centre of the Academy of Sciences of the Technological Cybernetics of Ukraine, the Head of the Specialized Scientific Council of the Pharmaceutical Sciences in the Lviv National Medical University (LNMU), a member of the Specialized Scientific Council in the National

University “Lviv Politechnika”, a member of the Bureau of the Western Scientific Centre of the National Academy of Sciences of Ukraine, a member of the European Association of the International Education (2000).

The main trend of investigations – the synthesis of the physiologically active substances in the field of the hetero- and macroheterocyclic compounds and the formation (creation) of the new medical preparations. The coauthor of 3 new medical preparations. The author of more than 690 scientific (research) works, including 85 author’s certificates (licenses) of inventions, 5 licenses, the coauthor of the 3-volume edition of the Manual “The Organic Chemistry” in the Ukrainian and Russian languages. Under his direct supervision, 5 Doctors of Sciences and 15 Candidates of Sciences defended their Theses. He is a member of the editorial boards of the specialized scientific weekly journals.

Teaching and research are conducted by 1,227 scholars: 143 Doctors of Science and 640 Candidates of Science, including 114 senior professors, and 350 associate professors. There are 5 Academics and Correspondent Members of Ukrainian National Academy of Sciences and of Ukrainian National Academy of Medical Sciences. Among the professors and senior lecturers of the University, there are 18 Academics and Associates of other academies, 8 winners of Ukrainian State Award in the field of Science and Technique, 7 Honored Workers of Education, 1 Honored Worker of Physical Training and Sport of Ukraine, 12 Honored Workers of Science and Technique of Ukraine, 20 Honored Physicians of Ukraine.

Between 1944 and 2012 years approximately 50,000 specialists graduated from the University. There were 37,5000 physicians, 11,000 pharmacists, 500 bachelors among them.

Today LNMU has 6 faculties, a Medical College, 75 departments (47 clinical ones among them), Medical Dentistry Center, Teaching

Pharmacy, Botanic Garden, Scientific Laboratory and Laboratory of Industrial Toxicology, Antineoplastic Medication Research Center, Scientific Library. The campus occupies 14 buildings, 9 dormitories, and a cafeteria. University has a Recreational and Sport Summer Camp "Medyk".

About 17 000 persons are studying at the University annually, of which 5632 are students, including 1,000 foreigners, 25 students of preparatory courses, about 1,660 residents (internship program), 41 fellows (mastership program), 64 PhD fellows, 64 clinical ordinators, about 10,000 students of Postgraduate education, and 312 students of the Medical College.

Students of all faculties are studying according to the Credit-Module System.

The dental faculty has existed since 1958 though already in 1894 the teaching of dentistry to students of the medical faculty of Lviv University began. At present the dental faculty includes 12 departments, 6 of them profile ones: Departments of Therapeutic Dentistry, Surgical Dentistry, Prosthetic Dentistry, Pediatric Dentistry, Department of Surgical and Prosthetic Dentistry of Postgraduate education, Department of Therapeutic Dentistry of Postgraduate education. The potential of dental departments includes of 7 professors, 7 Doctors of Medical Sciences, 25 assistant professors, 52 Candidates of Science, 58 assistants, 40 doctors-attending physicians. For 42 years more than 5 000 students-dentists have obtained their diplomas here. Students from 33 countries of the world have studied here. Today more than 740 students are trained at the dental faculty, including about 39 foreigners.

Stomatological Medical Center was organized in Danylo Halytsky Lviv National Medical University on December, 28, 2010. The Center united Dental clinic of Lviv National Medical University and Lviv Regional State Dental Clinic.

At present 6 departments of Lviv National Medical University are functioning in the Stomatological Medical Center. Clinical work of the Stomatological Medical Center is provided by the Departments of Therapeutic Dentistry N1,2; Dental Surgery N1,2; Prosthetic dentistry N1; Pediatric Dentistry N1,2.

The staff of Medical Center counts 174 doctors positions. 1480 visitors can receive dental treatment in the Center per day.

Stomatological Medical Center has offices for students training and postgraduate education of dentists. The Center is equipped by pre-clinical classes with phantoms for training, modern radiographic apparatus, physiotherapeutic department, two dental laboratories, rooms for sterilization.

The presented textbook includes a number of commonly prescribed drugs, especially in dentistry. Most common trade names and adult doses of medicines are described. This booklet will provide dentists, medical students with a concise reference source for drug names, the preparation available, common dosages in adults.

It will be of great interest in the broad circle of dental specialists.

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Chapter 1.

Medicines which are used for prophylaxis of tooth decay

1.1. Fluorine-containing medicines

Inorganic part of bone and hard tissue of tooth consists mainly of the phosphates of calcium. They are the crystalline forms of apatite and are known as hydroxyapatites. Hydroxylic ions in the crystalline grating of apatite can be substituted by the ions of fluorine. Fluorapatites are stable in the acidic environment. When enamel is enriched whith this ions it becomes more resistant to the action of caries factors. At simultaneous application of vitamin D_3 formation of fluorapatites in the bones and teeth is stimulated and the process of dentinogenesis is normalized.

Fluorine compounds influence the cumulation of phosphorus and calcium in the organism, surpporting the processes of remineralization, and also depresses the activity of bacterial enzymes in oral cavity (the antienzymic action on the processes of glycolysis).

Fluorine compounds in the form of fluoride enter organism with water and meal. Daily requirement of this compound is 1,4-1,8 mg. of the ionized fluorine for the adult and 0,4-0,8 mg. for children, 1 to 3 yeares of age.

It is important that fluorine ions are protoplazmatic poison which supresses exchange processes in the tissues. In chronic fluorine intoxication various symptoms appear only after a period of 2-3 years of fluorine influence on the organism. Fluorosis develops more frequenly after a 20-year influence of large doses of fluorine compounds. The early period of the intoxication is characterized by the white-yellow spots on tooth enamel, also development of osteosclerosis (especially pelvic bones, spine and ribs) in later periods of intoxication.

In small doses fluorine medicines are necessary for normal processes of teeth mineralization, that promotes tooth hardness and caries resistance.

Sodium Fluoride (Natrii phthoridum)

Synonyms: Fluossen, Koreberon, Natrium fluoratum.

The ions of fluorine accumulate mainly in tooth hard tissues and bones, leading to formation of weakly soluble fluorapatites. They influence the processes of enamel maturation and hardening by stimulating mineralization of tooth hard tissues, thus possessing cariesprotective effect.

In addition, Sodium Fluoride reduces bone resorption. In combination with vitamin D_3 and calcium compounds, Sodium fluoride has an influence on the process of bone calcification.

The main application of Sodium fluoride is for the caries prophylaxis.

Sodiun Fluoride is prescribed in the form of tablets for internal use and in the form of a solution for rinses.

The tablets of Sodium Fluoride (for children) (Tabulettae Natrii phthoridi pro infantibus) are of light yellow color with impregnations containing 0,0011 g, and white color - containing 0,0022 g of active substance.

The tablets of Sodium Fluoride are prescribed for the prophylaxis of tooth decay for children in the age from 2 to 14 years living in the regions where fluorine content in drinking-water does not exceed 0, 5 mg/l.

Prescribe tablets in a dose 0,0011 g for children at the age of 2-6 years, and – 0,0022 g for children older than 6 years once per day. Medicine is recommended for internal use, after meal, dissolved in water, and should be taken daily not less than 250 days within the year (annually , up to 14 years).

In addition, the adults and senior children olver 16 the rinses for oral cavity with Sodium Fluoride solution after meal and teeth brushing are recommended. At first, apply 0,05% solution: rinse for 1 min. 3 times daily; then apply 0,2% solution (on the third day) one time for 1 or 2 weeks. Apply for adults and children older 10 years old 1 table-spoonful

of solution on a rinse (for children 6-9 years old age on a teaspoonful). A rinse should be used fornot less than 9 months of the year.

Simultaneous application of solutions, pills, and Fluor varnish (see) is permissible.

Application of Sodium Fluoride is contraindicated in the areas, where content of fluorine in water exceeds 0,8 mg/l. Medications containing Calcium are not recommended to be taken simultaneously with Sodium Fluoride.

In small amounts (0,5 mg) Sodium Fluoride is included into some complex multivitamin medicines (Oligovit and others).

Sodium Fluoride is also a component of some types of toothpastes.

Foreign analogues of Sodium Fluoride such as: Fluossen 0,015 g (15 mg) and Koreberon - liqueur-bonbons 0,02 g. (20 mg) are applied for treatment of osteoporosis, including steroid osteoporosis. 2-3 drops after meal daily are recommended for a prolonged treatment. Sodium Fluoride can be used in combination with vitamin D_3 and calcium (it is not recommended for caries prophylaxis).

Sodium Fluoride is not recommended in pregnancy, diseases of the liver, exacerbation of gastric and duodenal ulcers.

Contraindications. Content of fluorine in drinking-water is over 0,8 mg/l.

Medicinal forms of production. Powders, solutions, tablets containing 0,0011 g. and 0,0022 g.

Storage. Highly active substances. Should be kepr in a dry cool place, out of reach of children.

Vitafluor (Vitaftorum)

Form of production: suckling pills.

Pharmacotherapeutical group: Polyvitamin medicines

Indications: Prophylaxis of caries, treatment of widespread caries, treatment, and prophylaxis of periodontitis, osteoporosis, traumas of bones.

Pharmacodynamics. The active components of medicine include Sodium Fluoride, which has osteotropic characteristics, stimulates osteogenesis, forms more stable to acids fluorine apatites, stimulates salivation, activates tooth pulp. Due to these properties Sodium Fluoride is used for the prophylaxis of caries, for the prophylaxis and treatment of periodontitis, osteoporosis, and traumatic injuries of bones.

Except Sodium Fluoride, Vitafluor includes vitamins which have a direct influence on the process of bone formation, on a biosynthesis and modification of collagen, in particular, which forms the protein base for mineralized tissues. Vitamin A influences upon the formation of glycoproteins, which are responsible for organic base of bones and stimulates the growth of epithelium. Vitamin D_3 is important for the absorption of calcium and stimulates osteoblasts. Vitamin C (Ascorbic acid) takes part in modification of collagen molecule due to the formation of hydroxyproline and oxylizin.

Due to the combination of Fluorine with the complex of osteotropic and antioxidant vitamins the medicine has an effect on mineralized tissues and can be recommended for prophylaxis and treatment of caries, periodontitis, osteoporosis, traumatic injuries of bones.

Efficiency of osteogenic activity of Vitaftor rises considerably if compared with Sodium Fluoride alone, due to its ability to stimulate the collagen formation in teeth and periodontal tissues.

Pharmacokinetics. Fluorides and vitamins are absorbed in the intestines and carried by blood to the bones and tooth pulp, liver, other internal organs, where they undego partial absorption. Greater part of fluorides are excreted by the urine, their cumulation in the organism are not observed. The stable concentration of fluorides in the blood and saliva is provided by the limited cumulation in the mineralized tissues.

Indications for use. Prophylaxis of caries, complex treatment of widespread caries, treatment and prophylaxis of periodontitis, osteoporosis, traumatic bone injuries.

Method of application and dosage. Pills are taken after meal and hold in oral cavity until complete dissolution, swallowing of saliva accumulated in the oral cavity.

Adults and children after 6 are recommended to take one tablet per day during 1-1,5 months for caries prophylaxis. It is recommended to undergo 2-3 courses of treatment once a year with an interruption 4-6 months (treatment is not needed in summer time).

In the treatment of caries and periodontitis for the adults and children after 6 are recommended to take one tablet 2 times a day during 3 weeks.

One tablet 3 times a day during 2 weeks is advisable for adults in the treatment of osteoporosis and traumas of bones.

Side effects. Allergic rashes or other symptoms of increased sensitivity can appear during the treatment. Besides, there can be signs of hypervitaminosis A and D_3, dyspepsia, pain in feet, joints, fatigue, headache, hypothyreosis, ectopic calcification.

Contraindications. Medicine is contraindicated in the case of allergy to any of its components. The use of medicine is not recommended if the concentration of Fluorine in drinking-water exceeds 0,7 mg/l. Symptoms of hypervitaminosis A and D_3.

Serious diseases of the liver and pancreas dysfunctions, exacerbation of gastric and duodenal ulcers, pregnancy, breastfeeding, children younger than 6 years.

Overdosage. The symptoms of overdosage are: black defecation, nausea or vomiting, diarrhea, somnolence, dizziness, hypothyreosis, increased salivation, superficial breathing, stomach ache, trembling, excitation, watering eyes, weakness, cramps, hyperthermia, myasthenia gravis, tremor, vision dysfunctions, pain in joints, stop of respiration. An overdosage causes the fluorosis of teeth (appearance of white spots on teeth). In case of overdosage it is necesary to discontinue taking the medicine. Therapy is symptomatic.

Peculiarities of application. Before the treatment with Vitafluor it is important to be ascertain that the patient does not take fluorine-containing medicines additionally (Sodium Fluoride, Fluor varnishes) or food products enriched with fluorine.

In hematological patients the regular blood test should be performed on treatment with Vitafluor.

During the treatment with Vitafluor ectopic calcification is possible.

Interaction with other medicines. During the treatment with Vitafluor, other medicines which contain vitamins A, D_3 should be avoid. It is advisable to avoid simultaneous use of Aluminum Hydroxide and Calcium-containing agents. In personal oral hygiene patients should not use fluorine toothpastes or dental elixirs containing fluorine.

Storage conditions. In dry, protected from light place, out of reach of children, at temperature not higher than 25º C. Suitable for use during two years.

Chapter 2.

Medicines with sodium, potassium, calcium and phosphorus

Calcium lactate (Calcii Lactatis)

White powder, water-soluble. Contains 13% of Calcium.

Pharmacological properties. Possesses the similar influence with Calcium Gluconate, but is more effective in internal use.

Indications for use. Inflammatory and allergic diseases of oral mucosa, plural caries.

Method of application. For internal use, 0,5-1,0g, 2-3 times a day. It is possible to combine with Calcium Glycerophosphate.

Side effects. Dyspeptic signs, low heart rate

Contraindications. Thrombosis, thrombophlebitis, atherosclerosis.

Form of production. Powder; pills 0,5 g.

Storage. In tigtly closed containers

Calcium Gluconate (Calcii of gluconatis)

White crystalline powder without odour and taste. Water-soluble, insoluble in an alcohol and ether. Contains 9% of Calcium.

Pharmacological properties. see Calcium Chloride.

Indications for use. Inflammatory processes of the oral cavity, periodontal tissues (catarrhal and erosive stomatitis, gingivitis, generalized periodontitis with predominance of inflammatory component, multiforme exsudative erythema, chronic recurrent aphthous stomatitis, allergic stomatitis caused by prosthetic appliances or medicines); mercury or lead stomatitis, poisoning with fluorine-containing medicines, plural caries, periodontal and teeth diseases in patients with Daun's syndrome.

Methods of application. Internal use, 1-3g, 3-4 times a day before meal. Course of treatment: 2-3 weeks. In patients with generalized periodontitis in the form of electrophoresis on the gums and alveolar bone of a 10% solution of Calcium Gluconate. The medicine is introduced from the positive electrode. Course of treatment is 10-15 sessions.

Side effects. Dispeptic disorders, low heart rate.

Contraindications. Thrombosis, thrombophlebitis, atherosclerosis.

Form of production. Powder; pills 0,5 g, 10% solution in ampules of 10 ml.

Storage. In tigtly closed containers.

Calcium chloride (Calcii chloridum)

Colourless and odourless crystals, with bitter taste, water-soluble. Greatly hygroscopic, is destroyed in open air. Contains 27% of Calcium.

Pharmacological properties. Calcium Chloride has antiinflammatory and hyposensitizing properties. The ions of calcium are necessary for the transmission of nerve impulses, contraction of skeletal and smooth muscles, sedimantation of blood, formation of bone and tooth tissues. Lowering of Calcium content in blood, leads to the raise of excitability of nerves and muscles, tetany. In case of Ca concentration in blood, vomiting, lose of consciosness, comatose state can develop. The exchange of Calcium in an organism is controlled by the hormone of parathyroid gland and vitamin D_3.

Indications for use. Plural caries, allergic stomatitis, hypertrophic gingivitis, generalized periodontitis; after extraction and postoperative bleeding; in intoxication with fluorine medicines.

Method of application. 10% solution is preescribed for internal use and to stop allergic reactions and bleeding (one tablespoon (15,0 ml) 3 times a day after meal, diluted with milk) and in itravenous injections (10 ml). In case of bleeding Calcium Chloride in complex with other medicines is applied on the surface of bleeding. Electrophoresis of 10% solution of Calcium Chloride is used for reducing the gums bleeding in gingivitis and in periodontitis with the expressed inflammatory reaction. In generalized periodontitis electrophoresis of 10% solution of Calcium Chloride is conducted once in two days (in turn with Sodium Chloride), active substance being introduced from anode. A course of treatment is 10-15 procedures. In case of fluorine intoxication give 1-2 tablespoon (15,0-30,0 ml) – of 10% solution of Calcium Chloride.

Side effects. During internal use of medicine pain and dyspeptic signs are possible, intravenous injections are followed by the heartburn.

Contraindications. Thrombosis, thrombophlebitis, atherosclerosis, hyperfunction of parathyroid gland, increase of Calcium content in the blood.

Form of production. Powder, ampules, containing 5 and 10 ml of 10% solution.

Storage. In a dry place.

Sodium hydrocarbonate

Pharmacological properties. Dissolves mucin, present in the secrets of oral mucosa, neutralizes acid media in inflammatory processes.

Indications for use. Generalized periodontitis, mycosis, inflammatory and ulcerative-necrotizing processes of oral mucosa, burns. Is one of the constituences of tooth-powders and pastes.

Method of application. Is used as 2-4% solution of Sodium hydrocarbonate separately or in combination with Sodium chloride for rinses, oral baths, aerosol inhalations, leading to the lowering of nervous and muscular excitation and conductivity. In great quantities the medicine can suppress automatism and contraction of myocardium. It increases the content of acetylcholine in blood, stimulates adrenaline secretion, and causes excitation of the sympatic nerves.

Indications for use. Sodium hydrocarbonate is used during the treatment with corticosteroids (lymphoid form of lichen planus, Stevens-Johnson syndrome, Dyuring's disease and others) for the renewal of potassium level in an organism.

Method of application. During the treatment with Cortisone, hydrocortisone (beginning from the 2nd week of treatment) 1-2 tablespoons (15,0-30,0 ml) of a 10% solution of potassium chloride 3-4 times a day after meal are prescribed in combination with vitamins, Calcium pantothenate, "Askorutin".

Side effects. When used «per os», dyspeptic signs are possible.

Contraindications are diseases of kidneys, accompanied by the changes of secretory function.

Form of production. Powder, ampules containing 20 ml of 4% solution, injections.

Storage. In a dry place.

Chapter 3.
Agents used for local anesthesia

Local anesthetics block the transmission of impulse of excitation in the place of contact with the nerves. Nerves of type C, which are thin, unmyelinated and conduct the feelings of pain, are blocked the first. The tactic feelings are preserved until type A, without myelin nerves, are blocked. Motor nerve fibres are blocked in the last turn.

The mode of action of local anesthetics. The excitation process in the nerve membrane can be inhibited in various ways. Local anaesthetic agents interfere with nerve conduction by decreasing the rate of rise of the depolarizing phase of the action potential. The membrane resting potential is not influenced. The local anaesthetic agents interfere with the depolarization phase by reducing the influx of sodium ions. The potassium efflux, on the other hand, is slightly influenced, that can be explained by the lack of change in the resting potential. The sequence of events is as follows: the reduction in cell membrane sodium-permeability entails a reduction in the degree of the depolarization phase. The critical threshold potential is not reached, and no action potential is"fired". Thus there is no conduction.

Intrinsic potency. The minimum concentration of a local anaesthetic agent required to reduce the nerve action potential by the half of its amplitude within 5 minutes is taken as the measure of the intrinsic potency of the agent. Procaine is the least potent of the agents used in dental practice. Mepivacaine, prilocaine and lidocaine are respectively, 2, 3 and 4 – 6 times as potent as procaine.

All local anaesthetics in clinical use have a typical chemical arrangement – an aromatic and amine constituent connected by a chain. The aromatic part of the molecule is responsible for the lypophilic properties; the amine end is associated with hydrophilicity. Changes in any of these portions will alter the characteristics of lipid/-water solubility

and protein binding. The consequences of such changes will be an altered anaesthetic effect. Such alterations are reflected in changes in intrinsic anaesthetic potency, onset time, duration of action, toxicity ratio and rate of degradation.

The pH of local anaesthetic agents is acid, thus their action appears only after neutralization and releasing of the base which has an anaesthetic properties. This process takes place in tissues on condition that pH is not lower than 7,4. Thus, the action of medicines to a great extent depends on the pH of the environment. In inflammation tissues reaction is acid, that is why the majority of local anesthetics are ineffective in this area.

The local anesthetics are widely used in stomatological practice in the forms of topical and injection anaesthesia, the later being divided into infiltration and conductive anaesthesia.

At topical use anaesthetics influence directly nerve receptors. Infiltration anaesthesia – has receptor-conductive blocking effect. Conductive anaesthesia is executed in the area of nerve fibers, an agent penetrates through myelin membrane of nerves and blocks conductivity, leading to the anaesthesia of the area, which is inervated by the nerve.

Agent used fror local anaesthesia should meet the requirements:

- stability during the storage and sterilization;
- of the irritating effect on the tissues;
- short period of the hidden action;
- prolonged period of anaesthesia;
- absence of allergic reaction.

Anaesthesin
(Anaesthesinum)

Pharmacological properties. Provides the complete long anaesthesia of mucous membrane and skin, stops itching.

Indications for use. Catarrhal and erosive gingivitis; stomatitis; ulcerous necrotizing lesions of oral mucosa; burns, angular cheilitis; diseases of periodontal tissues.

Methods of use. For topical (superficial) anaesthesia of the oral mucosa and periodontal tissues are used: 5-20% oil solution of Anaesthesin; 5-10% ointment or powder of Anaesthesin.

Side effects. Allergic reaction, vomiting, seizures, apnoe, loss of consciousness , methemoglobinemia.

Contraindications. Individual intolerance to the drug.

Novocaine

(Novocainum)

Pharmacological properties. Inhibits excitability of peripheral sensible nerve receptors, conductibility of impulses in nerves and ganglions synapses interfering permeability of cellular membranes for the ions of sodium, potassium and adenosintriphosphatase; retards oxidative reduction processes, increases superficial tension of phospholipides; lowers sensitivity to acetylcholine. Nonocaine inhibits the release of mediators (acetylcholine, noradrenaline) on the receptors of nerves; has a ganglioblocking influence, reduces direct excitation of skeletal muscles, cortex of the brain. The agent inhibits visceral, somatic, polysynaptic reflexes. Has expressed anti-sulfanid effect. In an organism novocaine undergoes quick hydrolyzes with production of para-aminobenzoic acid (vitamin H_1) and dietylaminoetanol.

Indications for use. For conductive and infiltration anaesthesia, blockades in neuralgia of trigeminal nerve and pathological processes on the face.

Method of application. 0,25-2% solution of novocaine is used for different types of anaesthesia, for conductive and infiltration anaesthesia - with epinephrine hydrochloride solution (2 ml of 0,1% solution of epinephrine hydrochloride in 100 ml of 2% solution of novocaine). In topical use novocaine is a combined with other agents(magnesium sulfate, vitamins). The drug can be administered by ionophoresis.

Side effects. General weakness, dizziness, lowering of blood pressure, collapse, shock, allergic reactions.

Contraindications. Increased sensibility to the medicine.

Form of production. Powder, ampules, containing 2, 5, 10 ml of 0,5% solution and 2, 10 ml ampules with 1% solution, 1, 2, 5, 10 ml ampules with 2% solution; small bottles of 400 ml sterile 0,25% and a 0,5% solution of novocaine, rectal suppositories with 0,1 g of novocaine.

Storage. Highly active substances. In the tightly closed bottles of orange glass. In ampules and suppositories in a dark cool place.

Trimecaine
(Trimesainum)

Pharmacological properties. Has a local anaesthetic activity. The strength of the medication is twice as much as that of novocaine, and an effect is more prolonged. Unlike novocaine has no antisulfanilamide influence, that is why can be used in patients taking Sulfanilamids. Has a sedative, anaesthetic, anticonvulsive, somnolent and antiarrhythmic effect after absorption.

Indications for use. Is used for conductive and infiltration anaesthesia; blockades the trigeminal nerve in neuralgia, anaesthesia of tooth hard tissues in case of hypersensitivity.

Method of application. 2% solution of trimecaine (up to 10 ml) is used for conductive anaesthesia, 0,25-0,5% or a 1% solution (up to 50 ml) is used for infiltration anaesthesia. 2-5% solution (applications within 10-15 min) is recommended for applicational anaesthesia.

Trimecaine is one of the components of anaesthetic pastes which are applied on the tooth surface in case of hypersensitivity. Paste is rubbed into hypersensitive areas of a tooth for 3-5 min. 0,1% solution of Adrenalin hydrochloride (one drop in 2 ml of the solution) can be added to intensify the effect of Trimecaine. The highest permissible dose for adults must not exceed two gramms.

Side effects. The medication is usually well tolerated by the patients, in case ofoverdosage headache, general weakness, dizziness, collapse, shock, allergic reactions can occure.

Contraindications. An individual hypersensitivity to the medicine.

Form of production. Powder; ampules, containing 2 ml of 2 and 5% solution.

Storage: Highly active substances. In the tightly closed bottles.

Trimecaine with Noradrenalin hydrotartrate
(Trimecainum)

Pharmacological properties. Has a stronger and more protracted anaesthetic effect. Noradrenalin hydrotartrate neither irritates tissues nor causes allergic reactions at local application.

Indications for use. Is used for conductive and infiltration anaesthesia; blockades of trigeminal nerve during opening of abscesses and flermonas, anaesthesia of tooth hard tissues in case of hypersensitivity, in caries, pulpitis, generalized periodontitis.

Method of application. For infiltration and conductive anaesthesia medicine is administered in a dose from 1-4 ml, in some cases up to 12 ml. In case of hypersensitivity medicine is rubbed into the tissues locally for 3-5 min.

Side effects. Edema of the tissues at the place of application, short hypertension, hasten breathing, nausea can occur.

Contraindications. Hypertension, cardiac insufficiency, atrioventricular blockade, thyreotoxicosis, allergy to trimecaine; medicine is not recommended in Phtorotan, Cyklopropan and Chloroform narcosis.

Form of production. Ampules, containing 2 ml of 2 % solution with 0,004% solution of Noradrenalin hydrotartrate.

Storage: Highly active substances. In the tightly closed bottles at a room temperature.

Dicain
(Dicainum)

Pharmacological properties. Dicain has an expressed anaesthetic activity, much stronger than Cocaine or Novocaine, but it is two times more toxic than Cocaine and 10 times – than Novocaine. Easily penetrates through the superficial layers of oral mucosa. Anaesthetizing effect is achieved during 1-3 min. and lasts for 20-40 min.

Indications for use. Dicainum is used for applicational anaesthesia of oral mucosa, before the curettage of periodontal pockets, in case of hyperesthesia of tooth hard tissues.

Method of application. 0,5% solution of dicain is used for the anaesthesia of oral mucosa and periodontal tissues. Tampon saturated with solution of medicine is applied to the area of oral mucuos or into the periodontal pockets for 1-2 min. 0,1% solution of Adrenalin hydrotartrate (one drop in 5 ml of the solution) can be added for intensification and prolongation of the effect of Dicain. Dicain paste is used in teeth hyperesthesia, and rubbed into the tooth tissues during 3-5 min. The highest dose for the single use must not exceed 0,009gramms.

Side effects. Medicine is very toxic, use with caution. When quickly absorbed can cause dizziness, the pulse slow down, depression of the vision center, vomitting.

Contraindications. Allergic reactions, age younger than 10 years, general grave condition.

Form of production. Powder; eye films (0,00075 gramms).

Storage: Highly active substances. In the tightly closed bottles.

Pyromecain
(Pyromecainum)

Indications for use. For the superficial anaesthesia of oral mucuos in case of catarrhal, erosive, aphthous, ulcerative stomatitis, exudative erythema multiforme and other diseases.

Method of application. For applicational anaesthesia of oral mucosa 0,5-2% solution of Pyromecain is applied for 10-15 min. 0,1% solution of Adrenalin hydrochloride (one drop in 2 ml of solution) can be added for intensification of the effect of Pyromecain. The highest dose for adults must not exceed one gramm.

Side effects. General weakness, headache, nausea, vomitting, hypotension, cramps, shock, dermatitis, syncope.

Contraindications. Liver, kidney diseases, increased sensitivity to the medicine.

Form of production. Powder; ampules, containing 10 ml of 0,5; 1; 2% solutions; ointment is in the tubas of 30 gramms.

Storage: Highly active substances. In a dry cool place.

Lidocaine

(Lidocainum)

Pharmacological properties. Lidocaine has expressed local anesthetic effect, provides infiltration and conductive anaesthesia, has an antiarrhythmic effect. Lidocain is quickly absorbed after injection, and in pharmacological activity is 2 times stronger than Novocaine. Toxicity of 0,5% solution of Lidocaine is the same as that of Novocaine, however in a greater concentrations the toxicity of Lidocaie is increased two times as much. Lidocaine does not reduce the antibacterial effect of Sulfanilamids (as well as Trimecaine).

Indications for use. For infiltration and conductive anaesthesia, before the operation, for applicational anaesthesia in stomatitis, ulcers, erosions, glossitis.

Method of application. For anaesthetizing of oral mucosa 0,25-0,5% solutions are used. The general amount of Lidocaine solution during the operation must not exceed 500 ml. For conductive anaesthesia apply 1-2%

solution (up to 5ml), for applicational anaesthesia of oral mucuos – 1-2%, or seldom 5% solution (not more than 2 ml) are used. The effect of Lidocaine can be prolonged by adding 0,1% Solution of Adrenalin Hydrochloride (1 drop in 10 ml of the solution, but not more than 5 drops).

Side effects. General weakness, pain in the chest, nausea, vomitting, convulsions, shock, dermatitis, syncope. Quick absorption of the medication in blood circulation may provoke rapid hypotension and collapse.

Form of production. Ampules containing 10 ml of 2% solution and 2 ml of 10% solution of Lidocaine.

Storage: Highly active substances. In the darken place.

Chapter 4.

Antimicrobial, antiparasitic and antiviral agents

Iodinole
(Iodinolum)

The compound of Iodine and Polyvinyl alcohol.

Composition: 0,1% Iodine, 0,3% Potassium Iodide, 0,9% Polyvinyl alcohol. Transparent liquid, navy blue color, with the characteristic smell of Iodine.

Pharmacological properties. Iodine is the main ingredient of the medication, which ensures antiseptic properties. Polyvinyl alcohol retards the excretion of iodine, prolongs the time of its interaction with the tissues in the organizm, reduces irritative effect of Iodine on oral mucosa.

Indications for use. For the treatment of oral cavity, diseases of oral mucuos and periodontium as an antiseptic in chronic apical periodontitis.

Method of application. Iodinole is used as a 1% solution for the treatment of marginal periodontium, root canals, for applications and irrigations of oral mucuos in case of its injuries.

Side effects. Allergic reactions in persons with expressed idiosyncrasy.

Contraindications. An encrease sensibility to Iodine - containing medicines.

Form of production. Small bottles containing 100 ml of Iodinole.

Storage. Highly active substances. In dark jars, in places protected from light.

Lugol's Solution
(Solution Lugoli)

Iodine Solution in the water Solution of Potassium Iodine.

Composition: Iodine - 1 part;

Potassium Iodine - 2 parts; water - 17 parts.

Pharmacological properties. The medication has antinflammatory, astringent, antimicrobial and fungicide properties. It promotes resorption of inflammatory infiltrates in chronic processes.

Indications for use. Lugol's solution is used for lubrication of oral mucosa; sterilization of the root canals in apical periodontitis; before the removal of dental deposits, curettage of periodontal pockets, gingivotomy and other surgical procedures. Solution of Lyugol with Glycerin is recommended for aerosol inhalations in catarrhal, erosive and candidiasis stomatitis and as a diagnostic test in periodontal inflammation.

Method of application. Solution of Lyugol is used for lubrication of oral mucosa before dental manipulations. 10 aerosol inhalations for 2-3 min are prescribed in catarrhal, erosive and candidiasis stomatitis and 5-10 drops of medication for internal use after-meal. Solution of Lyugol is used for sterilization of root canals (cathodic electrophoresis).

Side effects. Irritation of oral mucosa, allergic reactions.

Contraindications. An encreased sensitivity to medicines containing Iodine.

Form of production. Small bottles.

Storage. In the place protected from light.

Chloramine

(Chloraminum B)

Sodium Benzolsulfochloramid.

Synonyms: Chloramine, Neomagnol.

White, or a yellowish crystalline powder with a faint smell of chlorine. Water-soluble (1:20), especially in hot water and alcohol (1:25). Chloramine, when being diisolved, formed lackluster liquid containing 29% of active Chlorine.

Pharmacological properties. Has expressed antiseptic, deodorizing effect. Solutions of Chloramine are characterized by protracted antimicrobial action due to the isolation of free Chlorine.

Indications for use. For treatment of the root canals, oral cavity, infected wounds, periodontal pockets.

Method of application: 0,25%-0,5% solution of Chloramine is used for irrigation of oral cavity and for the treatment of periodontal pockets.

Side effects. Irritation of oral mucosa in case of use over a long period of time.

Contraindications. Acute inflammatory processes of oral mucosa and individual hypersensibility to the medicine.

Form of production. Powder.

Storage. In dark jars, in places protected from light.

Sodium Iodide

(Natrii Jodidum)

White crystalline odourless powder, taste salt. Sodium Iodide is decomposed on air and educes Iodine. Soluble in water, glycerin and alcohol.

Pharmacological properties. Sodium Iodide has antiseptic irritative, counter-attractive, antiinflammatory properties, educes resolutions of infiltrates.

Indications for use.Mycotic lesions in oral cavity, actynomycosis, cheilitis, sialoadenitis, etc.

Method of application. In xerostomia, catarrhal stomatitis, mycotic lesions apply 2% solution of Sodium Iodide in the form of thermal inhalations (for 1 procedure – 200 ml of solution). Duration of inhalations – 6-8 min.,one time a day, course of treatment – 10 days.

Sodium Iodide is appointed intraorally (0,3 g 3-4 times a day) in case of candidiasis. Course of treatment – 8-10 days.

Side effects. Dermatitis, nettle rash, allergic rash, signs of iodism.

Contraindications. Unbearableness to Iodine, tuberculosis, kidneys dysfunctions, furunculosis, pyodermia, hemorragical diathesis, hypothyreosis.

Form of production. Powder.

Storage. In dark orange jars, in places protected from light

Solution of Hydrogen Peroxide
(Solutio Hydrogenii peroxydi diluta)

Solution of Hydrogen Peroxide is a transparent colourless and odourless liquid with a slightly acid reaction. It decomposes quickly at direct sunligt, educes oxygen, when being heated or mixed with bases.

Pharmacological properties. Has antiseptic, deodorant and styptic properties. Catalase enzyme fissions Hydrogen Peroxide, oxygen is educed with intense bubbles during this reaction. During this reaction wound is cleaned from the particles of pus, tissue debris, blood clots. In the wounds which are not contaminated with protein products, Hydrogen Peroxide educes oxygen which has an antimicrobial properties.

Indications for use. Hydrogen Peroxide disinfect the area of inflammation of oral mucosa, stops bleeding, is used in the treatment of periodontal pockets, root canals, hypertrophic gingivitis.

Method of application. 0,25% Solution of Hydrogen Peroxide is applied for irrigation of oral mucosa, periodontal pockets and root canals in apical periodontitis.

In combination with the Potassium Iodide can be used for superficial sclerotherapy at the initial and 1st degree of generalized periodontitis (few crystals of Potassium Iodide are placed in the periodontal pocket simultaneously with the cotton moistened with Hydrogen Peroxide. The reaction takes place immediately. After the formation of yellowish foam, periodontal pocket to is dried up carefully. A course of treatment is 3-4 sessions.

For a deep sclerotherapy in hypertrophic gingivitis 5% solution of Hydrogen Peroxide is injected into the basis of papilla, which turns white. A course of treatment is 6-8 injections with an interval 2-3 days.

Side effects. Possible burns in case of use of 5% solution of Hydrogen Peroxide.

Contraindications. It is not indicated in deep wounds (embolism can occur).

Form of production. Small bottles of 50 ml.

Storage. In the cool place protected from light

Hydroperit

(Hydroperitum)

Pills which contain Hydrogen Peroxide (35%) and urea, water-soluble.

Pharmacological properties. Has antiseptic, deodorant and styptic action. Catalase enzyme fissions Hydrogen Peroxide what is followed by oxygen production. Clean the wound from the particles of pus, tissue debris, blood clots. In the wounds which are not contaminated with protein products, Hydrogen Peroxide educes oxygen which has an antimicrobial properties.

Indications for use.Used as an antiseptic instead of Hydrogen Peroxide: one tablet of Hydroperit has the same action as 15 ml of a 3% solution of Hydrogen Peroxide. Two tablets of Hydroperit are dissolved in 100 ml of water to receive 1% solution.

Side effects. Possible burns.

Contraindications. It is not indicated in deep wounds (embolism can occur).

Form of production. Tablets – 1,5 g.

Storage. In tightly closed packages, in the place protected from light and moisture.

Benzoic acid

(Acidum benzoicum)

Colorless needle-shaped crystals or white crystalline powder, slightly soluble in cold water, well – in boiling water and fatty oils.

Pharmacological properties. Has antifungal and antimicrobial effects

Indications for use. Mycotic cheilitis, angular cheilitis, simple and hypertrophic gingivitis, bad odour.

Dosage. 5-10% ointment used to lubricate the lips 3-4 times a day. Solution of Benzoic acid with Thymol (20-30 drops in a glass of water) are used for rinsing of oral cavity.

Adverse reactions, Contraindications. Not reported.

Form of production . Powder.

Storage. In a tightly sealed container.

Boric acid

(Acidum boricum)

Colourless shiny crystals, greasy in touch, flake-like or fine crystalline powder, soluble in water and alcohol.

Pharmacological properties. Has antiseptic and antifungal effects.

Indications for use. Stomatitis, cheilitis, fungal lesions of the oral mucosa, bad breath.

Dosage. 2-4% aqueous solution is used in the form of mouthwashes in combination with infusions and decoctions of Sage, Marsh mallow, mint and other herbs (3-4 times a day). 5-10 % ointment and powder are calso used in fungal lesions of oral mucosa and cheilitis.

Side effects. Prolonged use in large areas of oral mucosa can provoke intoxication (dyspepsia, cutaneous rash, fever, headache, kidney damage, collapse).

Contraindications. Should not be used in closed wounds, not recommended for children.

Form of production . Powder.

Storage. In densely closed bottles.

Potassium permanganate

(Kalii permanganas)

Dark or red-violet crystals with metallic luster, soluble in water. The interaction of organic matter (carbon, tannins) can provoke an explosion.

Pharmacological properties. In contact with the tissues the substance is decomposed and form oxygen and Magnesium dioxide that depending on the concentration has astringent or irritating effect. Free oxygen has an antimicrobial and deodorizing effects.

Indications for use. Solution is used for wounds bathing or to stop bleeding, as an antiseptic and deodorizing agent in periodontal lesions, ulcerative-necrotizing processes of oral mucosa.

Dosage. 0,01-0,1% solution is recommended as mouth rinses and 0,1-0,5 % solution is used for wound bathing..

Side effects. In high concentrations may irritate tissues.

Contraindications. Not reported.

Form of production . Powder.

Storage. In a well-sealed container.

Sodium tetraborate

(Natrii tetraboras)

Synonyms: Natrium biboricum, Borax, Natrium tetraboricum.

Colourless, transparent crystals, which are easily evaporated or white crystalline powder, soluble in water and glycerin, insoluble in alcohol.

Pharmacological properties. Sodium tetraborate has a well-defined antimicrobial, antifungal effects and cleans oral cavity from the mucus, because of the ability to dissolve mucin.

Indications for use. Fungal stomatitis, cheilitis, glossitis, bad breath, inflammation of periodontal tissues.

Dosage. Sodium tetraborate is used for rinses of oral cavity (1/2 teaspoon of the drug is dissolved in a glass of water) and applications, that lubricate mucous membrane. Sodium tetraborate is the ingredient of antifungal emulsion in glycerin (lubricate mucous membrane 3-4 times a day) and tooth powders.

Side effects. Nausea, vomiting, cutaneous rash, and headache.

Contraindications. Not prescribed for washing of enclosed cavities.

Form of production. Powder.

Storage. In a well -closed container.

Tablets "Bikarmint"

(Tabulette "Bikarmintum")

Composition of the tablets is: Sodium tetraborate (0,4 gramms), Sodium bicarbonate (0,4 gramms), Natrium chloride (0,2 gramms), Menthol (0,004 gramms).

Pharmacological properties. Have antiseptic and antiinflammatory properties.

Indications for use. For oral rinses in stomatitis, inflammation in periodontal tissues.

Dosage. 1-2 tablets are dissolved in 1/2 cup of water and used for rinsing of oral cavity 3-4 times a day.

Side effects. Prolonged use may cause hyperrophic changes of the papillae of the tongue.

Contraindications. Not reported.

Form of production. Tablets.

Storage. Under usual conditions.

Argentum nitrate

(Argenti nitras)

Synonyms: Argentum nitricum.

Colorless transparent crystals, odourless. Easily soluble in water, alcohol. When exposed to light grow dark.

Pharmacological properties. Silver nitrate forms insoluble albuminates with proteins, inhibits the enzyme systems of microorganisms. The medication has antiinflammatory, astringent, bactericidal properties, when used locally, in small concentrations, at higher concentrations – has irritating effect, can cause tissues necrotization.

Indications for use. For the treatment of hypersensitivity of tooth hard tissues, root canals sterilization, coagulation of aphts and ulcers (when excessive granulation tissue is present), for curing of oral mucosa.

Dosage. In increased sensitivity of exposed tooth necks, 20-30 % solution of Silver nitrate is applied on areas of hyperesthesia, 2-3 % solution is used on aphthae and ulcers with excessive granulation tissue.

Silver nitrate is one of the component of an oinment for treating burns of mucous membranes and the paste for root canal filling.

Side effects. Changes the color of teeth (black color) and oral mucosa, abdominal pain and vomiting can occur.

Contraindications. Treatment of tumors, prone to malignant growth.

Form of production. A powder, sticks.

Storage: List A. In a sealed bottles of dark glass.

Maraslavin

(Maraslavinum)

The preparation of medicinal plants.

Pharmacological properties. Maraslavin has bacteriostatic, deodorant, antiinflammatory effect. Originally causes hyperemia of the oral mucosa, promotes healing of ulcers, epithelialization of the oral mucosa, due to its acidic reaction, supresses fuzo-bacteria and spirochaete.

Indications for use. Catarrhal, hypertrophic gingivitis, generalized periodontitis.

Dosage. After removal of local irritants Maraslavin is used in the form of instillations into the periodontal pockets during 5-6 min. and than replaced with new ones. The procedure is repeated 3-5 times. The treatment course – 14-25 sessions. The first 7-12 visits are conducted daily the rest visits are once in two days.

Side effects. Subfebrile temperature.

Contraindications. Not reported.

Form of production . Bottles of 100 ml.

Storage. In a cool, dark place.

Copper sulfate

(Cupri sulfas)

Synonyms: Cuprum sulfuri.

Blue crystalline powder, odourless, with a metallic aftertaste, soluble in water.

Pharmacological properties. It has astringent, antiseptic, partially mild coagulative properties. In case of burns of oral mucosa, caused by Phosphorus, treatment of mucous membrane with Copper Sulfate leads to formation of insoluble Copper Phosphate and reduction of Copper Sulfate into metallic Copper. Phosphorus particles are also covered by a film that protects further oxidation of Phosphorus.

Indications for use. Hypertrophic gingivitis, periodontitis, impetigo, burns of the oral mucosa, caused by Phosphorus.

Dosage. 5 % solution of Copper Sulfate is applied on oral mucosa, burned by Phosphorus. In case of intoxication by white Phosphorus, 0,3-0,5 gramms of Copper Sulfate, dissolved in 1/2 cup of warm water is prescribed for internal use; 0,1 % solution of Copper Sulfate is used for lavage of the stomach; 20% solution of Copper Sulfate is used for one-time coagulation of ulcers and granulations in periodontal pockets.

1% solution of Copper Sulfate is applied for root canal sterylization, and electrophoresis in the treatment of ulcers and periodontitis.

Side effects. When applied topically can provoke tissues irritation, in internal use – abdominal pain, kidney and liver dysfunctions are possible.

Contraindications. Pregnancy, hypertension, cardiovascular diseases in the stage of decompensation.

Form of production . Powder.

Storage: List B. The well-closed container.

Methylen blue

(Methylenum of coeruleum)

N,N,N',N'-Tetramethylthionin chloride.

Synonyms: Methylen blau, Methylthionini chloridum.

Dark-green crystalline powder or crystals, badly soluble in water, better in alcohol. Hydrogen solutions of Methylen blue have dark blue color.

Pharmacological properties. In external application Methylen blue has antiseptic, astringent, antiinflammatory properties, suppresses growth of protozoa, has oxidizing-reductive properties.

Indications for use. Erosive, ulcerative aphtous stomatitis, lesions of oral mucosa in radiation sickness, lesions of the face skin.

Method of application. 1-2% water solution of Methylen blue is applied on the lesions of oral mucosa.

Side effects. In case of internal use, changing of urine color, nausea, vomiting, headache are possible.

Contraindications. Internal use is not recommended in kidneys diseases.

Form of production. Powder.

Storage. In the well bottled containers.

Brilliant green

(Viride nitens)

Bis-(para-diethylamino)- threephenilanhydrocarbinole ocsalate

Synonyms: Atylgran, Soligran.

Golden-green crystals, badly dissoluble in water and alcohol.

Pharmacological properties. Has well expressed antiseptic effect, kills staphylococcus, diphtheria bacilli, and a number of gram-positive bacteria. In the presence of proteuns, antimicrobial activity of Brilliant green is diminished 10 times as much.

Indications for uses. Ulcerative-necrotizing and blister lesions of oral mucosa, lips, skin pyodermia.

Method of application. 0,1% water solution of Brilliant green (1 ml of 1% spirituous solution of Brilliant green is added to 10 ml of distilled water) is used for the lubrication of oral mucosa.

Side effects. Contraindications. Not reported.

Form of production. Powder, 1 and 2% alcoholic solution in the small 10 ml bottles.

Storage. In the well bottled container.

Aethacridin lactate

(Aethacridini of lactas)

2-Ethoxy-6,9-diaminacrydini of lactas.

Synonyms: Acricidum, Acrinol, Acinolin, Ethodin, Rivanolum.

Yellow crystalline powder, with bitter taste, odourless. Badly soluble in cold water (1:50), better – in hot, little soluble in an alcohol. Hydrogens solutions are quickly dissociated, that is why they are prepared directly before the use.

Pharmacological properties. Has an antimicrobial effect against strepto- and staphylococcuss. Little-toxic, does not irritate oral mucosa.

Activity of the medication does not decrease in the presence of albumens.

Indications for use. Is used as an antiseptic in the inflammatory processes of oral mucosa and periodontium.

Method of application. 0,1% solution is used or irrigations of oral cavity, rinses and applicationse, 1% is recommended for treatment of erosions and ulcers.

Side effects. Not reported.

Contraindications. Not recommended in kidneys dysfunctions, accompanied by albuminuria.

Form of production. Powder, pills which contains Aethacridin lactate (0,01 gramms) and Boric acid (0,09 gramms); 0,1 % alcoholic solution; 3% ointment in tubes.

Storage: list. In the well bottled container.

Chlorhexidine bigluconate

(Chlorhexidini bigluconas)

1,6-Біс-[5-(chlorphenili) -biguanidi]-hexanum.

Synonyms: Abacil, Biotensid, Chlorohex, Corsodyl, Fimeil, Hibitane, Septalone, Sterilone.

Pharmacological properties. Chlorhexidine has bactericidal and antiseptic properties. Is effective against gram-positive and gram-negative bacteria and fungi.

Indications for use. For irrigation of wounds, rinses of oral cavity, ulcerative-necrotizing and mycotic lesions of oral cavity, rapid sterilization of instruments.

Method of application. 0,05% solution is used for rinses of oral cavity. 0,2% solution of Chlorhexidine bigluconate is recommended for irrigation of periodontal pockets and carious cavities. 2% solution is used for irrigation of root canals.

Side effects. Allergic reactions are possible.

Contraindications. Allergic reactions, not recommended in combination with iodine-containing medications..

Form of production. 20% solution in jars, containing 500 ml, 0,05% solution in jars of 100 ml.

Storage. In the place protected from light. Preparation is active by 7 days after opening of the bottle.

Cygerol

(Cygerolum)

4,8(±)-DL-2-cyclohexyl-5,9-dimethyl-4,8-capric acidum.

The transparent liquid light yellow, bitter in taste, with a characteristic odor. Insoluble in water, soluble in organic solvents.

Pharmacological properties. Helps cleanse the wound surface of necrotic tissue, pus, stimulates epithelization of the wound. Has antiseptic effect.

Indications for use. Burns, ulcer- necrotic lesions of the oral mucosa and skin.

Dosage . The affected oral mucosa impose tsyherolu as applications 10-20% oil solution for 10-15 minutes. Ointment in 10-25% made on the

basis of lanolin, lubricate the mucous membrane of the mouth 3-4 times a day.

Side effects. In place of massive layers short-term heartburn can be observed.

Contraindications. Not reported.

Form of production . Bottles of orange glass 50 g Storage: List B. At room temperature, protected from light.

Vinylin. Balsam of Schostakowsky

(Vinylinum. Balsam Schostakowsky)

Polivinilbutilovny ether.

Thick, viscous light-yellow color liquid with a specific smell. Almost insoluble in water, littlesoluble in an alcohol.

Pharmacological properties. Has a antiinflammatory, bactericidal enveloping influence, improves the regeneration of fabrics.

Indications for uses. Running sore is on face, furuncles, carbuncles of personal, trophic ulcers, burns, inflammatory processes of mucus shell of cavity of mouth, erosive stomatitis, to the blister and radial defeats of mucus shell of cavity of mouth, generalized periodontitis.

"Laevovinisolum", "Vinisolum", enters in the complement of preparations, medical bandages, ointments, emulsions.

Method of application. The staggered areas of mucus shell of cavity of mouth oil ointment or 20% by oily solution.

Side effects, contraindications. Not set.

Form of production. Small bottles are for 100 gs.

Storage. In a dry cool place.

Etonii

(Aetonium)

1,2- ethylene -bis -(N- dimethyl- karbdecyloksymetyl)- ammonium dichloride.

White powder, soluble in water.

Pharmacological properties. Stimulates healing of trophic processes wounds. The local anesthetic, bacteriostatic, bactericidal effect (inhibits the growth of *Staphylococcus aureus*, *Streptococcus*, *bacillus Fisher-Volkovich*) is the antidote staphylococcal toxin.

Indications for use. Catarrhal, erosive, aphthous ulcerative stomatitis, erythema multiforme exudative inflammatory process of periodontal, dental caries.

Method of application for irrigation, applications, oral trays using 0,5 % solution etoniyu. The same solution was administered into periodontal pockets tial for 10-15 minutes. You can use a 0,5 % emulsion etonis on vinilini. Etonii is a part of medical dressings, which are used in generalized periodontitis, 0,1-0,2 % solution is used for aerosol inhalation. For sealing caries -affected 7% used a paste. Etonii solutions prepared in isotonic sodium chloride solution.

Contraindications, side effects. Not reported.

Form of production . Powder, paste 20 g, 0,5% ointment 25 g, 1% ointment 25 g.

Storage: List B. In dry place at room temperature.

Dimeksid

(Dimehidum)

Dimethylsulfoxide.

Synonyms: Demasorb, Dromisol, Hyadur.

Colourless liquid with a pungent odor specific.

Pharmacological properties. The local anesthetic effect and antiinflammatory and antimicrobial effects, alters the sensitivity of microflora that is refractory to antibiotics. If you enter with antibiotics, it'll improve their diffusion in tissue.

Indications for use. Ulcerous-necrotic, inflammatory, inflammatory-dystrophic lesions of the oral cavity, arthritis, temporomandibular joint sores.

Dosage. Arthritis temporomandibular joint effective packs of 30, 50, 90 % aqueous solution, with ulcer- necrotic lesions of the oral cavity - Application 10-12 % solution for 10-15 min. In gingivitis, periodontitis applications perform with the same solution and injected it into the periodontal pockets turundas 10-15 minutes. After that, the clear impose hardening bandage for 1-2 days.

Side effects. Heartburn in place imposition compresses itching.

Contraindications. Pregnancy, severe renal parenchymal organs, angina, coma, heart attack, atherosclerosis.

Form of production . Bottles of 100 ml.

Storage. At room temperature.

Sodium usnynat

(Natrii usninas)

The sodium salt acidi usnini.

Synonym: Natrium usninicum.

Antibiotic substance isolated from the lichen Ramalina reticulate. Pale yellow shining crystalline powder. Soluble in hot water and alcohol.

Pharmacological properties. Bacteriostatic effect on gram-positive bacteria – *Staphylococcus aureus*, *Streptococcus*, anaerobes – *Pneumococcus*, *Mycobacterium tuberculosis*. It has a fungicidal effect. In the acidic environment of the activity of the drug dramatically reduced.

Indications for use. For the treatment of infected wounds and fresh, generalized periodontitis, necrotizing ulcerative lesions of the oral mucosa, with plastic surgery and burns tissue burns of faces, first and second degrees.

Dosage. In ulcerative necrotic lesions, gingivitis oral irrigation using 1% alcoholic solution of sodium usninatu (a teaspoon per cup of water) is used. In ulcerative necrotic lesions of the oral cavity for applications using 0,5% solution of castor oil mixed with 2% anestezin. Application impose bandage for 10-15 minutes. The solution of the drug is administered to

turundas in periodontal pockets for 10-15 minutes. After removing the clear cover turundas hardening bandage.

Adverse reactions, Contraindications. Not reported.

Form of production . Bottles of 50 ml of 1 % solution in ethanol, bottles of 25 ml of 0,5 % solution of castor oil, 50 ml of 0,3 % solution of balsam fir with the addition of 2% anestezin.

Storage: List B. In the dark place.

Antibiotic therapy

The microbial etiology of inflammatory periodontal diseases provides the rationale for the use of antimicrobial medication in periodontal therapy. As evidence for bacterial specificity in periodontitis has accumulated and strengthened over the past three decades, dentists have increased their use of systemic antibiotics in periodontal therapy. This concept is based on the premise that specific microorganisms cause destructive periodontal disease and that the antibiotic agent in vivo can exceed concentrations necessary to kill or inhibit the pathogen(s). Antibiotics are defined in this report as naturally occurring or synthetic organic substances that in low concentrations can inhibit or kill selective microorganisms. Antibiotics may be prescribed for periodontal patients who do not respond to conventional mechanical therapy, for patients with acute periodontal infections associated with systemic manifestations, for prophylaxis in medically compromised patients, and as an adjunct to surgical and nonsurgical periodontal therapy.

Systemic antibiotics (antibiotics taken by mouth) may be used in conjunction with other treatments to help rid the mouth of the bacteria causing periodontitis. Systemic antibiotics, however, are used conservatively because of the danger of a patient developing antimicrobial resistance. In fact, topical antibiotics are used more frequently than systemic antibiotics. Studies by the AAP reveal that taking antibiotics after undergoing scaling and root planing reduce the need for surgery by stopping the progression of the disease.

Systemic antibiotic administration may include the use of:

- Augmentin 500 mg: taken twice daily for at least eight days.
- Metronidazole (Flagyl), 500 mg: taken twice daily for at least eight days.
- Clindamycin (for penicillin-allergic patients), 300 mg: twice daily for at least eight days.
- Tetracycline 500 mg: taken for at least 14 days.
- Doxycycline 100 mg: taken twice daily for at least 14 days.

As mentioned previously, topical, or local antibiotic therapy, is another method of delivering antibiotics to the infected space in the gum tissue of the affected teeth. Here, the medication is applied directly to the affected area(s). This nonsurgical treatment approach is used mainly when scaling and root planing are considered insufficient to treat the infected tissue. The AGENTS that may be used include:

- Atridox (block drug)
- PerioChip (chlorhexidine)
- Periostat

Chapter 5.

Biogenic stimulators

Extract of Aloe Liquid for injections

(Extractum Aloes fluidum injectionibus)

The extract is obtained from the leaves of Aloe treelike. Liquid with a faint smell of fruits, with a bitter taste and color from light yellow to brownish red.

Pharmacological properties. Stimulates and accelerates the process of tissues regeneration.

Indications for use. generalized periodontitis; chronic diseases of oral mucosa, accompanied by trophic changes; trophic ulcers.

Dosage. In chronic gingivitis and Generalized periodontitis, the drug is administered by the way of electrophoresis (from the anode). The solution (1 ml of Aloe extract and 5 ml of distilled water) is prepared immediately before use. Course of treatment – 4-5 sessions.

Subcutaneous injections of 1 ml of the Aloe extract are prescribed daily to enhance the immunological reactivity of the organism. To anesthesize the area of injection of Aloe extract, 0,5 ml of 2% solution of novocaine are administered. Treatments - 35 injections. If necessary, treatment can be repeated.

Side effects. Pain is in the area of injection.

Contraindications. Diseases of cardiovascular system in the stage of decompensation, pregnancy (more than 7 months), gastrointestinal disorders, kidney diseases.

Form of production. Ampules (1 ml).

Storage. In the place protected from light.

Liniment of Aloe

(Linimentum Aloes)

The Liniment of Aloe consists of: 78,0 gramms of Aloe tree juice, sustained in a dark place at the temperature of 6°C during 12 days;

10,1 gramms of Castor oil; 10,1 gramms of emulsificator, Sorbic acid; 0,1 gramms of Eucalyptus butter, 1,5 gramms of Sodium Carboxymethylcellulose.

The Liniment of Aloe is a thick white or light-brown substance with a characteristic odor.

Pharmacological properties. Improves tissues regeneration and epithelization.

Indications for use. Generalized periodontitis, burns, erosive and ulcerative lesions of oral mucuos after radial therapy, lesions of the lips.

Method of application. The liniment is applied on the oral mucosa or lips in a thin layer 2-3 times a day, or installed in the periodontal pocket.

Side effects.: Not reported.

Indications for use. Generalized periodontitis, burns, erosive and ulcerative lesions of oral mucuos after radial therapy, lesions of the lips.

Method of application. The liniment is applied on the oral mucosa or lips in a thin layer 2-3 times a day, or installed in the periodontal pocket.

Side effects.: Not reported.

Form of production. Small orange glass bottles, containing 50 gramms of liniment.

Storage. In the place protected from light at temperature no more than 10°C (it is prohibited to freeze).

Aloe juice

(Succus Aloes)

Opaque light orange liquid with a bitter taste.

Pharmacological properties. Increase the regeneration and epithelization of tissues, has antiinflammatory properties, stimulates the protective mechanisms of an organism.

Indications for use. Generalized periodontitis, ulcerative-necrotic lesions of oral mucosa, burns, changes in the oral mucosa caused by irradiation.

Method of application. Applications of the medicine on oral mucosa for 10-15 min. Applications are changed 2-3 times. In case of extended lesions of oral mucosa aerosol inhalations, electrophoresis of Aloe juice are prescribed. In Generalized periodontitis, accompanied by colitis, enterocolitis, gastritis, chronic constipation, Aloe juice drinks are recommended , 1 teaspoon 2-3 times a day 20-30 min after meal. Course of treatment – 20-30 days.

Side effects. Not reported.

Form of production. Small bottles (100 ml).

Storage. In the cold place protected from light.

Syrup of Aloe with Iron

(Sirupus Aloes cum Ferro)

Consists of a solution of Chloride of Iron oxyde (20% Iron - 135 gramms, Hydrochloric dilued acid - 16 gramms, Citric acid - 4 gramms, Syrup of Aloe juice (1000 gramms). Opaque bitter liquid, with a sour taste.

Color – from light orange to brown.

Pharmacological properties. Iron stimulates blood formation, Aloe has a general strengthening effect, accelerating the processes of tissues regeneration.

Indications for use. Periodontosis, Generalized periodontitis, lesions of oral mucosa in patients with hypochromic anemia.

Method of application. For internal use, 1/2 or 1 teaspoon (on 1/4 glass of water) 3 times a day. Course of treatment – 15-30 days. The repeated courses are appointed during 1 week, monthly, up to the

normalization of Iron level in plasma of blood. Oral cavity should be carefully rinsed after the acceptance of medicine, to prevent formation of black plaque on the teeth.

Side effects. Constipation is possible in case of prolonged treatment.

Contraindications. Not reported.

Form of production. Small bottles, containing 100 gramms.

Storage. In a cold place.

Acemin

(Aseminum)

Sodium Salt of 2 - Acetylaminocapronic acid.

Synonym: Rlastenan.

Pharmacological properties. Qiucken the process of cleaning of the surface from necrotic masses, reduces exudation, enhances epithelialization process.

Indications for use. Periodontosis, ulcerative necrotic lesions of oral mucosa.

Method of application. For internal use 20 ml of a 25% solution 1-3 times a day during ½ - 2 weeks; as applications or in the form of ointment. Course of treatment 10-30 days. Ointment is placed on oral mucosa once in 2-3 days, as an application, 25% solution is applied daily.

Side effects. Not reported.

Contraindications. Infected wounds, pregnancy.

Form of production. Ampules (20 мл of a 25% solution); ointment (25 gramms).

Storage. In the dry place protected from light.

Biosed

(Biocedum)

Water extract of the canned grass of Sedum of maximum of L. Suter. Liquid of light yellow color with a specific odor.

Pharmacological properties. Biosed has a general tonic effect, improves metabolism, enhances tissue regeneration, has an antiinflammatory effect.

Indications. Periodontosis, Generalized periodontitis, inflammation of the oral mucosa.

Dosage. In the form of application on the affected area of the oral mucosa for 10-15 minutes: electrophoresis (15-20 sessions). Subcutaneous injections of 1-2 ml once a day (25-30 injections) for the stimulation of metabolism and regenerative processes. Second course can be assigned in 2-3 months.

Side effects. There may be redness, vesicular rash in the area of injection.

Contraindications. Gastritis, peptic ulcer and duodenal ulcer, accompanied by axillia; malignancy.

Form of production. Ampules (1ml).

Storage. In the place protected from light.

Peloidin

(Peloidinum)

The transparent liquid that is obtained by the process of extraction of the silt from the therapeutic muds.

Pharmacological properties. Stimulates the protective properties of the body, promotes epithelialization of the wounds.

Indications for use. Periodontosis, Generalized periodontitis, lesions of the oral mucosa in patients with gastric ulcer, duodenal ulcer, gastritis, colitis.

Dosage. For internal use 40-50 ml warm solutions 2 times a day, 1-2 hours before or 1-2 hours after meal. Drink in small sips for a few minutes. Treatment course - 10-15 days.

Method of application. Applied on the surface of the ulcer of the oral mucosa for 10-15 minutes 2-3 times a day.

Contraindications. Not reported.

Form of production. Bottles (500 ml).

Storage. In a cold, dark place.

Humizol

(Humisolum)

Solution of the fraction of Huminic acids of 0,01% medical sea muds from Haapsalusk in the isotonic solution of Sodium Chloride. Transparent yellowish liquid with a salt taste.

Pharmacological properties. Accelerates tissue regeneration.

Indications for use. Trophic ulcers of oral mucosa.

Method of application. Intramuscular injections (1-2 ml) one time a day. A course of treatment is 30 injections. Humizol is prescribed for the electrophoresis on the gums (in one session – 20-40 ml of Humizol). A cathode is imposed on the gums, anode – between shoulderblades or on a forearm. Electric current – 0,05-0,1 мА/cm^2, strength of current – 2-20 мА. Treatment can be repeated through 3-6 months.

Side effects. Not reported.

Contraindications. Diseases in the acute stage, with high fever, heart diseases in the stage of decompensation, ischemic heart disease, active form of tuberculosis, heavy diseases of the liver, kidneys, atherosclerosis, thyreotoxicosis, psychoneurosis, malignant tumours.

Form of production. Ampules (1-2 ml), ampules for electrophoresis (10 ml).

Storage. In the place protected from light.

Suspension of placenta

(Suspensio Placentae)

Suspension of the ground human placenta in isotonic Chloride solution (in the ratio – 1:2), reddish-brownish color with a specific smell.

Pharmacological properties. The medicine increase protective properties and accelerates wounds epithelization.

Indications for use. Lesions of oral mucosa.

Method of application. Subcutaneous injections of 2 ml of the suspension one time in 7-10 days. Before the injection, 1 ml of a 0,5% solution of Novocaine is injected in the area, treatment – 3-4 injections. Treatment can be repeated in 2-3 months.

Side effects. Not reported

Contraindications. Tuberculosis, skrofulosis n , glaucoma, cardiovascular, kidney diseases, and pregnancy.

Form of production. Ampules, 2 ml each.

Storage. In the place protected from light.

Extract of placenta (Extractum Placentae)

The medicine is produced from the freezed human placenta. A transparent liquid without a sediment.

Pharmacological properties. Accelerates the epithelization of wounds, increase protective properties of the organism.

Indications for use. Lesions of oral mucosa..

Method of application. Subcutaneous injections of 1 ml of the medicine daily or once in two days.

Side effects. Not reported.

Contraindications. Tuberculosis, glaucoma, cardiovascular diseases, unfrits, principally and pregnancy.

Form of production. Ampules, 1 ml each.

Storage. In the place protected from light.

Kalankhoye juice

(Succus Kalanchoes)

Get from fresh leaves of Kalanchoe pinnate; Lam. Persoon. A transparent fragrant liquid of yellowish color with an orange tint.

Pharmacological properties. A substance has a local antiinflammatory effect, promotes wound cleaning from a necrotizing plaque, decreases edema and stagnation, accelerates the healing of wounds and ulcers.

Indications for use. Generalized periodontitis, catarrhal and ulcerous gingivitis, stomatitis, decubital ulcers, burns of oral mucuos, caused by irradiation.

Method of application. Applications on the oral mucosa and gums; instillations in the periodontal pockets for 10-15 min. Before use the medicine should be warmed up to the body temperature. Applications are changed 2-3 times in one visit. In electrophoresis 5 ml of juice of Kalanchoe is diluted in the 5 ml of the distilled water. If a patient comlains on a heartburn, Kalanchoe is diluted by the 0,5-1 % Solution of Novocaine (correlation 1:1).

Side effects. The possible feeling of heartburn in the area of application of the medicine.

Unguentum "Vulnuzan"

(Unguentum "Vulnuzan")

Ointment contains extract of the Pomoriyskoho Lake salts (12 g) castor oil (35 g), lanolin (15 g), water (100 ml). It consists of macro and trace elements (Magnesium, Calcium, Potassium, Sodium, Iron, Manganese, Copper, Cobalt, Molybdenum, Zinc, Bismuth, Chlorine, Iodine, Selenium), Colloids and other organic substance.

Pharmacological properties. Accelerates the process of cleaning, granulation and epithelization of wound surface, has an antiinflammatory influence, stimulates phagocytosis and immunogenesis.

Indications for use. Ulcerative-necrotizing lesions of oral mucosa (necrotizing gingivitis, stomatitis, multiforme exsudative erythema, trophic ulcers), burns of oral mucosa, lesions caused by irradiation.

Method of application. Ointment is applied on the wound surface 2-3 times a day.

Side effects, Contraindications. Not reported.

Form of production. Tubes (45 gramms).

Storage. In a cool place.

Chonsurid

(Chonsuridum)

Chonsurid is produced from cattle's trachea. The dry porous mass of white color with a yellowish tint, when dissolved in water forms viscous solution.

Pharmacological properties. An active component of Chonsurid is Chondroitin Sulfuric acid, which takes part in the formation of the ground substance of connecting , accelerates the processes of epithelialization, regeneration, important in wound healing.

Indications for use. Slowly healing wounds; ulcers, aphthous stomatitis, erosive and ulcerative forms of Lichen planus, trophic ulcers, leukoplakia in the stages of ulceration, burns of oral mucosa, stomatitis, caused by radiation therapy.

Method of application. In a small bottle with Chonsurid (0,05-0,1g), just before application, 5 or 10 ml of 0,5% solution of Novocaine or Isotonic solution of Sodium Chloride are added. Content is carefully mixed, the viscous solution is applied on the wound surface 2-3 times a day. Course of treatment – 10-30 days.

Side effects. Not reported.

Contraindications. Acute inflammatory processes in oral cavity, necrotizing processes, surplus formation of granulation.

Form of production. In small bottles, 0,05 g.

Storage. In the dry place protected from light at temperature from 5 to 10° C.

Hyaloid membrane

(Corpus vitreum)

Colourless or yellow liquid. Prepared from the hyaloid membrane of eyes of cattle.

Pharmacological properties. Softens and resolves scars of the tissues, has an anesthetic effect on peripheral nerves, stimulates formation of bone tissue.

Indication for use. Glossodynia, neuralgia, neuritis of trigeminal nerve, scars of different origin, keratosis, ulcers and burns of oral mucosa.

Method of application. Subcutaneous or under a scar injections of 2 ml of the solution daily. Course of treatment – 8-25 days.

Side effects. Allergic reactions are possible.

Contraindications. Nephritis, cirrhosis, cardiovascular insufficiency, in the stage of decompensation, tumours, infectious diseases, acute inflammatory processes (abscesses, phlegmonas, osteomyelitis, arthritis, etc.).

Form of production. In ampules containing 2 ml.

Storage. In the cool place protected from light.

Plasmol

(Plasmolum)

Colorless or yellowish transparent liquid with a specific odor. Prepared from human blood.

Pharmacological properties. Plasmol has no specific desensitizing, anaesthetizing effects.

Indication for use. Generalized periodontitis, accompanied by bronchial asthma, duodenal and stomach ulcer, arthritis, neuralgia of trigeminal nerve, pain symptoms.

Method of application. Subcutaneous injections of the solution (1%) daily or once in two days. Course of treatment – 10 injections.

Side effects. Not reported.

Contraindications. Decompensation of cardiac activity, nephritis, endocarditis.

Form of production. In ampules containing 10 ml of the solution.

Storage. In the cool and protected from light place.

Solkoseryl

(Solcoseryl)

Deproteinized extract of blood received from cattle.

Pharmacological properties. Improves metabolism, accelerates tissue regeneration in case of ulcers, gangrene, bedsores, burns, radiaition lesions, skin grafts.

Indication for use. Ulcerative-necrotizing lesions of the oral mucosa (ulcerative and gangrenous gingivitis, stomatitis, Erythema multiforme in the stage of exudation, erosive and ulcerative form of Lichen planus, leukoplakia with ulceration, trophicl ulcers), ulcer lesion of oral mucosa, poisoning by the salts of heavy metals, burns; stomatitis, caused by irradiation.

Method of application. Intramuscular and intravenous injections, an ointment or jelly. Often combined general (injections) and topical applications. 2-4 ml of the medicine are injected once a day, locally Solkoseryl is applied, until granulations are formed, subsequently wound surface is treated with ointment until complete epithelialization.

Solkoseril (2-4 ml) is administered intramuscularly or intravenously in case of burns of oral mucosa and facial skin, ointment is applied on the affected area 3-4 times a day.

In case of radiation damage of facial skin Solkoseril is injected intramuscularly, 2 ml once a day, simultaneously Solkoseril ointment is applied 3-4 times a day.

Solkoseril ointment is used for the prevention of radiation injury. It is used for the lubrication of the skin and oral mucosa for the period of 2 weeks after exposure. The duration of treatment depends on the nature and severity of the process, 4-8 weeks in average. Treatment should be continued for 2-3 weeks in case of a tendency of the disease for reccurence, until complete epithelialization of the wound.

Side effects. Not reported.

Form of production. Ampules (2 ml); jelly, ointment in tubes (20 gramms).

Storage. In a cool place.

Apilac

(Apilacum)

Dry native broodmare jelly.

Pharmacological properties. Improves the trophicity of the tissues, improve the tonus of vessels, stimulates the function of the nervous system.

Indication for use. Generalized periodontitis, lesions of oral mucosa in patients with hypotension, neurotic symptoms, exhaustion, glossodynia, glossalgia.

Dosage. 1 tablet (0,01 g) under the tongue 3 times a day. The treatment course – 10-15 days.

Side effects. Excitation, insomnia.

Contraindications. Idiosyncrasy to medicine, Addison's disease.

Form of production. Powder, pills (0,01 gramms); rectal suppositories (0,005 and 0,001 gramms).

Storage. In a dry cool place.

Proposol

(Proposolum)

The drug is produced as an aerosol. Contains propolis (6 gramms), glycerol (14 gramms), 95% ethanol (80 gramms) and propellant (chladon). Transparent liquid of dark yellow color with a smell of spices.

Pharmacological properties. Possesses antiinflammatory, disinfection and analgetic effects.

Indications. Catarrhal, erosive, aphthous ulcerative gingivitis, stomatitis, glossitis, periodontitis, burns of the oral mucosa.

Dosage. Aerosol irrigations of the affected area 2 times a day, later 1-2 times a day until complete healing.

Contraindications. Not reported.

Form of production. Special bottles for aerosol irrigations (50 gramms).

Storage. At temperature 35 ° C far from heat and heating appliances.

Ointment "Propoceum"

(Unguentum "Propoceum").

Contains extract of propolis (10%).

Pharmacological properties. Possesses antiinflammatory, analgetic and disinfection effects, accelerates epithelization of the wound surface.

Indications for use. Catarrhal and erosive gingivitis, stomatitis, burns, ulcerative-necrotizing lesions of the oral mucosa.

Dosage. Ointment is applied with a thin layer on the affected area 1-2 times a day.

Contraindications. Not reported.

Form of production. Tubes (30gramms).

Storage. In a cool, dry place.

Chapter 6.

Medicines affecting blood coagulation, antihemorrhagic agents

6.1. Antihemorrhaic and hemostatic agents

Thrombin

(Trombinum)

White amorphous odourless powder. Soluble in the isotonic solution of Sodium Chloride.

Pharmacological properties. A natural component of blood coagulation. In human organizm is formed from prothrombin, activated by thromboplastin. The strength is expressed in units of activity (UA).

Indications for use. Is recommended to stop bleeding from small capillaries of oral cavity in thrombocytopenic purpura, aplastic anemia, to reduce bleeding of the gums in periodontal inflammation.

Dosage. Sterile ampule is opened before use and the powder dissolved in isotonic solution of Sodium Chloride.

Solution is applied on the gauze, wad and fibrin films and placed on the surface of the wound. After bleeding stops, applications are removed. Thrombin can be used for inhalations during 2-3 min.

Side effects. Not reported.

Contraindications. Arterial bleeding.

Form of production. Glass Bottles of 250 and 500 ml (1 000 and 3 000 UA) ampules of 10 ml (100 and 125 UA)

and 20 ml (250UA).

Storage, in a dry place at temperatures between 2 ad 10° C.

Hemofobin

(Hemofobinum)

3% Solution of pectins in isotonic solution of Sodium Chloride with addition of 1 % solution of Calcium Chloride.

Pharmacological properties. The main active ingredient is pectin. Increases blood coagulation.

Indications for use. Used as a haemostatic agent in surgical operations on the periodontal tissues (curettage, gingivotomy, gingivectomy and after the extraction of teeth).

Dosage. For internal use, 1 tablespoon 3 times a day (to prevent bleeding). When applied topically, wad of cotton or gause is moistened with Hemofobin solution and applied on the wound.

Adverse reactions, Contraindications. Not reported.

Form of production. Bottles of 150 ml of 3 % solution, ampule 1,5 % solution. Produced in Germany.

Storage. In a cool, dark place.

Ferakryl

(Ferakrylum)

Iron salt of polyacrylic acid. Transparent pink solution of sour-salty taste.

Pharmacological properties. Hemostatic agent of local action. Bactericidal and bacteriostatic activity against gram-positive and gram-negative microorganisms, has a weak local anesthetic effect. Hemostatic mechanism of action is based on its ability to bind with soluble proteins, resulting in the formation of a clot. Does not irritate tissues.

Indications for use. Used as a haemostatic agent in surgery on periodontal tissues (curettage, gingivotomy, gingivectomy, after extraction of teeth).

The way of application. A swab saturated with a solution of Ferakryl, pressed on the wound for 10-15 min to stop bleeding.

Side effects. Not reported.

Contraindications. Can not be used in conjunction with ε – aminocapronic acid.

Form of production. 1 ml ampules of 1 % solution.

Storage: List B. In dry and dark place.

Lahohilus

(Lagochilus inebrians)

Contains lahohilin, carotene, essential (volatile) oils, tannins.

Pharmacological properties. Infusion or tincture of the leaves of Lahohilus accelerates blood clotting, decreases vascular permeability, blood pressure, has a sedative effect.

Indications for use. Lahohilus is used to stop bleeding of oral mucosa, hemorrhages, and to prevent bleeding during periodontal surgery (curettage, gingivotomy, gingivectomy, plastic surgery), especially in patients with reduced blood clotting.

Dosage. In the postoperative period prescribed infusion (1:10 or 1:20) 1 tablespoon (15,0 ml) 3 times a day, 10% infusion (65 % alcohol) take 1 teaspoon on 1/4 cup of water 3-4 times a day. Lahohilus is administered as tablets containing 0,2 gramms of extract (1 tablet 3-4 times a day). In case of intensive bleeding of the gums infusion of Lahohilusa (1:10) is effective. Moisten the gauze, swabs or bandages with Lahohilus solution and apply on the bleeding regions of oral mucosa for 2-5 minutes.

Side effects. Tachycardia. Sometimes a laxative effect, nausea or drowsiness.

Contraindications. Not reported.

Form of production. Bottles of 50 ml of Lahohilus infusion, coated tablets (0,2 gramms) of Lahohilusa extract.

Storage. In a cool, dark place.

Arnica Flowers

(Flores Arnicae)

Contains essential oils, bitter arnitsyn, tannins, gums, minerals.

Pharmacological properties. Infusion and tincture of arnica have hemostatic, antiinflammatory, analgesic properties, promote epithelialization of wounds, increase bile secretion.

Indications for use. Gingivitis, stomatitis, periodontal diseases, to reduce bleeding during surgery on periodontal tissues (curettage, gingivotomy, gingivectomy, after extraction of teeth), especially at low coagulation of blood, in pathological conditions involving hemorrhagic syndrome (thrombocytopenic purpura, hypo- and aplastic anemia, thrombastenia, hemorrhagic vasculitis).

Dosage. Tincture (1:10 in 70% alcohol) administered 30-40 drops 2 times in 24 hours, before meal, extract (1:10) – 1 tablespoon (15,0 ml) 3 times a day Phyto-suspension, consisting of tinctures of arnica, calendula, eucalyptus and peach butter, is effective in any damage of periodontal tissues. Medication is used for applications on the gums or as an instillation into the periodontal pocket for 10 minutes.

Adverse reactions, Contraindications not reported.

Storage. In a cool, dry place.

Bark of Viburnum

(Cortex Viburni)

Contains 1-2%of viburnini, sugars, tannins, acetic, formic-isovalerianic- nylon- and capric acids, phytosterols.

Pharmacological properties. Narrows blood vessels, has an antiseptic and hemostatic effects.

Indications for use. Is used as a hemostatic and antiinflammatory medicine in inflammation of periodontal tissues, catarrhal and erosive stomatitis.

Dosage. A decoction of the bark of Viburnum (1:20) is used for mouthrinses and mouth baths.

Adverse reactions, Contraindications. Not reported.

Form of production. Shredded bark in boxes.

Storage. In a dry place.

Adipinat of Serotonin
(Serotonini adipinas)

5 Oxytriptaminadipinat.

White or yellow crystalline powder, odourless, easily soluble in water and badly dissolved in alcohol.

Pharmacological properties. Hemostatic agent that causes contraction of smooth muscles of internal organs, constriction of blood vessels. Increases the number of platelets in the peripheral blood and increase aggregation. Improves stability of capillaries.

Indications for use. Pathological changes of the oral mucosa accompanied by hemorrhagic syndrome (thrombocytopenic purpura, aplastic anemia, thrombasthenia , hemorrhagic vasculitis, hemorrhagic syndrome after treatment with cytostatic Agents of malignant tumors in oral cavity).

Dosage. Medicine is injected intravenously (100-150 ml of Isotonic solution of Sodium Chloride) or intramuscularly (5 ml of Novocaine solution), starting from 0,005 gramms, gradually increasing the dose to 0,01 gramms. Medication is injected 2 times a day intramuscularly at intervals of not less than 4 hours. The daily dose for adults – 0,015-0,02 gramms. Course of treatment – 10 days.

Side effects. In intravenous administration, pain at the site of injection is possible, abdomen pain, high blood pressure, discomfort in the heart area, hard breath, nausea, diarrhea, decrease of diuresis, while intramuscular injection – pain at the injection site.

Contraindications. Kidney diseases, accompanied by anuria, essential hypertension of II- III degree, acute thrombosis, angioedema, asthma, increased blood clotting.

Form of production . Powder, ampules (1 ml) of 1 % solution.

Storage: List B. In the dark place.

Adrokson

(Adroxonum)

Semykarbazon 1-methyl-3-hydroxy-2,3- dyhidroindol-5,6-quinone.

Synonyms: Adsal, Adchrolin, Adozon, Arenohul, Shromadren, Sangostasin.

Orange crystalline powder, odourless and tasteless. Poorly soluble in water and alcohol.

Pharmacological properties. It has a hemostatic effect in case of capillary bleeding, accompanied by increased vascular permeability. No effect on blood coagulation.

Indications for use. Injuries of the face and oral mucosa , for the prevention of postoperative bleeding and hematoma.

Dosage. Applied topically, intramuscularly and subcutaneously. Used in the form of applications on the bleeding surface, 0,025 % solution (1-2 ml). Intramuscularly and subcutaneously 1 ml of 0,025 % solution 1-4 times (before, after and during surgery) is injected. The drug can be administered topically and parenterally simultaneously.

Adverse reactions, Contraindications. Not reported.

Form of production . Ampules of 1 ml of 0,025 % solution.

Storage, List B. In the dark place.

Hemostatic Viscose

(Viscosum hemostaticum)

Pharmacological properties. Hemostatic viscose substance treated with Nitric Oxide.

Indications for use. Injuries of the face and oral mucosa.

Dosage. To stop capillary bleeding. Within 15-20 days is totally resolved in the organism.

Side effects. Not reported.

Contraindications. Infected wounds.

Form of production. Sterile wipes 5x10 cm in ampules.

Storage. In a cool dark place.

Hemostatic sponge

(Spongig hemostaticum)

Product of human plasma with added Calcium Chloride and Aminocaproic acid.

Pharmacological properties. Hemostatic agent, promotes clogging of bleeding vessels.

Indications, methods of use, side effects. The same as in Hemostatic viscose.

Form of production. Packages, one gramm each.

Storage. In the dark place at temperature of 20° C.

6.2. Anticoagulants of direct action

Heparin (Heparinum)

Synonims: Liguaemin, Rularin, Tromboliguin.

Acid mucopolysaccharide, produced by humans and animals basophilic cells. Obtained from the lungs of cattle. White with yellow tint amorphous powder, odourless, soluble in water.

Pharmacological properties. Effect directly factors of coagulation (due to negative charge, forms complexes with factors of coagulation, blocks biosynthesis of thrombin, reduces platelet aggregation. Improves blood circulation in the tissues, prevents the formation of blood clots in capillaries. Due to the chemical structure, heparin together with hyaluronic acid inhibits the activity of hyaluronidase. Activates phosphatase, catalase, renin, pepsin, trypsin, kallikrein, cathepsin.. Heparin is an antagonist to histamine. It reduces the content of lipids in the blood. During its resorptive action, Heparin dilates coronary vessels,

increases the contraction heart muscles and improves its oxygen supply. Heparin inhibits the production of aldosterone, vasopressin, growth hormone, ACTH, cortisone and is synergetic to nystatin, parathyroid hormone, thyroxine.

Indications for use. Allergic and ulceronecrotic lesions of the oral mucosa, Generalized periodontitis, in prevention of thromboembolic complications during surgery on the jaws and face.

Dosage. Is used in applications on oral mucosa, instillations into the periodontal pockets for 10-15 minutes alone or in combination with other AGENTS (Contrikal, Hydrocortisone), in electrophoresis. A mixture consists of 5000 UO of Ttrasilol, 300-500 UO of Heparin, 2,5 mg of Hydrocortisone. 1-1,5 ml of 1 % solution of Novocaine is added to achieve anesthetic effect. When Contrikal is used, 2000 UO of the drug are dissolved in 1 ml of isotonic solution of Sodium Chloride, 500 units of Heparin, 2,5 mg of Hydrocortisone and 1 ml of 1 % solution of Novocaine are added.

Side effects. Allergic reactions, hemorrhages.

Contraindications. Hemorrhagic diathesis, severe renal and liver dysfunctions, chronic leukemia, stomach ulcers, malignant tumors.

Form of production . Hermetically sealed ampules (5 ml) with medicine activity of 5 000, 10 000, 20 000 UO in 1 ml.

Storage. In a dry, cool, dark place.

Ointment of Heparin

(Unguentum Heparini)

Ingredients: Heparin (2500 UO), Benzocaine (1,0 g), Benzyl ester of Nicotinic acid (0,02 gramms), the base (25,0 gramms).

White substance of moderate density, containing 1,0 gramm of 100 UO of Heparin.

Pharmacological properties. It improves blood circulation in the tissues, reduces inflammation, has thrombolytic activity. Benzyl ester of

nicotinic acid dilates superficial blood vessels, improving the absorption of Heparin. Anesthezin has analgesic effect.

Indications for use. Generalized periodontitis, ulcerative necrotizing and allergic lesions of oral mucosa.

Dosage. Lubricates mucous membrane of the lips. The medication can be used with phonophoresis.

Side effects. Short burning in the region of application.

Contraindications. Can not be prescribed in case of reduced blood coagulation and thrombocytopenia.

Form of production . Tubes, containing 10 gramms of medication.

Storage. In a cool, dry place protected from light.

Neodikumarin

(Neodicumarinum)

Ethyl ester di- (4- oksykumarynil -3) –of Acetic acid.

Synonyms: Dicumacyl, Dicumaryl, Pelentan, Trombex.

White or yellowish crystalline powder, odourless. Insoluble in water and alcohol.

Pharmacological properties. Effective only in internal use. Vitamin K antagonist, violates the biosynthesis of prothrombin, proconvertin and other factors of coagulation (IX, X, XI). The optimum concentration is achieved in 2-3 hours, it is gradually increased and kept at a high level within 12-30 hours. Neodikumarin has slower and prolonged effect when compared with Heparin. The medication cumulates in the organizm. Prothrombin time returns to initial level in 2-10 days after the drug has been introduced.

Indications for use. Neodikumarin is recommended for the prevention of thromboembolitic complications during a surgery of maxillofacial region.

Dosage Treatment is conducted under the monitoring of prothrombin index, which should be 40-50 % of the initial level. 0,3 gramms of the medication 2 times a day is administered on the first day of

treatment, 0,15 gramms of the medication 3 times aday – on the second day, next days 0,2 gramms of Neodikumarin once a day (depending - on the level of prothrombin index) are prescribed. High doses for adults are: single – 0,3 gramms, daily doses – 0,9 gramms. The drug should be cancelled gradually, reducing the doses and increasing intervals between taking the medicine. Side effects. Possible hemorrhagic complications (hematuria, bleeding from the nasal cavity, oral mucosa, stomach, uterine), rarely - headache, nausea, diarrhea, allergic skin reactions.

Contraindications . Prothrombin index below 70 %, hemorrhagic diathesis, pregnancy, hepatic and kidney dysfunction. Should not be prescribed during menstruation and during the first days after delivery.

Form of production . Tablets, containing 0,1 gramms.

Storage: List A. In dark place.

Phepromaron

(Phepromaronum)

3 - (a-phenil-p-propioniletyl)-4-oxykumarin.

White or creamy white crystalline powder, odourless , insoluble in water, slightly soluble in alcohol.

Pharmacological properties. Phepromaron is an antagonist of Vitamin K, violates the synthesis of prothrombin, proconvertin, IX and X blood clotting factors. Has prolonged, longer than Neodikumarin, anticoagulant effect, and cumulates in human organizm.

Indications, Contraindications, side effects. The same as in Neodikumarin.

Dosage. For internal use, with individually selected doses. Prothrombin index should be controlled during the treatment. The initial dose is 0,03-0,05 gramms, maintenance dose is – 0,01-0,005 gramms in 24 or 48 hours.

Form of production . Tablets, containing 0,01 gramms.

Storage: list A. In the place protected from light.

Fenilin

(Phenulinum)

2 Fenilindandion -1 , 3.

Synonyms: Atrombon, Danilone, Nebulin, Trombosol.

Crystalline white or cream-coloured powder, not soluble in water and alcohol.

Pharmacological properties. The medication causes hypoprothrombinemia, changing formation of prothrombin in the liver and production of VII, IX and X blood clotting factors. Active only in internal use, after 8-10 hours after intake, the maximum effect occurs within 24-30 hours after ingestion.

Indications, Contraindications, side effects. (See Neodikumarin).

Dosage . For internal use. 0,12-0,18 gramms (in 3-4 intakes) are recommended on the first day of administration, on the second day –0,09-0,15 gramms, followed by 0,03-0,06 gramms a day during the period of treatment (protrombin index should be maintained at 50-40%). 0,03 gramms of Fenilin 1-2 times a day are appointed. for the prevention of thromboembolic complications.

Form of production . Powders, pills (0,03 gramms).

Storage: List A. In the dark place.

FIBRINOLYTICS

AGENTS of this group are used to remove blood clots without surgery. The course of treatment depends on the time of detection (the best effect is achieved in first 6 hours of treatment), the area of the drug's penetration and location of a lesion.

6.3. Fibrinolytic medications of the first generation

Streptokinase

(Streptokinasa)

The most common fibrinolityc, the product of metabolism of fibrinolysin , which forms a complex with plasminogen. This complex

activates transition of plasminogen into plasmin. Activates both forms of plasminogen – pure form and fibrin-bound plasminogen.

The drug can cause allergic reactions, that is why, during the first application thet test of tolerance to streptokinase should be carried out.

STREPTASE - blisters, containing 100 000, 250 000, 750 000, 1 500 000 IU.

AWELYSIN - ampules (lyophilized powder), containing 100 000, 250 000, 600 000, 750 000, 1 500 000 IU.

KABIKINASE - ampules (lyophilized powder) 100 000, containing 250 000, 600 000, 750 000, 1 500 000 IU.

Urokinase

(Urokinasa)

Native protease, a proteolytic enzyme, derived from human urine. It is a natural activator of plasminogen in its conversion to plasmin, that is why, it does not cause allergic reactions.

UKIDAN – ampules: 5000, 25 000, 100 000, 250 000, 500 000, 1 000 000 IU.

UROKINASE HS KABI – blisters: of 50 000, 250 000, 500 000 IU.

ASTOSOL UROKINASE – blisters: 100 000, 600 000 IU.

Antistreplaza

(Antistreplasa)

The combination of Streptokinase and Lys-plasminogen, which directly activates plasminogen. Is applied intravenously one time or can be injected once more in 12 hours.

Dystreptaza

(Dystreptasa) and

Varidaza

(Varidase)

AGENTS that combine Sreptokinase with proteolytic enzyme streptodornaze, which dissolves purulent exudate. Is produced in tablets.

Indications for use. Purulent inflammation of oral mucosa, Periodontitis, blockage of ducts of salivary glands. The tablet is held under the tongue or in the place of mucosal damage to the complete resorption (3-5 min).

Do not swallow! Course of treatment: 5 days (one tablet a day).

Contraindications. Sutures after a surgery. High blood pressure. Bleeding of the gums. Rheumatism.

6.4. Fibrinolytic medications of second generation

Tissue activator of plasminogen

(rt-PA alteplaza)

Obtained by genetic engineering. Endogenous rt-PA in an organizm is in a free condition or bound with inhibitors, activating plasminogen connected with fibrin. rt-PA does not cause allergic reactions.

Indications for use. Myocardial infarction.

Application. Intravenously 0,01 gramms, followed by 0,09 gramms in next 90 min. (0,00075 g/kg).

Trade name: ASTILYSA-blisters (dry substance + solvent) 0,02 gramms, 0,05 gramms.

Prourokinaza

(Prourokinasa - scu-PA, Saruplasa)

One chain type plasminogen activator urokinase. Influenced by plasmin or kallikrein converted into double-circuit (active) form of production urokinase.

Indications for use. Myocardial infarction.

Application dovenno in an initial dose of 0,002 g, the next dose of 0,06 for 60 min. Simultaneously administered heparin.

The drug: Saruplasa - blisters (dry substance + solvent) 0,01.

6.5. Defibrinolitic medications

AGENTS of this group decompose fibrinogen into smaller particles that can not form clots, reducing the level of fibrinogen in the blood.

AGENTS:

ANSORD - an enzyme obtained from Malay snake's (Agkistrodon rhodostoma) venom. The drug reduces the level of Fibrinogen within 12 hours. Is prescribed intravenously with medicine dropper during 6-12 hours. Dose: 2-3 IU/kg.

BATROKSOBIN - derived from South American (Vathrops atroh) snake's venom. The drug reduces the content of fibrinogen in the blood after 6-10 hours when administered intravenously, and after 1-2 days in subcutaneous use. Fibrinogen is excreted from an organizm by the liver.

6.6. Antihistamine and Anti-allergy medicines

Histahlobulin
(Hystaglobulinum)

Synonym: Histahlobin.

Colourless, clear liquid, containing 1 ml of 0,1 mg of Histamine Chloride and 6 mg of gamma globulin from human blood (according to the protein content).

Pharmacological properties. Histaglobulin introduction into the human organizm is followed by the production of antihistamine antibodies and increases ability of blood serum to inactivate free histamine. The drug prevents the development of allergic reactions, reduces the toxicity of histamine, removes spasms of smooth muscle, reduces capillary permeability, tissue swelling, increases blood pressure levels, has antiinflammatory effects.

Indications for use. Allergic diseases (Quinnke's oedema, erythema multiforme, chronic recurrent aphthous stomatitis, drug allergies).

Dosage. The medication is injected subcutaneously. The first injection (in the region of shoulder) 1 ml is administered, with subsequent injections – 4-2 ml.

The interval between injections - 3 days. Before the introduction of Histaglobulin test of biological compatibility is performed (0,1-0,2 ml.of the medicine is injected subcutaneously). The medication should be applied with caution. If a patient undergoes hormonal therapy, Histaglobulin is administered no earlier than in 1-2 months. In serious conditions 10 injections of Histaglobulin are recommended. The course of treatment can be repeated after 1-2 months.

Side effects. Dizziness, hyperemia in the area of injection.

Contraindications. Fever, menstruation, treatment with corticosteroids.

Form of production . Ampules of 3 ml.

Storage. In the dark place at a temperature between 2 to 8° C.

Diazolin

(Diazolinum)

3-Methyl-9-benzyl-1,2,3,4- tehrahidrokarbolinu naphthalene -1,5-dysulfonat.

Synonyms: Insidal, Mebhudholin, Napadisylas, Omeril.

The white crystalline powder with a cream color, insoluble in water and organic solvents.

Pharmacological properties. Diazolin removes spasms of smooth muscles caused by histamine, reduces capillary permeability, prevents allergic reactions and has antiinflammatory effect. The medication relieves swelling of tissues, increases blood pressure, which was lowered under the influence of histamine, has no sedative and hypnotic effects.

Indications for use. Quinke’s oedema, erythema multiforme, chronic recurrent aphthous stomatitis, allergic stomatitis, generalized periodontitis and other diseases involving allergic component .

Dosage. For internal use: 0,05-0,1-0,2 gramms 1-2 times a day after meals. The course of treatment – 2-3 weeks. Locally the medication is used in combination with other Agents (ascorbic acid, hydrocortisone, ephedrine) for thermal inhalation. 10 inhalation in the course of treatment.

Side effects. Nausea, vomiting, and abdominal pain.

Contraindications. Inflammatory processes in the organs of digestive system , gastric ulcer and duodenal ulcer.

Form of production . Powder, coated tablets (0,05 and 0,1 gramms).

Storage: List B. In the place, protected from moisture and light.

Dimedrol (Dimedrolum)

b-Dymetylaminoetyli ester hydrochloridi benzhidroli.

Synonym: Alledryl, Allergan B, Alnidryl, Benadryl, Dimedryl, Dimidril, Restamin.

The white crystalline powder with a bitter taste. Causes numbness of the tongue. Soluble in water and alcohol.

Pharmacological properties. Selectively blocks the histamine H_1-receptors. It reduces the toxicity of histamine, reducing capillary permeability and tissues edema. It inhibits the hypotensive effect of histamine, prevents allergic reactions and relieve their course. Removes spasms of smooth muscles. The medicine has analgesic, irritating, mild neuroleptic, sedative and antiemetic, cholinobloking, adrenomimetic effects. Enhances the effect of hypnotics and sedatives. Dimedrol is active during 4-6 hours.

Indications for use. Allergic diseases (Quinke’s oedema, erythema multiforme, chronic recurrent aphthous stomatitis, allergic stomatitis), in nonspecific hyposensitization of the organism in generalized periodontitis, lesions of the oral mucosa, radiation sickness, burns of oral mucosa, to prevent the development of edema before- and after surgery in maxillofacial region. Dimedrol is included in the compositions, used for premedication.

Dosage. 1 tablet (0,03 or 0,05gramms) 1-3 times a day. The treatment course - 10-15 days. Intramuscular and intravenous injections (1-5 ml of 1 % solution). For intravenous injection Dimedrol should be dissolved in 75-100 ml of the solution of Sodium Chloride (is introduced by medicine dropper). 1 % solution of Dimedrol is used for applications on affected regions of oral mucosa, oral baths and aerosol inhalations. In premedication Dimedrol is combined with other medicines: Dimedrol and Promedolum (0,02 gramms each), Aminazine and Heksoniy (0,1rramms), Analgin (0,4 grammsa) and Phenacetin (0,2 gramms). Is taken one hour before surgery.

Side effects. Dizziness, headache, dryness of the oral mucosa and drowsiness, malaise.

Contraindications. Not recommended for persons whose occupations require a quick response.

Form of production . Powder, tablets 0,02 and 0,05 gramms, ampules of 1% solution, rectal suppositories 0,01 gramms (for children), sticks 0,05.

Storage: List B. In a dry, cool and dark place.

Diprazini

(Diprazinum)

10-(2-dimethylaminopropil) -phenothiazine hydrochloride.

Synonym: Allergan, Atosil, Fargan, Pipolfen, Promethazine, Phenergan.

White crystal powder, easily soluble in water and alcohol. Powder and its aqueous solutions change colour , become dark under the influence of light.

Pharmacological properties. Blocks H_1- receptors. Reduces smooth muscle spasm, edema caused by histamine, capillary permeability, reduces allergic reactions and prevents their development. Well absorbed and has a sedative effect, potentiates the effect of narcotics, hypnotics, analgesics

AGENTS and has adreno-, cholinolytic effects. It lowers body temperature and prevents vomiting.

Indications for use. Quinke's oedema, erythema multiforme, chronic recurrent aphthous stomatitis, allergic stomatitis, periodontitis with allergic component, for prevention of postoperative complications and reduce their manifestations, also used for sedation as synergics of local anesthetics.

Dosage. For internal use 0,025 gramms 2-3 times a day. Intra muscular 1-2 ml of 2,5 % solution. Intravenously 2 ml of 2,5 % solution as the component of solutions with spasmolytic effect. The course of treatment – 2-3 weeks.

Side effects. Moderate anesthesia of the oral mucosa, dry mouth, nausea. When administered intramuscular - painful infiltrates at the region of injection, when used intravenously – rapid decrease of blood pressure.

Contraindications. Diseases of the liver and kidneys, alcohol intoxication, in drivers during work.

Form of production . Powder, coated tablets 0,005 gramms, ampules – 2 ml of 2,5 % solution. Produced in Hungary called "Pipolfen".

Storage: List B. In dry the dark place.

Dymebon

(Dimebonum)

Dihydrochloride 9-[2,3- methylpyridine-5]-3,6 -dimethyl-1,2,3,4-tetra hammakarbolinu dihydrochloride.

Pharmacological properties. Indications for use see Tavegil.

Dosage. For internal use 0,01-0,02 gramms 2-3 times a day. Course of treatment – 5-12 days.

Side effects. Numbness of the mucous membranes of the oral cavity, sedation.

Contraindications. Do not take during driving and other professions that require qiuck response.

Form of production . Tablets 0,01 gramms

Storage: List B. In the sealed bottles of dark glass.

Zaditen

(Zaditenum)

4,9-dyhidro-4-(1-methyl-4-OH-1 piperydyniliden - benzo[4,5]cyklohepta (1,2-b) thiophen-10-on.

Synonym: Ketotifenum.

Pharmacological properties. Inhibits the release of histamine and other mediators from basophilic cells. Has antyanaphylactic property, prevents the development of allergic reactions or reduce their course, exhibits sedative and hypnotic effects.

Indications for use. Quinke's oedema, erythema multiforme, chronic recurrent aphthous stomatitis, allergic stomatitis, periodontitis with allergic component.

Dosage . For internal use, capsules, tablets 0,001 gramms 2 times a day with meals (morning and evening). The dose may be increased to 2 mg 2 times a day.

Side effects. Possible reduction of platelets number.

Contraindications. Pregnancy, can not be assigned with antidiabetic AGENTS, can cause thrombocytopenia.

Form of production . Capsules, tablets (0,001 gramms). Manufactured in India.

Storage: List B. In dry and dark place.

Tavegil

(Tavegilum)

1 -Methyl- 2-[2 - (6-methyl- para- hlorbenzhidryloksy)- ethyl] of-pyrrolidine .

Synonyms: Agasten, Clemastin, Tavegyl, Tavist.

Pharmacological properties. The effect is similar of that of Dimedrol but stronger. Duration of action – 8-12 hours Gives moderate sedation. strengthens influence of sleeping-pills and alcohol.

Indications for use. Anaphylactic shock, Quinke's oedema, erythema multiforme, chronic recurrent aphthous stomatitis, allergic stomatitis, periodontitis with allergic component, as a preventive treatment before the introduction of radiopaque substances.

Method of application. For internal use 1 mg 2 times a day. Day's dose can be increased to 3-4 pills. Intramuscular and subcutaneous injections – 2 ml in the morning and evening.

Side effects. Dryness in oral cavity, constipation, pain in the chest, nausea.

Contraindications. Do not take during driving and other professions that require qiuck response.

Can not be taken with alcohol.

Form of production. Pills (0,001gramms), ampules – 2 ml of 0,1% to solution. Made in Hungary.

Storage: In the dry place protected from light.

Fenkarol

(Phencarolum)

Hinuklidyl -3- dyfenilkarbinolu hydrochloride.

Synonyms : Quifenadine. Quifenadinum.

White crystalline powder, odourless, with bitter taste. Insoluble in water and alcohol.

Pharmacological properties. Blocks H_1 receptors. Removes spasms of smooth muscles, reduces capillaries permeability.

Indications for use. Quinke's oedema, erythema multiforme, chronic recurrent aphthous stomatitis, allergic stomatitis, periodontitis with allergic component .

Dosage. Assign after meals – 0,025-0,05 gramms during 10-20 days. If necessary, the treatment can be repeated. Do not take during driving and other professions that require quick responses.

Side effects. Dryness in oral cavity, dyspeptic symptoms.

Contraindications. Severe cardiovascular diseases, duodenal and stomach ulcers, abnormal liver function, first trimester of pregnancy.

Form of production . Powder, pills – 0,025 and 0,01gramms.

Storage: List B. In the dark place.

6.7. Steroid antiinflammatory agents

Cortisone acetate

(Cortisoni acetas)

Prehaen -4 -diol -17b ,21- trion -3,11,20,21 -acetate.

Synonyms: Adreson, Sortadren, Sortelan, Sohtisate.

White or yellow crystalline powder, insoluble in water, poorly soluble in alcohol.

Pharmacological properties. It has a pronounced antiinflammatory , desensitizing, immunosuppressive and antitoxic and antiallergic effects. Inhibits the development of lymphoid and connective tissue. Affects carbohydrate and protein metabolism, inhibits the activity of hyaluronidase, reduces the permeability of capillary walls, increases the excretion of nitrogen in urine, inhibits the synthesis and accelerates protein breakdown, increases the level of glucose in blood.

Indications for use. Exfoliative cheilitis, erosive and pemphigoid forms of lichen planus, erythema multiforme, allergic manifestations on the oral mucosa.

Dosage. For internal use – 0,05-0,1 gramms 2-3 times a day during the first days of treatment, then the dose is gradually reduced to a minimum – 0,025 gramms once a day. In Pemphygoid 0,25-0,3 gramms of the drug are appointed per day. The highest dose : single – 0,15 gramms, daily dose – 0,3 gramms.

After a single injection of the drug effect lasts for 6-8 hours.

Cortisone acetate strongly inhibits the biosynthesis of hormones of adrenal cortex. Therefore, it is recommended to take with Corticotropin for injections.

Strict medical supervision is necessary during the treatment with Cortisone acetate.

Side effects. Long-term use of the drug may cause ulcers of gastrointestinal tract, Itsenko-Kushing's obesity, menstrual disorders, hemorrhagic pancreatitis, steroid diabetes, mental disorders, retention of sodium and water (edema) in the organism, osteoporosis.

Contraindications. Myocardial infarction, peptic ulcer disease, hypertension, diabetes, herpes, viral disease of eyes, tuberculosis, pregnancy, syphilis.

Form of production . Tablets – 0,025 gramms, suspension in bottles, containing 10 ml (1 ml contains 0,025 gramms of Cortisone acetate).

Storage, List B. In the dark place.

Hydrocortisone acetate

(Hydrocortisoni acetas)

17 Oxykorticosteronum.

White crystalline powder, insoluble in water.

Pharmacological properties. See – Cortisone acetate.

Indications for use. Erosive and pemphigoid forms of Lichen Planus, Pemphigus, radiation stomatitis and cancer caused by cytotoxic Agents, actyno-allergic eczematous cheilitis.

Dosage. In allergic lesions of oral mucosa, Lichen Planus, Pemphigus affected area is treated with 1% or 2,5% Hydrocortisone acetate ointment 3-4 times a day. In case of pemphigoid and ulcerative forms of Lichen Planus and Pemphigus injections of hydrocortisone acetate (25 mg) are carried on, infiltrating the area under the lesion (3-4 times).

Side effects. Prolonged use may cause Itsenko- Cushing's syndrome, ulceration of gastrointestinal tract, obesity, menstrual disorders, hemorrhagic pancreatitis, steroid diabetes, mental disorders, retention of sodium and water in the organism, osteoporosis.

Contraindications. Not recommended for internal use in case of myocardial infarction, gastric ulcer, hypertension, diabetes, herpes, viral diseases, tuberculosis, syphilis and pregnancy.

Form of production . Ampules – 2 ml of 2,5 % suspension or suspension in bottles of 50 ml (0,125 gramms), 0,5 % ophthalmic ointment 2,5 gramms (made in Hungary).

Storage: List B. In the dark place.

Hydrocortisone hemisukcynat

(Hydrocortisoni hemisuccinas)

Pharmacological properties, indications, method of use, side effects, Contraindications, storage. See – hydrocortisone acetate.

Form of production. Ampules 0,025 and 0,1 gramms, bottles – 0,1 gramms.

Dexamethasone

(Dexametazonum)

9b -Fluoro- 16b - methylprednisolone.

Synonyms: Amradexone, Cortadex, Decacort, Dexazone, Hexadrol.

A synthetic analogue of the natural hormone of the cortex of adrenal gland (cortisone, hydrocortisone) contains fluorine atom. White crystalline powder, practically insoluble in water and poorly soluble in alcohol.

Pharmacological properties. Possesses anti-allergic, antiinflammatory antishock effects. The presence of the fluorine atom increased activity of the medication. Do not violate the water-salt metabolism, has no effect on blood pressure.

Indications for use. Pemphigus, erosive and pemphigoid form of Lichen Planus, Duhring 's disease, Melkersson- Rosenthal syndrome, Lupus erythematosus, allergic reactions of immediate type, shock, loss of consciousness. The treatment is done under medical supervision.

Dosage. For internal use – 0,001 gramms 2-3 times a day after meals. After improvement of general condition the dose is gradually reduced to 0,0005 gramms. At the end of treatment recommended several

injections (3-5) of Corticotropin are recommended. In emergency conditions (shock, allergic reaction) drug is administered intravenously, 1-2 ml per day. After achievement of therapeutic effect the drug is administered orally.

Side effects . Prolonged use may result in Itsenko-Cushing's disease, obesity, menstrual irregularities, peptic ulcer, hemorrhagic pancreatitis, steroid diabetes, mental disorders, osteoporosis.

Contraindications . Myocardial infarction, peptic ulcers, hypertension, diabetes, herpes, viral eye disease, tuberculosis, syphilis and pregnancy.

Form of production. Tablets, containing 0,0005 gramms, 1 ml ampules containing 0,004 gramms of the drug. Dexamethasone phosphate injections are produced in Yugoslavia.

Storage: List B. In a dry place, protected from light.

Prednisone

(Prednisolonum)

Prehnadiyen -1,4-Triol -11v, 17b, 21-dione-3,20, or g-dehidrokortyzon.

Synonyms: Antisolon, Dasortin, Dehudrosortisol, Metasortolon.

White or yellow crystalline powder , poorly soluble in water, easily soluble in alcohol .

Pharmacological properties. Similar to Hydrocortisone, but several times stronger. The medication has antiinflammatory, antiallergic effect.

Affects the water-salt metabolism less than hydrocortisone.

Indications for use. First aid in case of emergency – shock, collapse, asthma; in the treatment of Pemphigus, exudative form of Erythema multiforme, Lupus Erythematosus, in case of pemphigoid and ulcerative forms of Lichen Planus Duhring's dermatitis, Melkersson-Rosenthal's syndrome, Chronic Eczematous Cheilitis.

Dosage. For internal use in case of Pemphigoid, starting with a shock dose (50 mg) - to cease rash, then gradually reduce the daily dose

three times (10-15 mg). This dose of medication is administered within a few months (years). In severe Erythema Multiforme exudative form administered 20-30 mg daily during a week. After a week the dose is reduced every 3 days for 5 mg. In case of pemphigoid and ulcerative forms of Lichen Planus and Pemphigus prescribed 5 mg of the medicine 4 times a day until healing. An 0,5% ointment can be applied on the lesions of oral mucosa.

In Duhring's dermatitis, Lupus Erythematosus, Melkersson – Rosenthal's syndrome 20-30 mg of the medication is administered during 10-12 days. After this, the dose is reduced every 5-7 days to 5 mg. In case of emergency, when the levels of corticosteroids in blood are immediately increased (allergic conditions, shock, fainting) Prednisolone is administered intramuscularly or intravenously (drip method), single dose containing 15-30mg.

Side effects. Edema, osteoporosis, steroid diabetes, suppression of adrenal cortex, mental disorders, hypertension, stomach and intestinal bleeding.

Contraindications. Stomach and duodenal ulcers, hypertension, pregnancy, Itsenko-Cushing's syndrome, syphilis, tuberculosis, diabetes, circulatory failure, old age.

Form of production . Pills – 0,005 gramms, 0,5 % ointment in tubes of 10,0 gramms, 1 ml.ampules of 3% solution of the medication.

Storage: List B. In the dark place.

Kenakort

(Kenakort)

9b- fluoro -16b- oksyprednizolon,

Synonyms: Albacort, Flogicort, Kenalog, Omcilon, Polarton, Polcortolon, Triamcinolonum.

White crystalline powder, odourless and tasteless. Poorly soluble in water, well soluble in alcohol.

Pharmacological properties. Has antiinflammatory (40 times more active than Hydrocortisone) antiallergic, desensitizing effects. Sometimes effective when other corticosteroids have no effect.

Poorly absorbed when applied externally.

Indications for use. Pemphigus, erosive and pemphigoid form of Lichen Planus, Erythema Multiforme exudative form, Lupus Erythematosus, burns of the face and mouth.

Dosage. For internal use – 0,008-0,02 gramms 3-4 times a day. After a therapeutic effect the dose is gradually reduced to 0,002 gramms (every 2-3 days 0,001 gramms). Lesions of the oral mucosa are treated by ointment "Lederkort" containing 0,1% Triamcinolone.

Side effects. Prolonged use may cause obesity, Itsenko- Cushing's syndrome, menstrual irregularities, gastro-intestinal ulcers, hemorrhagic pancreatitis, steroid diabetes, mental disorders, osteoporosis.

Contraindications. Stomach and duodenal ulcers, syphilis, tuberculosis, diabetes, atherosclerosis, angina pectoris, hypertension, glaucoma.

Form of production . Tablets, containing 0,004 gramms, Ointment "Lederkort" made in Germany, 0,1% ointment and cream produced in Poland.

Storage: List B. In the dark place.

Kenalog-40

(Kenalogum-40)

Synonyms: Albacort, Flogicort, Kenalog, Omcilon, Polarton, Polcortolon, Triamcinolonum.

Pharmacological properties. Has the well expressed protracted antiinflammatory and antiallergic action, calms an itch.

Indications for use. Allergic stomatitis, cheilitis, erosive and pemphigoid form of Lichen Planus, Pemphigus, syndrome of Mel'kersona-Rozental.

Method of application. For application on oral mucosa and lips (3-4 times a day).

Side effects. Not reported.

Form of production. Ampules for 1,0 мл of suspension which contains Tгiamcinolonum, made in Germany.

0,1% Ointment "Ftorokort" in tubes (15 gramms), made in Hungary.

Ointment "Kenakomb" contains Tгiamcinolonum - 0,25%, Neomycinum - 0,25%, produce in Germany, ointment "Kenalog SF", composition of Tгiamcinalon acetonid (0,1%), Neomycin, Gramicydin, Nistatin (SFRYU).

Storage: In the dark place protected from light.

Methypred

(Methypred)

6 -a - methylprednisolone.

Synonyms: Medeson, Medrone, Methylprednisolon, Promacortine, Urbason.

Pharmacological properties. Acts as prednisolone. Slowly absorbed by intramuscular administration, has a prolonged effect. Does not produce psychotropic effects, effects metabolic processes to lower extent. Indications for use. See Prednisolone.

Dosage. In shock, collapse, allergic reactions injected intramuscularly or intravenously 20-40 mg for adults and 8-16 mg for children.

In Duhring's dermatitis, Lupus Erythematosus, Melkersson – Rosenthal's syndrome the drug is administered orally. Start with 12-40 mg daily, gradually reduce the dose to 4,12 mg.

Side effects. Eczema, osteoporosis, steroid diabetes, suppression of adrenal cortex, mental disorders, hypertension, stomach and intestinal bleeding.

Contraindications. Peptic and duodenal ulcers, hypertension, Itsenko-Cushing's syndrome, syphilis, tuberculosis, diabetes, pregnancy, circulatory failure, old age.

Form of production . Tablets – 0,004 gramms, 0,025 ampules (manufactured in Finland).

Storage: List B. In the dark place.

Synaflan

(Synaflanum)

Synonyms: Flucinar, Flucort, Flucinaloni acetonidura, Synalar, Synandon.

Corticosteroids containing fluoride. In its structure similar to prednisolone, dexamethasone, triamcinolone acetone go.

Pharmacological properties. It has antiinflammatory, antiallergic in action soothes itching. Poorly absorbed, so it leads to complications like other corticosteroids.

Indications for use. Allergic lesions of the oral mucosa , pemphigus, erosive and ulcerative forms, lichen planus, lupus erythematosus, erythema multiforme exudative . With caution to children, especially girls in puberty.

Dosage . After irrigation solutions antiseptics - oral mucosa treated with cotton or gauze , swab soaked with ointment " Synaflan" 3-4 times a day.

Side effects. In rare cases, there are dryness, itching, burning of the oral mucosa, especially in areas of damage. Contraindications . Candidal lesions of the oral mucosa , tuberculosis ,

viral infections (chickenpox, shingles) , syphilis, massive lesions of the oral mucosa.

Form of production . Ointment in tubes of 15,0 g, containing 0,025 % drug liniment 0,025 % per pack of 15,0 g In Poland, an ointment made called "Flutsynar" (in tubes of 15,0 g) in Yugoslavia, 'Synalar' (in tubes of 15,0 g).

Storage: List B. In the dark place.

The systemic and topical use of antiinflammatory AGENTS in the treatment of gingivitis and periodontitis has been practised for many years. Steroids – as a group – were found to inhibit an enzyme (phospholipase A2) which releases arachidonic acid from lipid membranes. Arachidonic acid is subsequently oxidized by cyclooxygenases or lipoxygenases (arachidonic acid cascade) to a series of inflammogenic products, such as prostaglandins and leukotrienes. Since arachidonic acid is an unsaturated C-20 (eicosanoic) acid, the oxidized derivates are today known as eicosanoids.

Because of numerous side effects steroids are not widely used in the antiinflammatory treatment of periodontal diseases.

6.8. Non-steroidal antiinflammatory agents (nsaids)

NSAIDs (non-steroidal antiinflammatory AGENTS) function differently from steroids. They do not inhibit release of arachidonic acid but interfere with the subsequent oxidative processes, thereby reducing (or eliminating) the generation of inflammogenic eicosanoids.

One of the most important aspects of the use of NSAIDs is their influence on the destructive effect of periodontal disease on bone loss. Any reduction of inflammation as measured by a gingival index, crevicular fluid or a bleeding index does not necessarily correlate with the bone loss.

The most widely used NSAIDs, such as aspirin, indometacin or ibuprofen, interfere with the cyclooxygenase pathway which leads from

arachidonic acid to the prostaglandins. Some prostaglandins reduce leukocyte chemotaxis, while prostaglandin F (PGF) enhances chemotaxis. The related compounds prostacyclin (PGI2) and thromboxane (TXA2) are also antagonistic to each other, the former is a potent vasodilator, while the latter acts as a vasoconstrictor.

The effect of NSAIDs can be also associated with their specific effects in reducing the vascularity and permeability of small blood vessels (Heasman and Seymour, 1990). It has been also shown that NSAIDs (indometacin especially, used locally as 5% ointment in periodontal dressings reduces the content of C-reactive protein in the periodontal foci of inflammation, which is considered the marker of the inflammatory process activity (Deneha, 2000).

Commonly-used dental medicaments are also known to inhibit the formation of prostaglandin. Eugenol, which is one of the most potent inhibitors, has been used by dentists for many years to alleviate alveolitis and endodontic inflammation. Similarly, guaiacol and thymol have been widely used for similar purposes.

Aspirin

(Aspirinum)

Aspirin is a Non-Opioid analgesic, antipyretic, antiinflammatory drug.

Usual dosage: 325-650 mg per day.

Form of production. Bayer enteric Aspirin in coated tablets 81, 325 mg.

Diclofenac Sodium

(Voltaren)

Common adult dosage: in osteoarthritis, ankylosing spondylitis, rheumatoid arthritis. 100 – 150mg/day in divided doses 50 or 75 mg.

Form of production. Coated tablets: 25, 50, 75 mg.

Indometacin

(Indometacinum)

In acute pain take 75 – 150 mg daily in 3-4 divided doses for 5-7 days.

Form of production. Susp. 25mg/5ml; capsl. 25,50 mg.

Ketoprofen

(Ketoprofenum)

The drug belongs to Non-opioid analgesic and antiinflammatory group.

For analgesia, in osteoarthritis, rheumatoid arthritis 25 – 50 mg in 6-8 hours.

Form of production. Capsl.: 25, 50, 75 mg.

Naproxen Sodium

(***Naproxenum natricum***)

The drug belongs to Non-opioid analgesic and antiinflammatory group.

For analgesia, in osteoarthritis, rheumatoid arthritis 275 mg in 6-8 hours.

Form of production. Tablets. 275, 550 mg.

6.9. Vitamin agents. Water and oil soluble

Vitamin agents are widely used in medical practice, not only in the condition of vitamins deficiency, but also for the correction of metabolic changes in the organism.

Vitamins of group B are indicated in case of stomatitis , cheilitis, neuritis. Vitamin C is administered in periodontitis, gums bleeding. Medications of fat-soluble vitamins A and E are prescribed in cheilitis, periodontitis, stomatitis. Vitamin K is used to prevent bleeding after the tooth extraction and operations in the maxillofacial area. Vitamin D is essential for normal development and growth of teeth and for the healing of fractures of the jaws.

1. Thiamine hydrochloride in coated tablets and capsules.

2. Riboflavin powder.
3. Acorbic acid with Rutin tablets.
4. Cyanocobalamin ampules.
5. Folic acid tablets.
6. Calcium pantothenate in ointment and solution for rinsing the mouth.
7. Nicotinic acid powder.
8. Retinol acetate in solution in ampules and capsules.
9. Tocopherol acetate in solution for injections and capsules for taking orally.
10. Ergocalciferol in pills and oil solution for internal use.
11. Vikasol powder and capsules.

Enzymes and agents suppressing enzymes

Kontrikal.

Lidasa.

Pancreatin .

Trypsin.

Narcotic and non-narcotic analgesics

In dental practice: Narcotic analgesics are used primarily in operations and injuries in the maxillofacial area in the postoperative period, for sedation and neuroleptanalgesia. Codeine is sometimes used to potentiate the effect of narcotic analgesics in pulpitis and premedication before dental intervention.

Non-narcotic analgesics have a number of analgesic, antipyretic and antiinflammatory effect also show adverse effects. Analgetics are used in dentistry in toothache, arthritis of temporomandibular joint, acute stomatitis, exudative erythema, neuralgia and neuritis. Mefenamic acid when applied topically in low concentrations improves regeneration and can be used in ulcerative lesions of oral mucosa. Oral ulcers can be a sign of agranulocytosis, caused by improper use of pyrazolone derivatives (analgin).

1. Morphine hydrochloride for injection.
2. Promedolum in rectal myltsyah.
3. Fentanyl.
4. Naloxone.
5. Pentazocine.
6. Paracetamol.
7. Analgin.
8. Acetylsalicylic acid in powders and tablets.

Medications which influence the transmission of excitation in cholinergic synapses. M-h-cholinomimetics. Anticholinesterase agents. M-cholinomimetics, m-holinoblokators

To this group belong medications which influence the transmission of excitation in cholinergic synapses change the functional state of organs and systems of organism (secretion of glands).

In stomatological practice M-, M-N-cholinergic medications are used for the normalization of secretory function of salivary glands. Pilocarpine is used in neuroses which are accompanied by dryness of oral mucosa (xerostomia). M-choline blockators can be recommended to reduce salivation in case of inflammation of salivary glands. They are widely used in surgical dentistry as a component of premedication before surgery. At neuritis of facial nerve Galantamine, Proserine are effective.

1) Tubokuranine chloridum in amp.
2) Dithylinum in amp.
3) Pentaminum.
4) Cytitonum.
5) Pipekuronie bromidum.
6) Benzohexonium in powder and amp.
7) Mellictinum in tab.

Medications which influence the transmission of excitation in adrenergic synapses. Adrenomimetics, sympathomimetic

In dental practice adrenomimetics are used as vasoconstrictors to prolong and potentiate the effect of local anesthetics (Adrenalin hydrochloride is used in a ratio: 1 drop of a 0,1% solution to 5-10 ml of local anesthetic), to stop bleeding (adrenalin, mezaton), in allergic reactions (anaphylactic shock), in lowering of blood pressure caused by other factors, attack of bronchial asthma parenteral use of adrenalin is recommended. Alfa-adrenomimetics can be used for the improvement of local blood circulation in periodontal pathology.

1) Adrenalin.

2) Novocaine with adrenalin for local anaesthesia.

3) Noradrenalin.

4) Mezaton in powder and for injections.

5) Isoproterenol for inhalations and in pills.

6) Ephedrine in drops and in pills.

7) Naphthyzinum.

8) Fenoterolum.

9) Salbutamolum in pills and for inhalations.

Hypnotics, antiepileptic, antiparkinsonian agents

Hypnotic agents such as phenobarbital and barbital , in small doses, potentiate the effect of non-narcotic analgesics for dental pain and neuralgia of the trigeminal nerve. Local action of chloral hydrate is used in dental practice. The preparation of tissue after stimulation reduces their sensitivity. This is why it is part of the formula that is used topically to reduce pain in the wound after tooth extraction and dental drops " Dent ", which is used for toothache . Anticonvulsion agents such as carbamazepine, diphenyl and trymetyn used to treat neuralgia of trigeminal nerve. Diphenine and sodium valproate can cause hypertrophic gingivitis The properties of these agents can be used for treatment of oral ulcers.

1) Sodium valproate.

2) Levodopa tab.

3) Phenobarbital powder.
4) Zolpidem tab.
5) Zopiklon tab.
6) Donormil tab.
7) Sodium hydroxybutyrate powder as a sleep aid.
8) sodium hydroxybutyrate anesthesia for a patient weighing 70 kg.
9) Diazepam amp.

6.10. Rendering medical care in emergency

Determination of tactic and first aid medical care (algorithms)

Asphyxia

To explain and execute first aid in case of asphyxia.

Treatment of asphyxia depends on a type of its appearance. If ***aspiration*** occurred an elimination of liquid (blood, saliva, water) from air ways must be done. In cases of ***dislocation*** (of tongue, soft palate, etc.) the suturing and fixation of injured organs is recommended to ensure free passage of air through a larynx. During ***obturation*** of the larynx by foreign bodies they must be removed. A treatment of ***stenotic*** asphyxia include an incision of edemas or inflammatory hearts, elimination of haematomas. If above-mentioned measures are not successful, tracheostomy is indicated.

Hypertension crisis

To explain and to execute first aid in case of hypertonic crisis.

Treatment:

- intravenous injection of Sol. Dibazoli 0,5% - 5 ml;
- intravenous injection of Sol. Furosemidi 20 mg;
- tab. Clophelini under a tongue;
- intravenous injection of Sol. Pentamini 5% - 0,2-0,5 ml with Sol. Glukosae (Dextrose) 40%;
- hospitalization.

Quince's edema

To explain and execute first aid in case of Quinke's edema.

Quincke's edema – asthmatic form of the allergenic reaction. Clinically: starts rapidly with facial skin rash and hyperemia, edema of the lips, eyelids, pharynx with the following spreading on the neck, larynx and trunk. Couch, asthma, laryngospasm appearance, that may lead to asphyxia.

Treatment:

- to stop the injection immediately;
- to infiltrate the injected place with Sol. Epinephrini hydrochloridi 0,1% - 0,5 ml;
- **subcutaneous injection of Sol. Suprastini (Chloropyramine, Allergan S, Sinopen) 2% - 2 ml or Sol. Dimedroli (Diphenhydramine Hydrocloride, Allergan, Amydril) 1% - 1 ml;**
- intravenous injection of Sol. Euphyllini (Aminophylline) 2,4% - 5-10 ml;
- intravenous injection of Sol. Hydrocortisoni (Acortin, Cortisol, Hydrocortone) 150-300 mg;
- tracheotomy (if necessary);
- hospitalization.

Anaphylaxis shock

To execute first aid in case of anaphylaxis shock:

- artificial lung ventilation and closed heart massage;

- intravenous injections of:

- Sol. Epinephrini hydrochloridi 0,1% - 0,5-1 ml;
- Sol. Hydrocortisoni (Acortin, Cortisol, Hydrocortone) - 50-300 mg or Prednisoloni - 50-100 mg;
- Sol. Euphyllini (Aminophylline) 2,4% - 5-10 ml Sol. Glucosae 40% - 10 ml;
- Sol. Calcium chloridi 10% - 5 ml;
- Sol. Suprastini (Chloropyramine, Allergan S, Sinopen) 2% - 2 ml.

Anaesthetics toxicity

To execute first aid in case of Epinephrine toxicity – cardiovascular side effect, which is primarily caused by the stimulatory effect of epinephrine.

Treatment:

- to let the patient smell the Sol. Amylii nitrisi;
- Tab. Nitroglycerini (Nitroglycerol, Nitrangin, Trinitrin) under the tongue;
- intravenous injection of Sol. Euphyllini (Aminophylline) 2,4% - 5-10 ml;
- intravenous injection of Sol. Strophantini 0,05% - 0,5 ml with Sol. Natrii Chloridi 0,9% - 10 ml;
- oxygen therapy.

Collapses

To execute first aid in case of Collapses – a sudden falling of the blood pressure in consequence of peripheral vessels tonus reducing that leads to the sharp cardiovascular deficiency development. Clinically: paleness, falling of the arterial and venous pressure, toneless and arrhythmic cardiac sounds. Consciousness, as a rule, is stored.

Treatment:

- to warm the patient;
- subcutaneous injection of Sol. Epinephrini hydrochloridi 0,1% - 0,5-1 ml;
- intravenous injection of Sol. Prednisoloni (Decortin H, Mecortolon, Prenolone, Sterolone) - 60-90 mg;
- intravenous injection of Sol. Corgliconi 0,06% - 1 ml. with Sol. Glukosae (Dextrose) 40% - 20 ml;
- intramuscular injection of Sol. Cordiamini (Anacardone, Coramin, Nikethamide, Nikorin) - 1 ml.

Acute respiratory insufficiency

To execute emergency measures during respiratory insufficiency.

- To put the patient on a hard surface;
- To ensure a free passage of air through a larynx and to execute artificial lungs ventilation by mouth-to-mouth or mouth-to-nose methods;
- To perform non-direct heart massage by rhythmic pressing of a sternum.

Acute cardiac insufficiency

*To execute emergency measures during cardiac insufficiency***.**

- To put the patient on a hard surface;
- To ensure a free passage of air through a larynx and to execute artificial lungs ventilation by mouth-to-mouth or mouth-to-nose methods;
- To perform non-direct heart massage by rhythmic pressing of a sternum.

Syncope

To explain and execute first aid in case of syncope – a sudden and short-time loss of consciousness as a result of sharp brain hypoxia. Clinically: paleness, limb's coldness, superficial breath, poor and rear pulse, wide pupils, disposition to sweat, falling of the blood pressure. Unconsciousness is preceded by sickness, giddiness, nausea, darkness before eyes, noise in the ears. Reasons of unconsciousness: emotional stress, fear, tiredness, starvation, local anesthetics toxicity.

Treatment:

- to give the patient a horizontal position;
- wetting the face with a cold water;
- oxygen therapy;
- to let the patient smell the Sol. Ammonii Caustici 10%;
- subcutaneous injection of Sol. Coffeini-natrii benzoatis 10% - 1 ml;

- intramuscular injection of Sol. Cordiamini (Anacardone, Coramin, Nikethamide, Nikorin) - 1 ml;

Epilepsy

To explain and execute first aid in case of epilepsy

Epileptic case – may develop in some minutes after the local anaesthetic injection in

patients with epilepsy. Clinically: skin hyperemia, tension, convulsions, unconsciousness, tachycardia, hypersalivation, wideness of pupils. Duration from several seconds till some minutes.

Treatment:

- to lay the patient and put his head on the side;
- to fill the mouth-dilator between the teeth (prophylaxis of tongue biting);
- intramuscular injection of Sol. Hexenali (Hexobarbital sodium, Endodorm, Narconat) 10% - 10 ml or Sol. Sibazoni (Diazepam, Relanium, Seduxen, Valium) 0,5% - 2 ml.

Rp.1: Sol. Adrenalini hydrochloride 0,1 % - 1,0 ml.
D.t.d. N 6 in amp.
S. 0,5 ml in subcutaneous or intravenous injections
#
Rp.2: Sol. Noradrenalini hydrotartratis 0,2 % - 1,0 ml.
D.t.d. N 6 in amp.
S. 1 ml is applied intravenously by medical dropper
#
Rp.3: Sol. Coffeini-natrii benzoatis 10 % - 1,0 ml.
D.t.d. N 6 in amp.
S. 1,0 ml in subcutaneous injections
#
Rp.4: Cordiamini 1,0 ml.
D.t.d. N 10 in amp.

S. 1,0 ml in subcutaneous injections
#
Rp.5: Sol. Lobelini hyrdochloridi l % - 1,0 ml.
D.t.d. N 6, in amp.
S. 1,0 ml in subcutaneous injections

Rp.6: Sol. Suprastini 2 % - 1 ml
D.t.d. N 6 in amp.
S. 1,0 ml in intramuscular injections.
#
Rp.7: Sol. Strophanthini 0,05 % - 1,0 ml.
D.S. 0,25-0,5 ml intravenously (diluted in the solution of Glucose – 20 ml 20 %)
#
Rp.8: Sol. Ephedrini hydrochloridi 5% - 1,0 ml.
D.t.d. N 10 in amp.
S. 0,5-1,0 ml, subcutaneous injection
#
Rp.9: Sol. Mesatoni 1% - 1,0 ml.
D.t.d. N 6 in amp.
S. 0,5-1,0 ml, subcutaneous injection
#
Rp.1: Dimedroli l % - 1,0 мл
D.td. N 6 in amp.
S. 1 ml intramuscularly #
#
Rp.2: Diprazini 2,5 % 1,0 ml
D.t.d. N 6 in amp.
S. 1 ml intramuscular injection #
#

Rp.3: Suprastini 2 % 1,0 ml
D.t.d. N 6 in amp.
S. 1 ml intramuscular injection
#

Chapter 7.
Medical forms applied in stomatological (dental) practice

7.1. Hard medical forms

1. Powders.
2. Capsules.
3. Tablets and dragee.
4. Preparations of medical herbs.
5. New hard medical forms (caramels, glosets, pastilas and others)

Powders
(Pulveres, -um)

Powder (pulvis, -eris) is a hard medical form for internal or external application which consists of one or several substances. Sterile powder is applied also for parenterally use after previous dissolution in a certain sterile solvent.

Powder has a number of advantages in comparison with other medical forms. This medical form is sufficiently easy to make, transport and measure out. Powder is relatively cheap and can be saved for a long time. Hygroscopic substances and those which are easy destroyed on the exposure of light shouldn't be used as medical powders.

Simple powders (pulveres simplices) are made of one matter, complex (pulveres compositi) – are composed of two or more ingredients. According to the size of particles distinguish macro-powders (pulvis grossus), small (micro-) powders (pulvis subtilis) and extra small (pulvis subtilissimus).

Micro-powders are used for treatment of wounds, mucous membranes. They do not cause mechanical irritation at local use and have large surface of adsorption. There are also powders for external use only (on the skin) (aspersiones).

Powders are prescribed undosed (pulveres indivisi), or in separate portions – dosed powders (pulveres divisi).

Undosed powders (powders that are not strong and do not need exact dosage) are packed 5,0-100,0 gramms, and the patient measures them out in accordance with doctor's prescription.. These powders are mostly used for external application – on a skin, mucous membranes, rarely are recommended for internal use. Anaesthesinum is one of the example of this type of powder. In a recipe the name of medicinal substances (in the genitive case of singular) and its general amount are indicated. Da. Signa. – D. S. (Give. Designate) and mark the method of use in a language, understandable for a patient.

In stomatological (dental) practice powders are used for application on oral mucosa and for preparations of tooth feelings.

Capsules

(Capsulae, -arum)

A capsule is a shell for dosed powders – granular-shaped , in the form of pastes, semi-fluid or liquid medicinal substances for internal use. Application of capsules enables to avoid feeling of unpleasant taste and smell or irritating action of substances on oral mucosa.

Capsules are made of gelatin, water and glycerin (Capsulae of gelatinosaea). Gelatinous capsules can be hard or soft (elastic). Capsules contain from 0,1 to 1,5 gramms of medicinal substances.

Tablets

(Tabulettae, -arum)

Tablet (tabuletta, -ae) – the hard, dosed medical form which is made by pressing of medicinal substances or mixture of medicinal and additional (sugar, lactobiose, glucose, and others) substances. Tablets are accepted inside, hold under the tongue, used externally and for subcutaneous implantation. Tablets are made by industrial methods. They can be coated by a membrane, produced from a wheatflour, starch, sugar, powder of cacao, dyes, food varnishes.

Tablets are comfortable medical form: have a pleasant appearance, can be saved for a long time, they mask unpleasant taste of many

medications. Tablets enable to measure out exactly medicinal substances (error ± 5 %). Application of multi-layered tablets are enables successive absorption of several medicinal substances, and also prolongation of their action. Modern industrial technology guarantees high quality and speed of tablets production. However there are some drawbacks, among them: chemical transformations of the components of a tablet, changes in color, lost of solubility in case of protracted storage and as a result, unchanged pass through digestive system without expected effect. The mass of a tablet is from 0,1 to 1,0 gramms.

Gloseta

(Glossettae, -arum)

Gloseta (glossetta -ae), a tablet for sublingual (under the tongue) application. They dissolve easily, and an active matter is quickly absorbed (sucked in) through the mucous membrane.

Pastilas

(Trochisci, -arum)

Pastilas (pastilla, -s) is a hard, usually flat form which is prepared by mixing of medicinal substances with sugar and mucus (pastilas are small cakes), they are applied in stomatology for treatment of patients with oral mucosa pathology. Pastilas slowly dissolve in saliva and effects oral mucosa. Are prescribed for internal use in the diseases of digestive system.

Caramels

(Carameles, -turn)

Caramel (caramel, th. caramel, -s. cara-melo, -s) – the hard is dosed medical form, made as candies mixing of medicinal substances with sugar, treacle, and with addition of taste aromatizers, dyes. Caramels are intended for treatment of patients with the inflammatory process of mucus shell of cavity of mouth and gums. They are detained until complete dissolution.

Dragee

(Dragee, -ee)

Dragee are hard, dosed medical form for internal use. They are produced by pharmaceutical industry by the way of stratification (dragge-forming) of medicinal and additional substances on granules.

Additional substances are: sugar, starch, wheatflour, talc, powder of cacao, food varnishes, dyes and others.

Dragee are coated with a capsule to protect medicinal substances from influence of gastric juice, capsules dissolve only in intestinal tract. Dragee are comfortable for acceptance. Mass of one dragee is from 0,1 to 1,0 gramms.

Microdragee

(Microdragee, ee)

Microdragee are produced by placing of medicinal substance and saccharine syrup (laminant) on the granules of sugar or formation of a suspension of medicinal powders in the mixture of melted substances (beeswax, Stearin acid and others).

Microdragee have a diameter of 30 – 50 mkm, can be produced with or without a shell. Depending on correlation of medicinal and additional matter, they are prepared with different duration of release of active substances. Emulsifiers (lecithin, twin) enable considerably to change the speed of release of medicinal matter.

Spansules

(Spansulae, -arum)

Spansules are medicinal forms for internal use, which contain microdragee with different duration of action. There can be three, four and even more than five types of microdragee with different duration of release and absorption of active ingredients.

Spansules contain from 50 to 400 microdragee, and also mixture of medicinal substances and liquids.

Granules

(Granula, -arum)

A granule is a hard medical form for internal use, which consists of homogeneous cylinder-shaped particles.

Granules contain of medicinal and additional substances enter in the complement of granules. As the additional substances, beet or cane-sugar, sodium bicarbonate, starch, glucose, talc, saccharine syrup, alcohol, water, food dyes and others are used.

The size of granules – 0,2-3 mm.

Tooth-powders

Precipitated calcium carbonate is the main part of these powders, used for oral hygiene.

Dental powder: Calcium carbonate precipitated (20.0), basic Magnesium carbonate (Magnesii subcarbonas 5,0), peppermint oil, 10 drops (Oleum Menthae piperitae).

Medication for the prevention of dental caries in tablets:

Rp: Phytini 0,25

D.t.d. N 30. in tablets.

S. 1 tablet 3 times a day for 30 days.

#

Rp: Calcii glycerophosphatis 0,25

D.t.d. N 20. in tab.

S. 1 tablet 3 times a day.

#

Rp: Calcii 1actatis 0,5

S. 1 tablet 3 times a day before meals. Take for 30 days.

#

Medications used in the treatment of periodontal diseases and oral mucosa:

Rp: Tab. Furadonini 0,05 N 20
D.S. For preparation of pastes and suspensions.
#
Rp: Tab. Furasolidoni 0,1 N 20
D.S. For preparation pastes and suspensions (slurries).
#
Rp: Tab. Sulfadimethoxini 0,5 N 20
D.S. The first day – 2 tablets, in the next day – 1 tablet.
#
Rp: Tab. Sulfadimezini 0,5 N 20
D.S. 2 tablets every 4-6 hours for 3-6 days.
#
Rp: Tab. Oleandomycini phosphatis 0,125 obductas N 25
D.S. 2 tablets 4-6 times a day.
#
Rp: Tab. Tetracyclini hydrochloridi 0,1 N 20
D.S. For preparation suspensions and their instillation into the periodontal pockets.
#
Rp: Tab. Erythromycini 0,25 N10
D.S. 1 tablet 4 times a day for 1-1.5 hours before meals.
#
Rp: Tab. Bactrimi N 20 (Biseptol)
D.S. 1 tablet 3 times a day after meals.

Rp: Tab. Calcii pantothenatis 0,1 N 50
D.S. 1 tablet 3 times a day
#

Rp: Levorini 500 000 ED
D.t.d. N 30 in tab.
S. 1 tablet 3 times a day in fungal stomatitis within 10-12 days.
#
Rp: Amphotericini 50 000 ED
D.t.d.N 10 in tab.
S. For intravenous injection in chronic disseminated form of candidiasis, resistant to other types of antifungal therapy. Dissolve in 5% glucose solution.
#
Rp: Nystatini obductae 500 000 ED
D.t.d. N 50 in tab.
S. 1 tablet 4 times a day.
#
Rp: Tab. Riboflavini 0,01 N 50
D.S. 1 tablet 3 times a day.
#
Rp: Tab. Acidi nicotinici 0,05 N 50
D.S. 1 tablet 3 times daily after meals within 10-15 days.
#
Rp: Tab. Acidi acetylsalicy lici 0,5 N 10
D.S. 1 tablet 3 times daily after meals.
#
Rp: Tab. Acidi ascorbinici 0,05 N 50
D.S. 1 tablet 3 times daily after meals.
#

Rp:Tab. Acidi folici 0,001 N50
D.S. 1 tablet 3 times a day during a month in combination with Vitamins B.
#

Rp: Tab. Chingamini 0,25 N 20
D.S. 1 tablet 2 times daily after meals within 10 days.
#
Rp: Tab. Hexamethylentetramini 0,5 – 40 tab.
D.S. 1 tablet 3 times a day in exudative form of Erythema Multiforme.
#
Rp: Tab. Metronidazoli 0,25 N 20
Dragee
#
Rp: Dragee Thiamini bromidi 0,002 N 20
D.S. 1 dragee 3 times a day.
#
Rp: Dragee Diazolini 0,05
D.t.d. N 20
S. 1 dragee 2 times a day.
#
Rp: Decamini 0,00015
D.t.d.N 100 in dragee
S. 1-2 dragee 3 times a day to be put under the tongue every 3-5 hours.
#
Rp: Retinoli acetatis 3 300 MO
D.t.d. N 60 in dragee
S. 1 dragee 2 times a day.During 2-3 months.

#
Rp: Dragee Diazolini 0,05
D.t.d. N 20 S.
1 dragee 2 times a day.
#

Rp: Retinoli acetatis 3 300 MO
D.t.d. N 60 in dragee
S. 1 dragee 2 times a day during 2-3 months.
#
Rp: Methacyclini hydrochloridi 0,3
D.t.d. N10 In caps. gelatinosis
S. 1 capsule 2 times a day.
#

7.2. Soft medical forms

Soft medical forms include:

1. Gels
2. Ointments
3. Creams
4. Pastes.
5. Liniments.
6. Plasters.

Gels

(Geles –um)

Soft medications for local application, which include one-, two- or multi-phase dispersible systems with a liquid dispersible environment, rheological properties of which are conditioned by the presence of gels-creators in small concentrations. Gels-creators can additionally function as stabilizators of the dispersible systems: suspensions or emulsions. Such

gels are named as suspension gels or emulsion gels accordingly. Gel contains one or more active substances and additional constituents which form a base.

Gels are applicated on a skin, wounds, ulcers, mucous membranes .

Depending on the type of basis, gels can be hydrophobic (oleogel) (a hydrophobic solvent is vaseline, vaseline butter, paraffin and lyophilic gel-former), hydrophilic (hydrogel) (water, hydrophilic or non-aqueous solvents and hydrophilic gels-former).

Gels are classifiered according to the type of application into gels for external use, intra-oral application (jelly), mostly used in pediatric practice, and intra-nasal, -eye, -ear, -rectal, -vaginal, -cervical, urethral, dental gels (for treating periodontal tissues)

Creams

(Cremores, -rum)

Creams are soft medications for local application, which are one-, two- or multiple dispersible phase systems and at a certain temperature of storage possess Newton's type of motion and have low value of rheological properties. Creams contain one or more active and additional substances, which constitute a basis of the cream.

Creams are applied on skin, wounds, ulcers, mucous membranes.

Depending on the type of basis, creams are hydrophobic and hydrophilic.

According to the purpose of application, creams are distributed: for external application, nasal-, ear-, eye-, rectal-, vaginal creams.

Some medicinal substances (ethylnikotynate, methylsalicylate), oils, fats, are included in their composition. Creams are used locally, for skin care (as cosmetic facilities), to remove irritation of skin. Some creams are for internal use, for example – Aluminium hydroxide cream (water suspension of colloidal Aluminium hydroxide), prescribed in patients with stomach ulcer.

Liniments

(Linimenta, -orum)

Liniment, or liquid ointment is a soft medication for local application, which contains up to 5% of hard substances. Ointments, gels, creams, pastes, which are characterized with above mentioned property belong to liniments. Liniment contains one or more active and additional substances which form a basis.

Liniments are prepared for external application. A liniment is a colloid or dense liquid which rarefies at body temperature. Forms of Liniments:

1) transparent mixtures of mutually soluble substances (for example, fat butters with essential oils, chloroform, methylsalicylate).

2) colloid mixtures (soap solution in an alcohol with some medicinal substances).

3) emulsions.

4) suspensions.

In the basis for liniments liquid butters: vaseline (oleum of Vaselini), flaxen (oleum of Lini), sunflower (oleum of Helianthi), castor oil (oleum of Ricini) and others are used.

Liniments are recommended in skin burns, in the cases of frost-bitten parts of body, cracks, and as cosmetic remedies. Liniments have low firmness and are not durable, that is why they are prepared and used for short period of time.

Liniments, emulsions and suspension should be shaken up before use.

Ointments

(Unguenta, -um)

Ointment is a soft medication for local application, the dispersible phase of which at a certain temperature of storage doesn't possess Newton's type of motion and has high value of rheological properties. Ointment contains one or more active substances and additional substances, which form simple or complext basis.

Ointments are applied on skin, wounds, ulcers, mucous membranes.

According to the purpose of application, ointments are distributed: for external application, nasal-, ear-, eye-, rectal-, vaginal ontments and for inhalations.

An ointment is one of the oldest medical forms for local use.

Ointment is an unsteady medical form. It consists of basis (constituents) and equally spreaded in it medicinal matter. As basis for ointments vaseline (Vaselinum), lanolin (Lanolinum) which can be in a water form (Lanolinum of hydricum) and in waterless form (Lanolinum of anhydricum), or pork cleared lard (Adeps of suillus depuratus seu of Axungia of porcina depurata) are used. In addition, as constitutive substances are used: carbonhydrate, fatty , emulsion, waterless, silicon, polyethylenglycol and other synthetic bases.

If a doctor does not mark the name of basis, ointment is prepared on Vaseline base. Ointments, made on a pork lard, have the limited shelf-life – not more than 2 weeks (pork lard is prone to oxidation, and achieves a bitter taste).

As a base for ophthalmic ointment a mixture of 10 parts of waterless lanolin and 90 parts of vaseline is used. These compositions undergoes fusion, filtration and sterilization in melted condition.

Ointments and liniments can be used in dental practice, for the treatment of some diseases of lips. For example – in mycotic cheilitis Nystatin ointment, in infectious diseases of lips – 1-5% liniment of Syntomicini are used.

PASTE

(Pastae, -arum)

Paste is a soft medication for local application, which is a type of suspension, containing over 25% of hard dispersible phase, diffused in a base. Paste contains one or more active substances and additional substances which form basis. As a base for a paste, basis for gels, ointments and creams can be used.

Pastes are applied on skin, can be used in oral cavity, sometimes – for preparation of solutions for per oral application.

According to the purpose of application, pastes are distributed: for external application, for application in the oral cavity (tooth, dental, periodontal), and pastes for preparation of suspensions (solutions) for internal use.

Pastes are more durable than ointments in a place of application.

Due to the large concentration of powder-like substances, pastes possess considerable adsorbent and drying characteristics.

The same fatty bases, as for ointments are used for pastes: Vaselinum, Lanolinum, lard, unguentum of Naphtalani, unguentum of Glycerini, unguentum of Cetaceum. If there is less than 25 % of powder-like substances in the composition of paste, it is necessary to add indifferent fillers: talc (Talcum), White Clay (Bolus alba), wheat starch (Amylum Tritici), rice starch (Amylum Oryzae), Lycopodia, or spores of Plaun (Lycopodium).

Pastes for dental use are made differently than for application on the skin. As a basis, in these pastes paraffin-like and liquid substances (clove oil, glycerin) are used, instead of dense and viscous fats (vaseline, lanolin, etc.) Pastes must be thick enough to be placed in root canals, periodontal pockets. A doctor can prepare pastes for single use.

For remineralizing therapy in the treatment of early forms of tooth decay:

Rp: Natrii fluorati 15,0

Glycerini 5,0

M. f. Pasta

D.S. For rubbing into the hard tissues.

##

Odontotrophic paste for treatment of acute deep caries and pulpitis by biological method:

Rp: Calcii glycerophosphates 5,65
Calcii hydroxidi
Zinci cxydi aa 1,0
Vaselini
Glycerini aa q. s.
M. ut fiat pasta
D.S. To overlay the bottom of the cavity.
#
Rp: Calcipulpi 2,5
D.S. Pasta with Calcium hydroxide.
#

For treatment of pulpitis by devitalization method:
Rp: Acidi arsenicosi anhydrici
Cocaini hydrochloride aa 2,0
Phenoli puri liquefacti q. s.
M. ut f. pasta
D.S. Pasta by devitalisation pulp.
#
Rp: Thymoli 0,1
Zinci oxydi 10,0
Glycerine q. s.
M. f. pasta
D.S. Paste for root canal filling in pediatric dentistry.

#
Rp: Parapasteae - 6,5
D. S. Paste for devitalization of the pulp.

Ointments (Unguenta).

Ointments are soft medicinal forms with viscous consistency for external application.

For the treatment of oral mucuos pathology:

Rp: Ung. Erythromycini 1 % - 10,0
D.S. For the lubrication of the lips and the skin around the mouth.
#
Rp: Ung. Gramicidini 30,0
D.t.d. N 3. S. For the lubrication of the affected areas of oral mucos.
#
Rp: Ung. Neomycini sulfatis 2 % - 50 ml
D.S. For the lubrication of the lips and the skin around the mouth.
#
Rp: Ung. Nystatini 30,0
D.S. For the lubrication of oral mucosa in fungal stomatitis.
#
Rp: Ung. Decamini 0,5 % - 30,0
D.S. For the lubrication of oral mucosa in fungal stomatitis.
#
Rp: Ung. Riboflavini 5 % - 20,0
D.S. For the lubrication of lips 2-3 times a day for 10 days.
#
Rp: Ung. Oxolini 0,25 % - 10,0
D.S. For the lubrication of the affected area 2-3 times a day. The course of treatment is 4-7 days.
#
Rp: Ung. Bonaphtoni 0,5 % - 30,0
D.S. For the lubrication of the affected areas of oral mucosa 2-3 times a day for 4-7 days.
#

Rp: Ung. Prednisoloni 0,5 % - 5,0
D.S. For the lubrication of lips 2 times a day for 5-7 days.
#
Rp: Ung. Locacorteni 30,0
D.t.d. no 12 in tubes
S. For external use.
#

Patches

(Emrlastra)

Medicinal form as plastic mass that has the ability to soften at body temperature and stick to the skin. Patches are used externally. According to aggregation condition patches are devided into solid and liquid . Solid patches are dense at room temperature and soften at body temperature . Liquid patches (skin glue) are volatile liquids, that after evaporation of the solvent are left on the skin or mucous membrane as a film. They are used to protect affected areas from external influences, fixation bandages, connection of the edges of a wound, etc. or for local therapeutic effect (keratolytic, antiseptic).

Powders:

Rp: Lidasa
D.t.d. N 10 in amp.
S. Content of an ampule dissolve in 1 ml of 0,5% solution of Novocaine (for electrophoresis)
#
Rp: Zinci oxydi 50,0
D.S. Powder for preparation of a paste.
#
Rp: Bismuthi subnitrati 50,0
D.S. Powder for preparation of a paste.
#
Rp: Trypsini crystallisati 0,01

D.t.d. N 10.
S. The content of an ampule dissolved ex tempore in 10 ml of isotonic solution.
#
Rp: Galascorbini 0,5
D.t.d.N 20 in pulv.
S. Dissolve one powder in 50 ml of purified water and use for applications

Rp: Chonsuridi 0,1
D.t.d. N 6.
S. For applications. The content of an ampule should be dissolved before use in 10 ml of 0,5% solution of Novocaine or isotonic solution.
#

Liquid pharmaceutical forms
(formae medicamentorum fluidae)

The liquid medical forms are as follows:

1. Solutions are for external and internal application.
2. Injection forms.
3. Suspensions.
4. Emulsions.
5. Mixtures. (Syrups, aromatic water and mucuses, as component ingredients of mixtures).
6. Medical collections.
7. Extracts and decoctions.
8. Extracts.

9. Tinctures.

Solutions

(Solutiones)

Solution is a liquid medicinal form, obtained by dissolution of the solid medicinal substance or a liquid in the solvent (distilled water, 70 %, 90 %, 95% ethanol (alcohol), glycerin, liquid oils: vaseline, olive, peach). Water, alcohol, oil and glycerol solutions are distinguished according to the dissolvent. Solutions are used for external and internal use and for injections. The concentration of the solution is indicated by one of three ways: usually – in percentage, less often (in case of big dilutions) – in ratios (1:1 or 1:5 000 000) and very rare in mass-volume ratios (0,1-200 or 0,5-180 ml). In therapeutic dentistry solutions are used for:

Medicinal root canal treatment:

Rp: Sol. Chloramini 4 % 50 ml
D.S. For antiseptic treatment of root canals.
#
Rp: Sol. Jodinoli 1 % 200 ml
D.S. For antiseptic treatment of root canals.
#
Rp: Sol. Aethonii 0,5 % 200 ml
D.S. For antiseptic treatment of cavity and root canals.
#
Rp: Sol Decamini 0,1 % 100 ml
D.S. For antiseptic treatment of carious cavity
#
Rp: Sol. Chlorhexidini bigluconatis 20 % 500 ml
D.S. For antiseptic treatment of root canals.
To prepare a 0,2 % aqueous solution.
#
Rp: Sol. Formalini 5 % 50 ml

D.S. For antiseptic treatment of root canals.
#
Rp: Antiformini l5,0
D.S. For the treatment of root canals.
#
Rp: Tricresoli 4,0
Sol. Formaldehydi 1 ml
M.D.S. Trykrezol-formaline liquid for canal sterilization.
#
Rp: Sol. Formaldehydi 40 % 50 ml
D.S. A component of Albrecht's fluid.
#
Rp: Resorcini 25,0
Aq.destillatae q. s. ad saturвtionem 40 ml
D.S. A component of Albrecht's fluid.
#
Rp: Natrii hydrooxidi 25,0
Aq. destillatae q. s. ad saturвtionem 48 ml
D.S. The catalyst Albrecht's fluid.
#

Rp: Sol. Argenti nitratis 30 % 30 ml
D.S. For the treatment of root canals by Pekker.
#
Rp: Sol. Acidi aminocapronici 5 % 100 ml
D.S. To stop root canal bleeding.
#
Rp: Sol. Dinatrii aethylendiamin tetraacetatis 10 % - 50 ml
D.S. For widening of root canals.
#
Rp: Sol. Kalii jodidi 10 % 200 ml

D.S. For electrophoresis of root canals.
#
Rp: Cresopheni 13 ml
D.S. For antiseptic treatment of pulp chamber.
#
For treatment of carious cavity:
Rp: Ethanoli 96 %- 100 ml
D.S. For sterilization of carious cavity.
#
Rp: Aetheris pro narcosi 200 ml
D.S. For drying of carious cavity.
#
Rp: Sol. Hydrogenii peroxydi dilutae 3 % 25 ml
D.S. For the treatment of carious cavity.
#
For remineralization therapy:
Rp: Sol. Natrii fluorati 2 % 20 ml
D.S. For electrophoresis and irrigation of dental hard tissues.
It is advisable prior to electrophoresis of Natrii fluorati to conduct the electrophoresis of 10% solution of Calcium gluconate.
#

Rp: Sol. Calcii gluconatis 10 % 10 ml
D.t.d.N 10 in amp.
S. For electrophoresis in tooth hard tissues. The course of treatment - 10 sessions.
#
Rp: Sol. Calcii glicerophosphatis 2,5 % 100 ml
D. S. For electrophoresis in tooth hard tissues. The course of treatment - 10 sessions.
#

Rp: Sol. Ergocalciferoli oleosae (vit. D) 0,125 % 10 ml
D. S. 5 drops 2 times a day for 30 days.
#

For applicational anesthesia in the treatment of caries, gingivitis, periodontitis (removal of dental deposits, curettage, gingivotomy, gingivectomy:
Rp: Sol. Dicaini 5 % 5 ml
D.S. For the applicational anesthesia.
#
Rp: Sol. Novocaini 2 % 2 ml
D.t.d. N10 in amp.
S. For pain relief.
#
Rp: Sol. Lidocaini 1 % 1 ml
D.t.d.N10 in amp.
S. For pain relief.
#
Rp: Sol. Trimecaini 1 % 5 ml
D.t.d.N10 in amp.
S. For pain relief.
#

Rp: Sol. Pyromecaini 1 % 1 ml
D.t.d. N10 in amp.
S. For pain relief.
#
In case of increased salivation:
Rp: Scopolamini hydrobromidi 0,005
 Aq. destillatae 5 ml
M.D.S. Take 3-4 drops 2 times a day.

#
Rp: Atropini sulfatis 0,01
Aq. destillatae 10 ml
M.D.S. Take 5-8 drops 3 times a day, the day before the reception by a dentist.
#
For pastes, used in root canal:
Rp: Sol. Calcii chlorati 50 % 20 ml
D.S. Saturated solution of Calcium chloride – liquid, initiating the hardening of Sulfo-Calcium paste.
#
Rp: Eugenoli 30 ml
D.S. To prepare Eugenol-Zinc paste ex tempore. Is mixed with Zinc oxide.
#
For antiseptic treatment of the oral cavity:
Rp: Sol. Furacilini 1 : 5 000 500 ml
D.S. To rinse a mouth.
#
Rp: Sol. Zinci sulfatis 1 % 50 ml
D.S. 1 tablespoon (15 ml) per cup of water for rinsing.
#

Rp: Sol. Kalii permanganatis 1 % 20 ml
D.S. For mouth rinses 30-40 drops in a glass of water.
#
Rp. Sol. Citrali spirituosae 1 % 25 ml
D.S. 25 drops in 1/2 cup of water. For rinses.
#
For the treatment of oral mucosa pathology:

Rp: Sol. Jodi spirituosae 5 % 10 ml
D.S. For the treatment of oral mucosa.
#
Rp: Sol. Methyleni coerulei 2 % 20 ml
D.S. For the treatment of erosions in oral mucosa.
#
Rp: Sol. Viridis nitentis spirituosae 1 % 50 ml 50 ml
D.S. For lubrication.
#
Rp: Anaesthesini 5,0
Olei Persicorum ad 100 ml
M.D.S. Apply on oral mucosa.
#
Rp:Vinilini 20,0
Olei Persicorum 80 ml
M.D.S. Apply as an lubricant on the affected regions of the oral mucosa.
#
Rp: Sol. Tannini 1 % 100 ml
D.S. For applications on the inflammed regions of oral mucosa.
#
Rp: Sol. Calcii pantothenatis 5 % 100 ml
D.S. For irrigation of the oral mucosa for 5-6 days.
#

Rp: Sol. Chlorhexidini bigluconatis 20 % 500 ml
D.S. For mouth rinses as 0,2% aqueous solution (1 teaspoon (5 ml) per 500 ml of water).
#
Rp: Sol. Kalii jodidi 2 % 200 ml
D.S. 1 tablespoon (15 ml) - 3 times a day in fungal stomatitis.

#

Rp:Sol. Acidi borici 2 % 100 ml

D.S. 2 tablespoons (15 ml) per cup of water for rinsing of oral cavity and the throat.

#

Rp: Sol. Tocopheroli acetatis oleosae 10 % 100 ml

D.S. For applications on oral mucosa 2-3 times a day for 10 days.

#

Rp: Sol. Retabolili oleosae 5 % 1 ml

D.t.d. N 5 in ampules.

S. 1 ml intramuscular, 1 injection in two weeks. Therapeutic course – 8-10 injections.

#

Rp: Sol. Levamisoli 0,1 % 50 ml.

D.S. For applications on oral mucosa and instillations in periodontal pockets.

#

Rp: Sol. Prodigiosani 0,005 % 1 ml

D. t. d. N 6 in amp.

S. For intramuscular injections, for the stimulation of non-specific immunity.

#

Rp: Sol. Mefenamini natrii 0,1 % 50 ml

D.S. For applications and instillations in periodontal pockets.

#

Rp: Sol. Calcii chloridi 10 % 200ml

D.S. 1 tablespoon (15 ml) 4 times a day.

#

Rp: Sol. Unithioli 5 % 5 ml

D.t.d.N 10 in amp.

S. For root canal treatment in case of arsenic periodontitis and applications on oral mucosa.

#

Rp: Contrykali 10 000 ED

D.t.d. N 5 in amp.

S. For applications on oral mucosa and instillations in periodontal pockets.

#

Rp: Trasyloli 10 000 ED

D.t.d. N 5 in amp.

S. For applications, once a day.

#

Infusions and decoctions

(Infusa et decocta)

Infusions are liquid forms, which are aqueous extracts of plant material or aqueous solutions of extracts-concentrates. Infusions are often prepared from parts of a plant (leaves, flowers) from which bioactive components are easily extracted (from bark, roots and rhizomes). Infusions and decoctions are recommended for internal and external use (rinses).

Nastoyka

(Tinctura)

It is a transparent liquid alcoholic extract of plant material obtained without heating. They are often prepared by infusion of plant material in 70% ethanol or by dissolving the extracts. All tinctures are officinal medications.

Extracts

(Extracta)

Concentrated extracts are derived from medicinal plants. According to the

consistency of extracts, they are: liquid, dense and dry. All extracts are officinal medications.

Mixture

(Mixturae)

Mixtures are liquid forms obtained by dissolving or mixing of various liquid-based (water, alcohol, glycerol) several hard forms or liquids (solutions, infusions, decoctions, tinctures, extracts). Mixture contains three or more ingredients. Mixtures are often prescribed for internal use, rarely for external application.

Liniments

(Linimenta)

Liniments are medicinal form for external application. Most liniments are homogeneous mixtures looking like liquids with high density. A liniment can be an emulsion (Aloe Liniment), a suspension (balsamic liniment of Vishnevsky), an emulsion- suspension (Syntomitsin, Streptotsid liniments), a mixture (liniment "Sanitas").

Liquid medicinal forms also include medicinal oils (oil extracts of herbs - St. John's Wort oil , sweetbrier oil), juice of fresh plants (juice of plantain, Kalanchoe, aloe), cattle-origin medications (officinal liquid extracts from the tissues of slaughtered cattle, insulin, parathyroidin), medicinal syrups (mixture of extracts of herbs with sugar syrup - althea syrup).

Rp: Olei Hippophaes

D.S. For applications on the oral mucosa.

#

The medicinal forms for injection

By means of injections, medications are introduced subcutaneously, intramuscularly, intravenously, subarachnoidally, etc. Different dosage forms are used for injections: for subcutaneous administration - aqueous solutions, for intramuscular - water and oil solutions and suspensions, for intravenous - water solutions. In clinical practice, the dosage forms for injections are produced in ampules.

Applications - Fomenta

Applications are used for the diagnosis of early forms of tooth decay, treatment of periodontal diseases and oral mucosa pathology. In application, small puffy cotton swabs wetted with a liquid dosage are put with the help of tweezers on the oral mucosa for 5-8 min. The manipulation is repeated several times. For early caries diagnostic dyes: 0,1 % solution of methyl red, 2 % solution of methylene blue are used. The degree of oral mucosa colouring is analyzed visually, often with magnification. For local treatment of pathological regions of mucous membranes antibacterial, keratoplastic, antiinflammatory and other medications are used.

Medicinal films

(Membranula) insert

Medicinal films are sterile polymer films 9x4, 5x0, 35 mm in size, containing necessary doses of medications. Therapeutic concentrations of AGENTS in medicinal films can be preserved for 24 hours and more. Currently medicinal films containing antibiotics, anesthetics, vitamins, antiviral agents are used and classified as full-time, intravaginal, dental.

Medicinal films is a product of the forms that relates to transdermal therapeutic systems and used in the form of application to the oral mucosa and periodontal lesions for pain in epithelial tissues, and creating artificial temporary barrier (if necessary local tissue protection from exposure to mechanical, thermal, chemical irritants) and correction of oral microflora with insufficient immune response. Films composed of the active substance and hydrophilic polymer base films.

In application of the films under the influence of saliva is a gradual dissolution of the polymer base, extended release and diffusion of the active ingredient to the tissue of the oral mucosa and periodontal. Films are superior to other traditional dental medicine: increase the bioavailability and efficacy of the active substance, protect them from leaching saliva and at the same time allow the use of different therapeutic and physical and chemical properties of the substance.

Rinsing - Cargarismata

Mouthwashes with desinfectant solutions: hydrogen peroxide, potassium permanganate, chlorhexydine, furacylinum; antiinflammatory AGENTS and others are used in dentistry during the professional hygiene and treatment of inflammatory periodontal diseases. Infusions, decoctions, extracts of plant material (herbal medicine) are popular as rinses in dentistry.

Lubrication - Liturae

Lubrications are used in diagnosis, treatment of periodontal diseases and pathology of oral mucosa. Lubrications are conducted by a swab dipped in medicine and fixed in tweezers. Thus, to determine the dynamics of inflammation in the treatment of gingivitis and periodontitis Schiller – Pisarev's test is conducted. Lubrication is carried out in the treatment of fungal lesions of the mouth, glossitis, cheilitis, and other diseases of the oral mucosa.

Mouth baths - Balnea

Used in the treatment of periodontal diseases and oral mucosa. In this technique liquid and heated medications are retained in oral cavity for 2-3 minutes and than spitted out. Manipulation is repeated 4-5 times in one session.

Instillation - Instillatio

Often used in endodontic treatment and periodontitis as an introduction of herbal AGENTS , proteolytic enzymes, other medications into the root canals or periodontal pockets. Instillations are often carried

out by introduction of paper points or cotton wetted with medicinal substance into the root canals or pockets, gently pushing them by endodontic instruments and dental probes.

Rubbing - Linimenta

Conducted for remineralization and desensitizing of early forms of tooth decay in enamel and dentin hyperesthesia and in the treatment of periodontal diseases. The main dosage form for this manipulation is a paste, containing fluoride , strontium , etc. The surface of the tooth is cleaned from the plaque, dried by a stream of warm air, isolated from the surrounding tissues with cotton swabs and small portions of the paste are rubbed into the surface of the enamel. Manipulation is repeated several times. Mouthwashes are necessary after the procedures to neutralize residual drug and remove its toxic effects on the oral mucosa and gums.

Aerosols - Aerosola medicamentosa

Aerosols are used in the treatment of inflammatory periodontal diseases and oral mucosa. Medicinal sprays are indusrially made aerodispersive systems, in which the dispersion medium is air or gas (gas mixture) and dispersed phase - particles of solid or liquid substance with the size of particles from one to several tens of micrometers. Aerosol form of solutions, liniments, foams are used in dentistry as officinal preparations.

The knowledge of the basic principles of pharmacology, mechanism of action of various agents, dosage forms and methods of application enable the dentists of an adequate selection of highly effective treatment.

Use of medications with prolonged effect is a long-term plan in dental treatment. It makes possible to reduce the dose of the drug while potantiating the required effect and reducing toxicity and the risk of side effects. Thus, effective results are achieved with significantly reduced treatment time.
Requirements for the prolongation of the effects of substances used in

medicine are described in the State Pharmacopoeia of Ukraine and pharmacopoeias of other countries.

All methods of prolongating effects of drugs are divided into tehnological, chemical and physiological. Technological methods include creation of various coatings for medications: wax - fat mixtures, shellac with vegetable oils, proteins, macromolecular lices. New dosage forms are proposed: granules, micropellets, tablets coated with porous shell, lyposomes, microcapsules. The majority of prolongated medicines are prepared by chemical methods. The synthesis of these AGENTS is based on the transformation of the chemical structure of drugs and excipients. Physiological methods are based exceptionally on physiological mechanisms of the organism. It was established that the use of long-acting AGENTS can increase their strength and duration 1.5-2 times as much when compared with traditional forms.

At the Department of Therapeutic Dentistry, the long-acting antiseptics (chloramines, dioxidine, chlorhexidine), complexes of orotic acid and enzyme profezym, immobilized proteolytic enzymes (profezym, terrylityn,) medicinal glue composition (SK-1) for the treatment of pulp and periodontal diseases were introduced. Above-mentioned compositions are used in the forms of irrigations, lubrications, applications, aerosols.

Periodontal Dressings
(Periodontal Packs)
Types of Dressings

Periodontal Dressings can be divided into:

- Protective;
- Insulating;
- Therapeutic;
- Immobilizing

In most cases**,** after the surgical periodontal procedure the area is covered with a surgical pack – protective; insulating; immobilizing. In general, protective and insulating dressings have no curative properties;

they assist healing by protecting the tissue rather than by providing "healing factors." The pack minimizes the likelihood of postoperative infection and hemorrhage, facilitates healing by preventing surface trauma during mastication, and protects against pain induced by contact of the wound with food or with the tongue during mastication.

As insulating dressings, dental impression materials can be used (alginate, silicone, polyether).

Zinc Oxide-Eugenol Packs. Packs based on the reaction of zinc oxide and eugenol include the Wondr-Pak developed by Ward in 1923 and several others that modified Ward's original formula. The addition of accelerators, such as zinc acetate, gives the dressing a better working time. Other substances that have been added include asbestos, used as a binder and a filler, and tannic acid. However, asbestos can induce lung diseases, and tannic acid may lead to liver damage; therefore, both substances have been eliminated.

Zinc oxide-eugenol dressings are supplied as a liquid and a powder that are mixed prior to use. Eugenol may induce an allergic reaction that produces reddening of the area and burning pain in some patients.

Noneugenol Packs. The reaction between a metallic oxide and fatty acids is the basis for Coe-Pak, the most widely used type of dressing in the United States. This is supplied in two tubes, the contents of which are mixed immediately before use until a uniform color is obtained. One of the tubes contains zinc oxide, an oil (for plasticity), a gum (for cohesiveness), and bithionol (Lorothidol) (a fungicide); the other tube contains liquid coconut fatty acids, thickened with colophony resin (or rosin) and chlorothymol (a bacteriostatic agent). This dressing does not contain asbestos or eugenol and thereby avoids the problems associated with these substances.

Other noneugenol packs include *cyanoacrylates* and tissue conditioners (methacrylic gels). However, these are not commonly used.

According to the texture of dressing, they are *hard, patly hard, elastic*.

When the dressing is composed of Zn oxide mixed on liquid paraffin (vaseline) or lanoline it will not become hard after mixing.

The most popular now are partly hard dressings. These dressings are often used not only after surgery but in *therapeutic* treatment of periodontitis to reduce inflammation or promote healing. That is why periodontal dressings often include vitamins A, E, non-steroid antiinflammatory ointments and liniments and other biologically active substances. That is why these dressings can be classified as *therapeutic*. The aim of therapeutic periodontal dressings is to prolong the action of medications on the periodontal tissues.

Examples of *therapeutic* periodontal dressings:

No 1.

Lyzocyme 0,5
Tetracyicline 2,0
White Clay 7,5
The powder is mixed on peach oil

No 2.

Furacilinum 0,2
Na mephenaminatum 0,1
White Clay 15,0
The powder is mixed on olive oil

Dressings, introduced at the Department of Therapeutic (Conservative) Dentistry of Lviv National Medical University.

No 3 (G.S.Chuchmaj, I.S.Deneha, 1991)

Indometacinum 5,0
Chlorhexidinum bigluconatis 20% – 0,5
Oil solution of Tocopherol acetatis 5% – 7,5
Zn oxide 55,0

Solution of Methylcellulosae 6% up to 100,0

This periodontal dressing is recommended in the treatment of generalized periodontitis II and III stages of heaviness in the period of 4-6 hours. It has immunomodulative and antiinflammatory effects.

No 4 (I.S.Deneha, S.J. Kukhta, I.S.Hysyk, S.S.Riznyk, 1991)

Indometacinum 5,0
Chlorhexidinum bigluconatis 20% – 0,5
Metrogyl 0,5% – 7,5
Oil solution of Tocopherol acetatis 5% – 4,0
Zn oxide 45,0
Solution of Methylcellulosae 6% up to 100,0

The pack is kept on for several hours (6-24).

No 5

The periodontal pack based on pine tree oil (pine tar) and bee wax was introduced by H.R.Demchyna (1995). It is the example of hard type of dressings and has antiseptic, antioxidative properties and stimulates regeneration of periodontal tissues.

No 6 (I.S.Deneha, V.M.Zubachyk, 2002).

Flamikar 30,0
Na Diklofenak 10,0
Chlorhexidinum bigluconatis 20% – 1,0
Eucaliptus oil 2,0
Oil solution of Tocopherol acetatis 30% – 15,0
Zn oxide 8,0
White Clay 17,0
Enterosgel (adsorbent) 17,0

All ingredients after mixing, form a paste which is placed on the gums and isolated by one of hardening dressings.

Solution (solutio, -onis) is a liquid medical form which is intended

for external, internal or parenterally (injection) application. Advantage of this medical form in comparison with other is that the action of medicinal substances, entering the organism in the liquid state, comes quick, and a pharmacological effect of preparation is mostly complete.

Solution consists of basic, operating, substances (basis) and shape-generating – solvent (constituents). Simple solution contains one medicinal permeate, difficult – a few. Depending on a solvent solutions can be hydrogens, alcoholic, ether, olei. As solvents, the distilled water (aqua distillata) is used more frequently of all, an alcohol is ethyl (spiritus aethylicus), and also liquid oils, for example almond (oleum of Amygdalarum), peachy (oleum of Persicorum), sunflower (oleum of Helianthi), vaseline (oleum of Vaselini). Sometimes ether (Aether of medi-cinalis), glycerin (Glycerinum) may be used as solvents.

Historical sketches on the development of dentistry in Lviv

In the medieval Lviv, along with the folk dental treatment (quacks, medicinal men), the monastic (monks-curators), court (medicinal men, surgeons, druggists) and guild workshop (barbers, midwives) were developing simultaneously. The records made in the Lviv City Register point to the established fact that the barber Vaterush by name, died in 1382. Two manuals: “The Study of the Barber’s Trade” written by L. Peryny (1742-1812) and “The Study of the Dental and Gingival Disorders” written by the Austrian dentist Jacob PIenka (1773-1807) served as the main handbooks for the Lviv guild medical men. The Statute Barber Workshop in Lviv lasted up till 1773. Since that time all the practised doctors of Halychyna were subjected to the compulsory state qualificative attestation under the Medical Board with the Protomedic Andriy Krupynsky at the head. His 5-volume textbook on 2170 pages had been purposely designed for the training of medical men and included the anatomo-physiological chapter of the oral cavity and teeth, their disorders and methods of their treatment. [1)]

[1)] Ступницький Р.М. Магльований А.В.,Гриновець В. С., Кухта В.С. Стоматологічному факультетові у Львові – років. – Львів, 2008. – 220с.

Since 1828, dentistry, as the integral part of the medical education was included at the universities of the Austrian and Hungarian Empire (universities of Vienna, Prague, Krakiv, Lviv). At the beginning of the 19-th century the post of the Professor on dental treatment was introduced in the university. This post was held by Karl Prokip Kaliha – the author of the first Halytsky text-book "Diseases of teeth and methods of their treatment", published in 1838, in Vienna. [2)] His successor, the Professor of Dentistry, Vincent Strasky, who was simultaneously acting as the Director of the Medical Education at the University managed to republish this book in 1841 in Lviv. Vincent Strasky worked as the Professor on Dental treatment from 1842 till 1853. During the years of 1858-1862, the Halytsky Societies of Druggists and Doctors were founded in Lviv. In 1876, the First Congress of Doctors was held in Lviv. The participants of that Congress met in special sessions, including the odontological section.

In the 18-th century, the Medical Faculty was given the right to confer the Degrees of Masters and Doctors in Medicine. That was precisely the fact that explained the impetuous development of research. Within the period of 1791-1795, 56 doctors and druggists were confered their degrees of Masters. The scientific degrees of Doctors (on Medicine or Surgery) had been given to I.Menich, F.Babel, I.Ghiasler, I.Ferster, I.Nadvorsky, Yu.Khmel' and P.Krausneker in 1794-1797.

[2)] Karl Procop Kaliga Uber die krankheiten der Zahne und die Mittel sie zu heilen. – Wien,1838. – 54 s.

Since 1817, the public defences of Theses were temporary suspended. Therefore, both Laurentiy Voitkovsky, a resident of Halychyna and Adolf Knote, a physician from Podillya, succeeded in defending their Theses for the Doctor's Degree in 1820, at the Vilnius university. The theme of Voitkovsky's Thesis was "Epulid". The Degrees of Doctors of Medicine and Philosophy (Stomatology) were confered upon Andriy Hon'ka (1900) and Theodore Bohosevych (1901). They were the first Doctors of Sciences (Dentistry) in Lviv at that time. The academic status of Professor on Dentistry were given to: A.Hon'ka (1900), Theodore Bohosevych (1912), A. Cieszynski (1913).[3, 4)] Starting from 1894, the university readership course on Odontology and Stomatology was innovated in the curriculum at the medical department. Andriy Hon'ka and Theodore Bohosevych were at the head of that course by turns. In 1905, the clinical base- odontological ambulatory of the university with the school of dental technicians (on Stephanyk Str. 11) was founded to the purpose of that course. The Odontological Scientific Society began its activity in 1911. The Chair (institute) of Stomatology (Zelena Str., 5a) was founded in 1913.[3)]

[3)] Гриновець В. С., Магльваний А.В., Ступницький Р.М. До 125-річчя від дня народження професора Антонія Цешинського// Журнал АМН України, т.13,№4, 2007. –С. 807-812.

[4)] Ступницький Р.М. Магльований А.В.,Гриновець В. С., Кухта В.С. Стоматологічному факультетові у Львові – років. – Львів, 2008. 220с.

The first department of dentistry was founded in 1913 by A. Cieszynski on the basis of the dental ambulatory that had been functioning since 1905. A.Cieszynski received a higher medical education in Munich and Berlin. In 1913 having been awarded a title by the Austrian Ministry of Education he became the professor of the Department of Dentistry and the Head of University Dental Clinic of Lviv Medical Faculty. For the whole period of work at the Department of Dentistry professor A.Cieszynski had been working out the problems of dental radiology, anaesthesiology of the oro-facial region, maxillary surgery and prosthetics. He is the author of 378 publications including a number of monographies on radiology (1911), tooth apex resection (1912), conductive local anaesthesia at the eranium base (1915), suppurative surgery of oro-facial region (1931), medical economics (1928). Professor A.Cieszynski is well-known as the author of the first world atlas and text-book in radiology, which ran into several editions, the author of local novocaine anesthesia, radical gingiveclomy by Cieszynski – Vidman – Nejman. In 1936 the International Dental Federation (FDI) awarded the Lviv Dental School and prof. Cieszynski, in particular, the Miller's Medal for the valuable contribution in science. The well-known scientist was elected as the Associate Member of the Medical Academy of Sciences, Honorary Member of Dental Scientific Societies (New York, Washington, Vienna, Prague, Krakow, Buenos Aires). [3)]

[3)] Гриновець В. С., Магльваний А.В., Ступницький Р.М. До 125-річчя від дня народження професора Антонія Цешинського// Журнал АМН України, т.13,№4, 2007. –С. 807-812.

In 1939-1941 A. Cieszynski was the professor of the Lviv Medical Institute a representative of Ukraine. Well-deserved scientific successors were prepared by prof. A. Cieszynski.

One of his follower was prof. Lyubomyra Lutsyk, who became the chief of the newly organized Department of Therapeutic Stomatology (Dentistry) in the Lviv Medical Institute in 1960. Dental faculty founded of Medical Institute in Lviv 1n 1958, prof. Aleksander Koval been the first dean of the faculty.[5), 6),7)]

The first collection of scientific works of the Halytsky Scientific Society was published in 1968. Since 1989, the annual edition of collected articles on research is regularly published in Lviv in “Actual Problems of Dentistry” and the Journal “News in Dentistry”.[8)]

[5)]Готь І.М., Магльований А.В., Гриновець В.С. Професор Олександр Васильович Коваль – перший декан стоматологічного факультету у Львові. Львів, 2007. – 108с.

[6)]Зубачик В.М., Магльований А.В., Гриновець В.С., Кухта С.Й. Біля витоків стоматологічного факультету у Львові: професор Любомира Луцик. Львів, Кварт, 2007. – 108с., 65 іл.

[7)]Danylo Halytskyi State Medical University in Lviv. Editor in Chief: Zimenkovsky B.S., Lviv, 2014. –295 p.

[8)]Ступницький Р.М. Магльований А.В.,Гриновець В. С., Кухта В.С. Стоматологічному факультетові у Львові – років. – Львів, 2008. – 220с.

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The exposition of the museum of Dentistry at the Department of Conservative Dentistry of Danylo Halytsky National Medical University in Lviv reflects the development of Dentistry in Western Region of Ukraine, materials about the world-recognized professors-dentists starting from the 18 cent.

The available display units involve all historical stages of its development, starting from different epoch-making periods: Austrian (1784-1918); Polish (1919-1939); German (1941-1944); Soviet (1939-1941, 1944-1991), the Ukrainian independent State (since 1991).

The historical relationship between the West European and East European ways of development of Dentistry, terrible and tragic events of the 1st and 2nd World wars and their influences upon Lviv and its residents, including public figures, prominent scientists and scholars are confirmed by the official archival documents and photos. The rare materials, sets of old unique dental instruments, rewards of scientists, who were awarded by FDI for their great achievements in the field of Dentistry enrich the Museum's exposition in the interests of the University, and both the Ukrainian and foreign students.

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